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# SHELTER

Theme Paper | Policy Review | Case Studies



**World  
Habitat  
Day**

**THEME:  
HOUSING FOR ALL -  
A BETTER URBAN FUTURE**



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# SHELTER

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## EDITOR

SHELTER

HUDCO's Human Settlement Management Institute

HUDCO House, Lodhi Road

New Delhi – 110003

Tel: 011 – 24308600

Fax: 011 – 24365292

Email: hsmishelter@gmail.com

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: Mr. Jeevan Sahota

Cover Design: Ms. Pooja Nandy

## Registered Office

HUDCO Bhawan, Core – 7A

India Habitat Centre

Lodhi Road

New Delhi – 110003

Tel (EPABX): 011-24649610-23

24627113-15, 24627091, 92, 95

After Office Hours: 24648193-95

Fax: 011-24625308

CIN: L74899DL1970GOI005276

GST No. 07AAACH0632A1ZF

Website: www.hudco.org

## FROM THE EDITOR-IN-CHIEF

The World Habitat Day 2020 is being observed on the theme of 'Housing For All: A Better Urban Future'. In the context of the current difficult times the world is passing through due to COVID-19, this theme assumes critical importance, when there is large scale reverse migration owing to urgent need of shelter and livelihood opportunities. Inclusive, affordable and adequate housing is the key to sustainable transformation of our cities and communities and the present theme reaffirms the global commitment in the form of Sustainable Development Goal 11 target of 'access to adequate, safe and affordable housing and basic services for all by 2030 and the upgrade of slum' as well as the Habitat III New Urban Agenda of 'progressive realization of the right to adequate housing as a component of the right to an adequate standard of living.'

The focus on the catalytic role of housing for building a better urban future is specially significant for India in the context of Government of India's sustained efforts, through its flagship programme of 'Pradhan Mantri Awas Yojana– Housing for All (Urban)' since 2015 with a mission to provide housing for all in urban areas by 2022, under 4 different verticals, thereby fulfilling the aspirations of millions of households to have a decent living. In its fifth year of implementation, the PMAY-HfA(Urban), world's largest housing programme, has enabled approval of 10.78 million houses involving total investment of Rs.6.48 lakh crore till 20th September 2020 with central assistance of Rs. 1.72 lakh crore, out of which Rs. 0.76 lakh crore has been released to States in the framework of cooperative federalism.

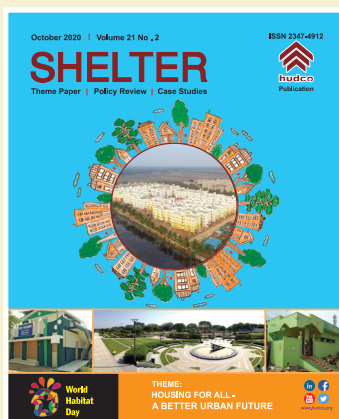
Further, for facilitating adoption of modern, innovative and green technologies and building materials for faster and quality construction of houses, a Technology sub-mission has been set up under PMAY-HfA(Urban). The PMAY Mission will substantially improve the access of the urban poor for formal sector housing finance as well as making the houses affordable to the urban poor segment. In addition, the Government of India has undertaken a number of demand-side and supply-side steps in order to catalyse the affordable housing market in India.

To mitigate the hardships faced by the migrant labour force due to COVID-19 and to prevent the reverse migration, as part of the Honourable Prime Minister's Vision of "Aatma Nirbhar Bharat", the Ministry of Housing & Urban Affairs (MoHUA), Government of India, has introduced a scheme of 'Affordable Rental Housing Complexes' (ARHCs) for urban migrants/ poor as a sub-scheme under PMAY-HfA (Urban) in all statutory towns along with all industrial estates. This policy level intervention is one of the significant steps which will improve their living conditions and provide access to dignified and planned housing close to their workplace in industrial sector as well as in non-formal urban economy.

This volume of Shelter is based on the World Habitat Day theme of 'Housing For All: A Better Urban Future' and contains an array of articles which provide diverse insights into a range of issues related to housing for all for building a better urban future. The theme papers contributed by UNHABITAT-India; Alok Mishra & A.K. Sen; Riddhi Gediya & Devanshu Pandit; and A.K. Jain highlight the issues relating to inclusive and healthy land and housing market as well as criteria for evaluating innovative technologies for affordable housing. In the policy review section, Baikunth Roy & Vidya Yadav review the assessment and mapping of homelessness in India and in the state of Bihar, while Debarpita Roy & Manikandan KP reviews two important initiatives ARHC and Model Tenancy Act of Govt. of India. In this section, Prakriti Mehta provides a commentary on the affordable rental housing complexes (ARHC) scheme and Snehal Ghag reviews the affordability for urban poor through learning from Dharavi and the world. This volume also presents four case studies contributed by Alonso Ayala and others; Titas Bhowmick & Sejal Patel; Aakriti Singhai & Bhavya Mathur; and Chahat Shah, Debesh Chakraborty & Sohan Gupta on different aspects of housing and slum upgradation/rehabilitation in India, which can be appropriately replicated by other cities and towns.

Hope you enjoy reading this issue of Shelter.





## Theme

The World Habitat Day 2020 is being observed on the theme of 'Housing For All: A Better Urban Future'. In the context of the current difficult times the world is passing through due to COVID-19, this theme assumes critical importance, when there is large scale reverse migration owing to urgent need of shelter and livelihood opportunities. Inclusive, affordable and adequate housing is the key to sustainable transformation of our cities and communities and the present theme reaffirms the global commitment in the form of Sustainable Development Goal 11 target of 'access to adequate, safe and affordable housing and basic services for all by 2030 and the upgrade of slum' as well as the Habitat III New Urban Agenda of 'progressive realization of the right to adequate housing as a component of the right to an adequate standard of living.'

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## Theme Papers

- 03 | SHELTER FOR INDIA'S URBAN POOR: BUILDING RESILIENCE THROUGH INTEGRATED COMMUNITY PLANNING AND HOUSING FOR ALL  
*UN-Habitat-India*
- 08 | CITIES AND AFFORDABLE HOUSING IN INDIA- MAKING LAND AND HOUSING MARKET INCLUSIVE  
*Dr. Alok Kumar Mishra  
Dr. Akshaya Kumar Sen*
- 20 | CRITERIA FOR EVALUATION OF INNOVATIVE CONSTRUCTION TECHNOLOGIES FOR AFFORDABLE HOUSING  
*Ms. Riddhi Gediya  
Dr. Devanshu Pandit*
- 27 | COVID 19: NEED FOR INCLUSIVE AND HEALTHY HOUSING  
*Mr. A.K. Jain*

## Policy Review

- 34 | ASSESSMENT AND MAPPING OF HOMELESSNESS - A COMPARATIVE STUDY BETWEEN INDIA AND BIHAR  
*Mr. Baikunth Roy  
Ms. Vidya Yadav*
- 46 | A COMMENTARY ON THE AFFORDABLE RENTAL HOUSING COMPLEXES UNDER PMAY(U)  
*Ms. Prakriti Mehta*
- 53 | URBAN INDIA'S MUCH NEEDED RENTAL HOUSING PUSH  
*Dr. Debarpita Roy  
Mr. Manikandan KP*
- 60 | TOWARDS AFFORDABILITY TO URBAN POOR- LEARNINGS FROM DHARAVI AND THE WORLD  
*Ar. Snehal Shirish Ghag*

## Case Studies

- 66 | HOUSING ASPIRATIONS OF RESETTLED COMMUNITIES THROUGH A GENDER LENS -

AN ANALYSIS OF DRAWINGS BY WOMEN FROM PERUMBALKAM IN CHENNAI, INDIA  
*Dr. Alonso Ayala  
Dr. Sunitha Don Bosco  
Dr. Maartje van Eerd  
Mr. C. Velayutham*

- 77 | OUTREACH & PERFORMANCE OF CO-LIVING AS A NEW RENTAL HOUSING FORMAT - A CASE OF NOIDA & GURUGRAM  
*Mr. Titas Bhowmick  
Dr. Sejal Patel*
- 89 | CRITICAL ANALYSIS OF DELHI'S IN SITU-SLUM REHABILITATION POLICY ON PPP MODEL -A STUDY OF SLUMS OF SHALIMAR BAGH  
*Ms. Aakriti Singhai  
Ms. Bhavya Mathur*
- 101 | ASHA CHADHI PARWAN - DREAM COMES TRUE -A MODEL PROJECT UNDER PMAY AT RAJNANDGAON, CHHATTISGARH  
*Mr. Chahat Shah  
Mr. Debesh Chakraborty  
Mr. Sohan Gupta*

## IN THE BOX

- HUDCO'S HSMI Organised Online Training Programme on SDGs 02
- 50<sup>th</sup> Annual General Meeting of HUDCO 07
- Dedication of Ambulance Services by DCP, HUDCO 52
- General Guidelines : Checklist for Submission of Articles 59
- Release of 'Shelter' Publication: Apr - May 2020, Vol. 21, No.1 76
- HUDCO Organized Webinar to Mark 6<sup>th</sup> International Yoga Day 88
- Citynet India Chapter Webinar on Rental Housing 113



## HUDCO's HSMI ORGANISED ONLINE TRAINING PROGRAMME ON 'ACHIEVING THE SUSTAINABLE DEVELOPMENT GOALS- THE WAY AHEAD', 24<sup>TH</sup> - 26<sup>TH</sup> AUGUST 2020

HUDCO's HSMI organised a free 3-days' Online Training Programme on 'Achieving the Sustainable Development Goals- The Way Forward' during 24th-26th August 2020. The programme was attended by 63 participants, drawn from urban local bodies, state public agencies, HUDCO, GIZ and some educational Institutions. The programme was inaugurated by Shri M. Nagaraj, Chairman & Managing Director (Additional Charge) & Director Corporate Planning, HUDCO in the online presence of Shri D. Guhan, Director Finance, HUDCO and Dr. S.K. Gupta, Executive Director (Training) HUDCO's HSMI.

The programme was highly interactive and various experts and resource persons from UN-Habitat, MoSPI, MoHUA, NIUA, SPA-Bhopal, KILA, IGIDR, ISDG and GIZ were invited to take online sessions and interact with the participants. Key issues covered during the training programme include: Overview of Sustainable Development Goals, New Urban Agenda and localizing and Leveraging SDG 11; India's current Position vis-à-vis SDGs; SDG overview in the State of Kerala; National Indicators Frameworks for Mapping SDGs in India; SDGs and Role of ULBs; Data collection and reporting on SDG targets/indicators; Role of



*Clock-wise from bottom right: Mr. M. Nagaraj, CMD-HUDCO, Dr. S.K. Gupta, EDT-HSMI, Mr. D. Guhan, DF-HUDCO & Mr. Surendra Singhai, GM(P)-HSMI during inaugural session.*

Civil Society in realizing SDGs; Monitoring & Evaluating SDG outcomes - Governance reforms

and Policy framework at local level; and Use of digital tools for SDG monitoring.



The training programme concluded that the way ahead for achieving SDGs in India include: Capacity development and capacity building at all levels for effective implementation and achievement of SDG targets; Need for Robust database and a Data Policy where alternative data such as Open Source data and non-traditional data can be used through proper data standardization, harmonization and data portability; Need for

separate budget for achieving SDGs at the State and local level; Need to be proper convergence; integration; and Vertical & horizontal linkages to achieve the SDG targets.

The programme was concluded with the valedictory address by Shri M. Nagaraj, Chairman & Managing Director (Additional Charge) & Director Corporate Planning, HUDCO. The e-Certificates of participation were awarded to the participants.



# SHELTER FOR INDIA'S URBAN POOR

## –Building Resilience through Integrated Community Planning and Housing for All

### UH-HABITAT INDIA

**The key message of WHD 2020 theme – “Housing for All”, emphasizes that “Housing is the building block of people’s health, dignity, safety, wellbeing and inclusion”. In this decade for action to achieve New Urban Agenda and Sustainable Development Goals by 2030, India can build on the momentum of urban flagship programs and accelerate the transformation of cities into inclusive and sustainable hubs.**

*Each year, World Habitat Day (WHD), marked on the first Monday of October, presents an opportunity to celebrate the achievements made towards the well-being of urban residents. In keeping with the tradition to highlight an important urban issue every year, the theme of WHD 2020 is “Housing for All – A Better Urban Future.”*

### INTRODUCTION

**COVID-19 has drawn attention to the housing crisis**

Placing housing at the center underscores the deeply entrenched urban plight of our cities. 65 million persons, that is 1 in every 6 persons, lived in slums and informal settlements in India in 2011. The existence of 33,510 slums, surveyed in 2013, is another staggering statistic. Long-term marginalization of these areas, is visible in poor access to water & sanitation (WASH) amenities in slum households - 43.3% households did not have water inside their homes and 44% did not have toilets inside houses.<sup>1</sup> Inadequate housing is a challenge even outside the perimeters of slums and informal settlements. As of 2011, 32 percent of urban

households lived in 1-room unit, and 30 percent of urban households lived in 2-room units<sup>2</sup>, laying out the scale of overcrowded habitable spaces. Overall, it is estimated that India faces an urban housing shortage of 12 million units mostly in Low Income Groups (LIGs) and Economically Weaker Sections (EWSs).<sup>3</sup>

The infliction of COVID-19, an unprecedented pandemic, has had a sobering effect in urban areas. Major cities in most states are the worst affected and also represent a large share of their state’s COVID-19 caseload. Mumbai accounts for 55% of Maharashtra’s total cases, Chennai accounts for 70% of Tamil Nadu’s total cases, Ahmedabad accounts for 70% of Gujarat’s total cases, and Pune, Indore, Jaipur are the most affected in their respective states. It is no coincidence that Maharashtra, Andhra Pradesh, West Bengal, Uttar Pradesh, Tamil Nadu and Madhya Pradesh which have almost 70% of the total urban slum population are also areas where COVID-19 has taken deeper root. The pandemic also exposed vulnerabilities especially for

*Key Words: Housing, Social Protection, Community Planning, Slum upgradation*

*Contributed by UN-Habitat India (parul.agarwala@un.org), New Delhi.*



people living informally in slums, unauthorised colonies and dwellings which lack adequate space, sanitation facilities and proper hygiene measures.

COVID-19 has exposed the weaknesses in urban governance and structures to guarantee the most fundamental need - safe and dignified shelter for vulnerable groups of the urban population. The growing inequality within urban areas remains largely unaddressed and has incubated conditions for the large scale spread of the biological hazard of COVID-19 pandemic into disastrous proportions and gravely risked public health. Physical distancing and hand washing, identified as essential preventative measures of COVID-19, are unrealistic

propositions for most urban poor residents who lack access to basics such as clean drinking water and sanitation.

### **LEARNING FROM SUCCESS OF PMAY AND SBM**

“Housing for All Mission” and “Clean India Mission” have built strong foundations for addressing the adequate housing crisis. The two flagship missions set out ambitious goals to build 20 million affordable housing units and provide basic sanitation facilities to the poorest in the country.

Of the 20 million housing units under Pradhan Mantri Awas Yojana (PMAY), 18 million are proposed for slum households recognizing the need to address

the inequalities of a large segment of urban population. The mission outlines four verticals for slum rehabilitation and constructing affordable housing by utilizing subsidies and encouraging public-private partnerships. Additionally, a “Technology Sub-Mission” established under PMAY is mainstreaming and facilitating modern, innovative and green technologies and building material for faster and better-quality construction of houses. Thus far, under the mission, 10.8 million houses have been sanctioned, 3.8 million houses have been completed, and 1.5 million houses are being constructed using new technologies. The mission has generated 19.3 million total jobs and 5.4 million direct jobs.<sup>4</sup>





The Swachh Bharat Mission (SBM) has been transformational in eliminating open defecation and improving solid waste management across the country. Since its inception in 2014, 6.2 million individual latrines and 594,658 community toilets have been built in urban areas. The Mission has also prioritized behaviour change in communities to practice safe hygiene. To date, 4,323 cities have been declared open defecation free. The Mission has also brought a paradigm shift in terms of changing behaviours and has pushed for cleanliness to become a movement. Additionally, many cities have transformed and have invested in safe solid waste management and disposal as part of the SBM

mission.

COVID-19 brought forth new challenges and vulnerabilities in access to housing and WASH facilities. The unforgettable impact of COVID-19 on urban migrants became international news as millions of temporary workers were stranded without shelter and livelihood in cities. In response to the looming shelter crisis for temporary workers and migrants, the Ministry of Housing and Urban Affairs, has incorporated rental housing as a viable option 'in the form of Affordable Rental Housing Complexes Scheme as a sub-scheme under PMAY'. The approach paper, "Affordable Rental Housing Complexes," delves into opportunities to promote rental housing for

migrants and urban poor on unutilized lands near centers of work and utilizing vacant houses constructed for EWS and LIG groups by centrally-funded schemes.<sup>5</sup>

COVID-19 provides a strong imperative for central, state and local governments to consider different types of disruptions including from health pandemics to strengthen their preparedness, response and recovery policies and strategies in a holistic and integrated manner to serve the needs of all the different vulnerable urban groups.

## WAY FORWARD

The key message of WHD 2020 theme – "Housing for All", emphasizes that "Housing is

the building block of people's health, dignity, safety, well-being and inclusion". In this decade for action to achieve New Urban Agenda and Sustainable Development Goals by 2030, India can build on the momentum of urban flagship programs and accelerate the transformation of cities into inclusive and sustainable hubs.



Area-based comprehensive housing for slums and informal areas. The transformation of slums and informal settlements

must go beyond merely improvements in the housing sector and enable residents to access public green and open spaces, employment opportunities, healthcare and effective sanitation services, schools, childcare centres, and other social facilities. With opportunities to utilize the stimulus funding for creating livelihoods, fast-tracking existing project pipelines with largest socio-economic impacts in slums and informal areas must be prioritized. While the effort requires substantial resources and collaboration across stakeholders, the time is ripe to facilitate much needed structural transformations in cities.

Social protection policy and programs based on locally-responsive strategy for urban

poor cohorts. The challenges, priorities, and needs of different segments of urban poor must be studied and documented by involving local communities as they understand the context and needs. With a long-term perspective, shelter and livelihoods of urban poor/migrants must be developed through a locally-owned and community driven process. By directly engaging with local communities, program activities tailored to respond to circular migration between rural and urban areas and the needs of permanent/stable urban poor segments must be systematically planned and implemented.

Formally integrate partnerships between community-led and grass-roots organizations in urban local bodies for planning and implementation.





Participatory planning that facilitates collective design, planning, implementation and feedback from multiple stakeholders and interest groups enhance accountability, transparency and information dissemination. Collaboration across levels of government, private sector, civil society and other stakeholders is surely going to be the new norm and must be initiated so as to bridge the capacity constraints of each stakeholder group to respond to a crisis on its own. Grassroots organizations can bring strong capacities to activate and mobilize people and implement programmes and activities at the local level. Partnerships which leverage the strengths of each stakeholder and collectively enhance the ability to roll-out a comprehensive response by sharing resources,

capabilities and capacities can be an effective and efficient approach.

Restructure static master planning regulations for a dynamic granular neighborhood planning. The pandemic has clearly demonstrated the need for spatial interventions based on granular data to establish multi-sectoral response measures. The current master plans of cities as per the statutory requirements are inadequately structured to respond to the continuously changing needs of cities as swiftly as possible instead of a static approach of master plan revisions every 20 years. Cities need to adopt a dynamic spatial data-driven approach to develop integrated strategies and action plans across different sectors in neighborhoods to respond to local market signals and unpredictable shocks

such as the ongoing health crisis. Establishing systems and processes for emergency response that are grounded in data, mapping and analysis of inter-linked sectors is possible in real time with smart technologies.

## REFERENCES

<sup>1</sup>Census 2011

<sup>2</sup>[https://censusindia.gov.in/2011-Common/NSDI/Houses\\_Household.pdf](https://censusindia.gov.in/2011-Common/NSDI/Houses_Household.pdf)

<sup>3</sup>FSG. (2018). State of the Low-Income Housing Finance Market 2018. Das, C., Karamchandani, A., & Thuard, J.

<sup>4</sup>PMAY (U) Achievement (provisional), as of 28 September 2020. <https://pmay-urban.gov.in/covid19/progress/1.pdf>

<sup>5</sup>Affordable Rental Housing Complexes (ARHCs), Approach Paper. MoHUA. [https://pmay-urban.gov.in/5yearcelebration/ARHC\\_Approach\\_Paper-17July2020.pdf](https://pmay-urban.gov.in/5yearcelebration/ARHC_Approach_Paper-17July2020.pdf)

## 50<sup>TH</sup> ANNUAL GENERAL MEETING OF HUDCO



The Housing & Urban Development Corporation Ltd. (HUDCO) held its 50th Annual General Meeting through Video Conference on 30.09.2020. Shri M. Nagaraj, Director Corporate Planning HUDCO chaired the meeting and addressed the shareholders to apprise them of the outstanding performance of the Company in its Golden Jubilee year.

# CITIES AND AFFORDABLE HOUSING IN INDIA

## –Making Land and Housing Market Inclusive

**DR. ALOK KUMAR MISHRA**  
**DR. AKSHAYA KUMAR**  
**SEN**

**The problem of affordable housing in India is so huge that both markets and governments need to work together to achieve the social objectives of inclusion. While governments may focus on the poorest of the poor segments, inclusionary zoning (IZ) and inclusionary housing (IH) methods can be useful to solve a part of the problem.**

*This paper aims to explore effective ways to provide affordable housing to the Economically Weaker Sections and Lower Income Groups in Indian cities. It attempts to address the potential issues of residential exclusion of the poor, including slum dwellers through the technique of Inclusionary Zoning (IZ) and Inclusionary Housing (IH). While several innovative initiatives have been embarked upon by the Central and State Governments in India to facilitate the provision of land and affordable housing to EWS and LIG segments, they have not been able to make an appreciable impact on the supply of affordable housing. However, India has generated some very successful models of inclusionary zoning like Gujarat Town Planning Scheme (TPS) with landowners/farmers as partners in urban development, with no cost to government and without the cumbersome process of land acquisition. The major finding of the study suggests IZ and IH could be promoted in India in three ways. The first is to provide for land reservation for socially and economically weaker sections as in Gujarat Town Planning Scheme, with landowners as partners. The second is to impose a modest IZ or IH requirement within the existing zoning framework, where the developer bears the cost of subsidizing to the extent she/he is compensated in the form of cost offsets and incentives,*

*e.g. access to highways. The third way is to link IZ or IH to significant upzoning of either particular areas or larger areas to gain from the principle of land value recapture. These measures will go a long way to supplement public housing under programmes like Housing for All.*

### INTRODUCTION

India is urbanizing and the nation's future is urban. The urban population of India has increased from 286 million in 2001 to 377 million in 2011. The 2018 Report of United Nations: *World Urbanization Prospects—the 2018 Revision* has predicted the figure to touch the 877 million by 2050, with more than 50 percent of the global population living in its cities and towns. The number of cities in the country with 1,00,000 or more population has increased from 394 in 2001 to 468 in 2011. While urbanization leads to growth in secondary and tertiary economic activities in cities, it also attracts migrants from rural areas and smaller towns for jobs, leading to a phenomenon of “urbanization of poverty”. This poses serious policy and managerial challenges. With rapidly increasing urbanization, the demand for housing

*Key Words: New Urban Agenda, Affordable Housing, Holistic Urban Planning, Inclusionary Zoning*

*Dr. Alok Kumar Mishra (alokmishra@uohyd.ac.in) is Associate Professor, School of Economics University of Hyderabad. Dr. Akshaya Kumar Sen (aksen@hudco.org) is Joint General Manager (Eco.) & Fellow, HUDCO's HSMI, New Delhi.*



increases in urban areas, putting increasing pressure on land, civic infrastructure, especially transportation, water supply, sewerage, drainage, open spaces, etc. However, affordable housing and basic amenities have not grown at the same pace as urbanization, and India is struggling to deal with the reality of its urban future.

With rising urban population growth due to natural increase, migration and reclassification factors, the urban sector of India is suffering from an extreme housing shortage, the bulk of which fall under the Economically Weaker Section (EWS) and Lower Income Group (LIG) categories. The biggest bottleneck in providing affordable housing to the urban poor, including migrants is the lack of suitable, litigation-free, adequately serviced urban land that is also located at a reasonable commuting distance from their workplaces (Mishra and Mohanty, 2017). The poor and low-income groups in cities in India get completely weeded out of formal urban land markets in the process of urban planning, which is based on the concept of “master plan” and a “command and control” paradigm.

Failure in planning has led to large scale exclusion, resulting in substitute systems outside the formal frameworks. A quarter of the urban population lives in overcrowded slums in

sub-human living conditions with improper sanitation and hygiene, inadequate drinking water, and poor quality of shelter (HPEC, 2011). The bulk of the urban poor gets employed and accommodated in the informal sector in these urban areas. Lack of affordable housing, workplaces and basic amenities, including public transport and absence of skills for urban jobs, etc. affects their productivity and remittance capacity adversely and accentuates misery in the countryside. Adequate housing in cities can alleviate poverty by improving people’s health and making them productive, increasing their living standards and increasing urban-rural money transfers. However, the widening gaps between demand for and supply of affordable housing and inadequate housing finance solutions have forced the urban poor to seek shelter in highly congested slums, making them subject to health hazards.

In this context, the paper explores the genesis of the affordable housing shortage and highlights the failure of the city master plan. Given the significance of affordable housing in the Habitat III New Urban Agenda, the paper dwells on an affordable housing strategy, with a focus on empirical experience and suggestions for the adoption of IZ and IH in India.

## THE GENESIS OF AFFORDABLE HOUSING SHORTAGE

As reported by Census 2011, 2.43 million urban households had no exclusive room, compared to 1.25 million in 2001; 25.34 million were living in one room in 2011 as against 18.85 million in 2001. The number residing in one room or less constituted 35.2% of the total number of households in urban areas in 2011 — marginally reduced from the figure of 37.4% in 2001 (Mishra and Mohanty, 2017). 14.99 million (80% of the urban households) live in congested houses and require new houses, whereas 3% of the urban households live in homeless conditions. Around 5% (0.99 million) and 12% (2.27 million) of the urban households live in non-serviceable kutcha and obsolescent houses. The Ministry of Housing and Urban Poverty Alleviation, Government of India estimated housing shortage in India at 18.78 million in 2010, with 96 percent or 17.6 million pertaining to Economically Weaker Sections and Lower Income Groups (MoHUPA 2010, Mohanty 2014). According to the Expert Committee of MoHUPA, only 50% of the EWS live in pucca houses; all the people living in the kutcha houses belong to mostly EWS (10%) and LIG (2%); only 0.5% of Middle Income Groups (MIG) live in kutcha

homes; none of the Higher Income Groups(HIG) resides in kutchha houses. Paradoxically, 10.1 percent of houses remained vacant (Census, 2011). This indicates the failure of market forces in correcting for the weaknesses in urban housing markets. Lack of affordable housing is amongst the major challenges of urban policy in India (McKinsey 2010; HPEC 2011; Judge et al. 2014; Mohanty 2014, 2016).

There is an urgent need to find a way out to ensure that the poor and low-income groups have access to land tenure, affordable housing and basic services. Experiences suggest that most state governments have failed to provide an adequate quantity of subsidized public housing; they have not made adequate pro-poor housing finance available and also not carried out effective site-and-service programs, including slum redevelopment and rehabilitation schemes to bridge the widening supply-demand gaps in lower-income housing segment of the market. Urban land markets have failed the poor; the urban planning process has also been exclusionary.

## FAILURE OF MASTER PLANS

Nearly one-fourth of the urban population in India lives in slums and around 80 percent of urban workers are employed in

the informal economy (HPEC, 2011). Informal housing and workplaces do not find a place in the outdated model of spatial planning followed and implemented in India. The master planning model implemented in India is rooted in the 1947 Town and Country Planning Act of the United Kingdom. The UK changed its planning paradigm in 1968. However, India continues to follow it in the original form. This model is not linked to the income distribution structure of cities and ignores the fact that a large segment of the population in cities belongs to the poor and low-income groups. It also does not integrate inclusion into planning, financing, and governance in cities. It fails to plan for “informal city” and recognizes only the formal sector.

The city master plans have failed to provide adequate space for the poor to live, work and vend. The land allocation process adopted by the Government planning agencies ignores the needs of the urban poor for housing and informal activities carried out in non-conventional workplaces. While the master plans have invariably allocated space for shopping malls and high-end commercial activities, they have failed to allocate space for informal markets and vending zones. The master plans have also neglected mixed land-use zoning, which is appropriate

for Indian conditions, with large numbers engaged in home-based work and street vending. The lack of legal recognition to the informal sector urban planning has led to frequent evictions of the urban poor from homes and workplaces in the name of master plan enforcement and world-class city. Master Plans in India conceive a grand vision and end-state spatial form, unrelated to the real urban economy. The technocratic master plans rely on a non-participatory process. They treat areas with similar characteristics as ‘conforming’ for the high and middle-income segments while regarding slums in the same area as ‘non-conforming’ and ‘illegal’.

## HOUSING AND THE NEW URBAN AGENDA

If cities must be sustainable, housing must be placed at the centre of urban policies. With rapid population growth, high levels of poverty and pervasive urban inequality, it is evident that housing is inseparable from urbanization and should be a socio-economic imperative. The housing policies put in place over the last 20 years through the enabling approach have not succeeded in promoting adequate and affordable housing (UNhabitat.org). Governments have backed away from direct supply without giving sufficient consideration to the markets and regulatory framework to enable other actors in the process to step



forward and provide adequate and affordable housing. After a long period “in the wilderness,” housing is emerging as an important sector once again.

In 2010, as many as 980 million urban households globally lacked decent housing, as will another 600 million between 2010 and 2030. One billion new homes are needed worldwide by 2025, costing an estimated \$650 billion per year, or US\$9-11 trillion overall (UNhabitat.org). Besides, shortages in qualitative deficiency are much larger than those in quantity. Numbers of urban residents living in slums have also increased from 689 million in 1990 to 881 million in 2014. This represents an increase of 28 percent over the past 14 years. Still, in 2014, 30 percent of the urban population of developing countries resided in slums, in comparison to 39 percent in the year 2000. With urban populations expanding at unprecedented rates since 1996; it is perhaps not surprising that many cities are falling short in housing supply. In South Asia, housing shortfalls are particularly acute, amounting to 38 million dwellings; the informal sector provides 60-70 percent of urban housing in Zambia, 70 per cent in Lima, 80 per cent of new housing in Caracas, and up to 90 per cent in Ghana (WCR, 2016). Sub-Saharan Africa alone accounts for 5 percent of the total increase

in the number of slum dwellers among developing regions between 1990 and 2014.

The slum challenge continues to be one of the faces of poverty, inequality and deprivation in many cities in developing countries. Improving the lives of slum dwellers has been recognized as one of the essential means to end poverty worldwide. Collective action in different parts of the world has shown that living conditions in slums can be improved. The fact that 320 million people were lifted out of slum-like conditions between 2000 and 2014 demonstrates that it is possible. Although the proportion of the urban population residing in slums today is lower than it was some two decades ago, the absolute number of slum dwellers continue to increase. A broader, more participative and integrated approach to slum upgrading is needed. Participatory slum up-gradation program is operational in 160 cities in 38 countries, providing enabling frameworks for at least 2 million slum dwellers.

With the “Housing at the Centre” approach, UN-Habitat seeks to re-establish housing problems and opportunities in the international development agenda in an increasingly strategic manner and in relation to the future of urbanization. To reposition housing at the centre of sustainable development,

this framework proposes a twin-track approach: curative, involving improvements to current housing stock such as slum upgrading; and preventive, involving building new housing stock. The ‘New Urban Agenda – Quito Declaration on Sustainable Cities and Human Settlements for All’, adopted on 20<sup>th</sup> October, 2016 during the Habitat-III Conference, commits all member nations, among others, to foster the progressive realization of the right to adequate housing as a component of the right to an adequate standard of living. For India which is fast urbanising, it is all the more important to address issues like housing, transport, energy, social equity, employment, rural-urban migration - all of which are part of the agenda. The NUA calls for an urban paradigm shift to re-address the way planning are done. The shift, in India, must address issues like planning, designing, finance, governance, housing and above all participatory democracy.

## KEY NATIONAL INITIATIVES

### National Urban Housing & Habitat Policy, 2007

The inclusion of the poor in city planning and development of India was first emphasized by the National Urban Housing & Habitat Policy (NUHHP), 2007 with the prime goal of ‘Affordable Housing for

All which would help in development of sustainable urban habitats in India. It was based on the demographic trends reported by Census 2001 and estimates of urban housing shortage arrived at in the context of the 11<sup>th</sup> Five Year Plan. The Policy was formulated taking into account the Millennium Development Goals (MDGs) adopted by the United Nations in 2000. The key focus areas of NUHHP-2007 included: (i) Provision of “Affordable Housing for All” with emphasis on vulnerable sections of society; (ii) Use of perspective of regional planning to promote a symbiotic development of rural and urban areas; (iii) Bridge the gap between demand and supply of housing and basic services; (iv) Innovations in the area of housing and infrastructure, e.g. FDI, PPP, Securitization, etc.; (v) Expansion of fiscal concessions; (vi) Incentives to motivate, persuade and encourage various stakeholders to participate in the delivery of housing and infrastructure; and (vii) Build synergy, convergence and integration of housing and related infrastructure intervention. The Policy stipulated reservation of 10-15 percent of land in every new public or private housing projects or 20-25 percent of Floor Area Ratio (FAR), whichever is greater, for housing the Economically Weaker Sections (EWS) or Lower Income Group (LIG) through appropriate

spatial incentives.

### **Jawaharlal Nehru National Urban Renewal Mission**

The Basic Services to Urban Poor (BSUP) and Integrated Housing & Slum Development Programme (IHSDP) components under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) prescribed for reserving at least 20-25 percent of developed land in all housing projects (both public and private) for EWS/LIG category with a system of cross-subsidization, that is, other groups would be charged higher prices to subsidize the low-income households.

### **Rajiv Awas Yojana**

Learning from the experiences of JNNURM, the Government of India launched the scheme of Rajiv Awas Yojana (RAY) in 2012 with a vision of creating a “Slum-free India” with equitable and inclusive cities in which every citizen has access to decent shelter, basic civic infrastructure and services, social amenities and strong livelihood linkages. The scheme applied to states and cities which committed property rights to slum dwellers. The main focus of this scheme was to redevelop all existing slums and suggest solutions to the problem of a shortage of affordable housing so that the growth of new slums could be prevented. About 50 percent of the cost of slum development/

improvement, including housing was to receive a central grant for a project. The mission of RAY was to rectify the failures of the formal urban planning system that are responsible for the creation of slums. It planned for providing affordable housing stock to the urban poor and initiated some crucial policy changes like the security of tenure and entitlement of the property rights to slum-dwellers and the poor in order to make cities inclusive. However, RAY was not able to get a response from the States for land and housing market reforms to support the poor.

### **PMAY-Housing for All-Urban**

In order to providing affordable housing for all by 2022 and creating slum free cities across the country, the ‘Pradhan Mantri Awas Yojana (Prime Minister’s Housing Scheme): Housing for All (urban)’ Mission, launched in June 2015, promises to provide 20 million affordable houses, especially Economically Weaker Section (EWS) and Lower Income Group (LIG) households in urban areas by the year 2022, by addressing the housing requirements of urban poor including slum dwellers through 4 programme verticals:

- (i) Slum rehabilitation of slum dwellers with participation of private developers using land as a resource and additional FSI/FAR/TDR;

- (ii) Promotion of Affordable housing for weaker section through credit linked subsidy with interest subvention upto 6.5% by the Government of India;
- (iii) Affordable Housing in Partnership with public and Private sectors and central grant of Rs. 1.5 lakh for each EWS house;
- (iv) Subsidy for beneficiary-led individual house construction with central assistance of INR 150,000 per housing unit constructed by the beneficiary;

A *Technology Sub-mission* has been set up under Pradhan Mantri Awas Yojana (Urban) to facilitate adoption of modern, innovative and green technologies and building materials for faster and quality construction of houses. The PMAY Mission will substantially improve the access of the urban poor for formal sector housing finance as well as making the houses affordable to the urban poor segment. The houses to be built through public-private-partnership, interest subsidy and increased flow of resources to the housing sector. Similarly, towards incentivising commercial banks and financial institutions to lend to the urban poor, the Government of India implemented a 'Credit Risk Guarantee Scheme' whereby lending institutions are guaranteed against the loan

default to the extent of 90 per cent.

One positive aspect of the "PMAY-Housing for All (Urban)" Mission is the integration of Aadhaar Number and Jan Dhan Yojana bank account of beneficiaries. The Aadhaar-Jan Dhan Yojana linkage will help in transparent identification of beneficiaries, tracking of the process of the mission and cutting down delays. Another positive aspect is that the scheme discards the "one size fits all" approach and adopts the spirit of cooperative federalism. Ownership of the house is to be in the name of the woman or jointly with her husband. The carpet area of each house for the EWS category will be of 30 sq. mt. In the case of non-availability of land, State Governments can relax this norm with the consent of beneficiaries. They can also enhance the area by meeting the additional expenditure required.

In India, housing (including affordable housing) has been the exclusive preserve of public sector entities such as Housing Boards or Development Authorities. Private sector real estate developers have historically excluded them from affordable housing. One major trend since the global liquidity crisis of 2008 - 2009 in India is that private sector developers are willing to assume risks and put their entrepreneurial talent at stake on the affordable housing

segment. Since 2009, real estate developers in the country have launched many projects in the affordable segment across the Indian cities. Several private developers have carved a niche for themselves in this sector.

The implementation of the Housing for All Mission involves many challenges, given the experiences of the earlier national initiatives of BSUP and IHSDP components under the JNNURM. Firstly, there is a scarcity of serviced land to take up housing. Secondly, the ever-increasing urban population fueled by migration and reclassification of rural areas into urban, makes it almost impossible to plan for the future of cities and implement housing by securing finance. Estimation and identification of migrants and new residents constitute a very big challenge. Thirdly, like JNNURM, lack of matching funds from the States and cities, poor planning and implementation capacity, red-tapism, rent-seeking, and lack of incentive and motivation on the part of the local official machinery pose significant problems. Fourthly, while strategizing affordable housing and implementing slum redevelopment programmes, permission is required from a number of departments and authorities. Coordination is another huge task in programme implementation. Fifthly, the biggest drawback in all the urban missions of the Government



is that schemes are conceived disjointedly, but the poor need integrated programmes to enable them to escape from the clutches of the vicious circle of poverty. The biggest hurdle for “Housing for All by 2022” is the availability of serviced land for affordable housing to the poor at suitable locations in large cities. The solutions to the above-mentioned problems call for a multi-pronged strategy including reforms in the current system of land use zoning and urban planning.

### Smart Cities Mission

The Government of India launched “The Smart Cities Mission” in 2015, intending to promote economic growth and improve service delivery to urban residents through the development of ‘smart’ cities, selected based on a national competition. The goal of the Mission is to achieve cities with core infrastructure facilities and a decent quality of life and undertake sustainable and inclusive development in these cities with the help of “Smart” solutions. In this regard, four models are suggested in the Mission document: (i) City improvement (retrofitting); (ii) City renewal (redevelopment); (iii) City extension (greenfield development) and (iv) Pan-city initiative (Mishra and Mohanty, 2017).

The Government of India has committed significant financial

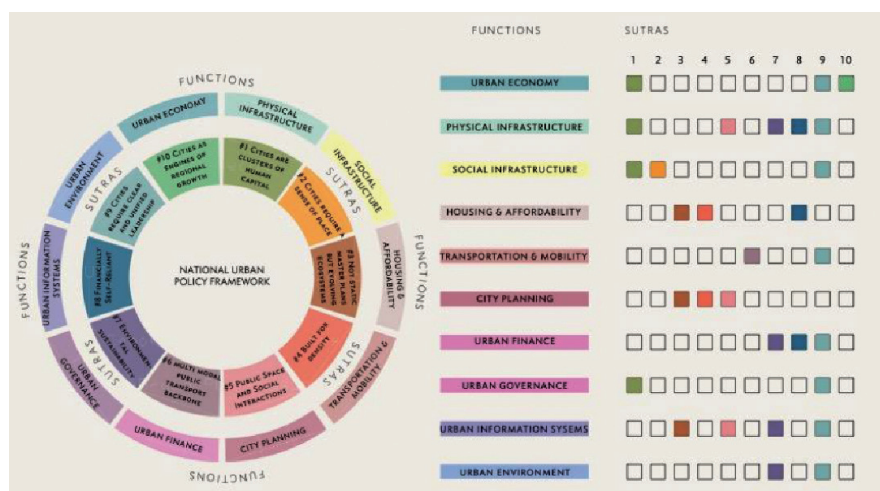
support under the Smart Cities Mission. It has promised to invest a total of Rs. 48,000 crores in 100 smart cities for five years with each smart city getting Rs. 100 crores annually for five years; states/urban local bodies will match resources amounting to Rs. 48,000 crores as per the approved 50:50 funding pattern. These funds are to act as ‘catalyst’ to leverage funds from other sources: internal and external. Smart cities are expected to have innovative, technologically efficient, creative, digital, e-governed and knowledge-powered service delivery systems. They would make housing more inclusive, promote mix-land use and transit-oriented development (TOD) to assist the poor. The Mission aimed to work on improving urban governance, providing equitable access to service delivery, and efficient physical and social infrastructure. The main belief of the mission is that

technology helps cut out the leakages and facilitate efficient provision.

## NATIONAL URBAN POLICY

The Ministry of Housing & Urban Affairs, Government of India has come out with a National Urban Policy Framework (NUPF)-2018 which outlines an integrated and coherent approach towards the future of urban planning in India. The NUPF is structured along two lines. Firstly, at the NUPF’s core lie ten sutras or philosophical principles, which include: (i) Cities are Clusters of Human Capital; (ii) Cities require a ‘Sense of Place’ (i.e. Indianness); (iii) Not static Master Plans but evolving Ecosystems; (iv) Build for Density; (v) Public Spaces that encourage Social Interaction; (vi) Multi-modal Public Transport Backbone; (vii) Environmental Sustainability; (viii) Financially

Figure-1: National Urban Policy Framework



Source: Ministry of Housing & Urban Affairs, GoI, 2018

Self-Reliant; (ix) Cities require Clear, Unified Leadership; and (x) Cities as Engines of Regional Growth. Secondly, the ten sutras are applied to ten functional areas or pillars of urban space and management as demonstrated in Figure 1. These ten pillars are: Urban Economy; Physical Infrastructure; Social Infrastructure; Housing and Affordability; Transportation and Mobility; Urban Planning and Design; Urban Finance; Urban Governance; Urbanization and Information System; and Environmental Sustainability. Within each functional area, the status quo and its challenges are analyzed, key priorities are formulated, and specific possible actions points suggested.

The vision underpinning NUPF 2018 is to see cities as complex and changing agglomerations of people who are constantly interacting with each other, with socio-economic institutions and with the built environment. The NUPF recognizes that the urban evolution takes place slowly but, once embedded, its impact can remain in place for decades or even centuries. Therefore, this Policy framework would go a long way for sustainable urbanisation in the country.

#### **Draft National Urban Rental Housing Policy (NURHP), 2015**

The Ministry of Housing & Urban Poverty Alleviation (MoHUPA), Government of India has drafted a National Urban Rental Housing

Policy, 2015 with a vision to create a vibrant, sustainable and inclusive rental housing market in India. The NRHP, 2015 aims to encourage rental housing to various segments of incomes and suiting their needs such as Social Rental Housing; Need-based Rental Housing; and Market-Driven Rental Housing. It also envisages addressing other issues related to rental housing such as access to finance/incentives, administrative, legal and regulatory issues. The Policy seeks to promote various types of public-private partnerships to promote rental housing in the country. The NURHP, 2015 will address both the demand and supply side issues of rental housing to spur the growth of rental housing. Formulation of the draft National Urban Rental Housing policy is very timely and indicative of the recognition of the need for rental housing as also the realization of the inadequacy of existing policy framework to respond to this need.

#### **SOME SUGGESTIONS: INCLUSIONARY ZONING AND INCLUSIONARY HOUSING**

The following are some key strategies suggested to address the affordable housing problem in India, taking into account international initiatives and approaches:

#### **Multi-Pronged Approach**

Both demand and supply-side interventions need to be combined. Supply-side interventions, with a view that government-provided public housing would serve the housing needs of people, are not adequate. Experience suggests that demand-side interventions also are required. The United States provides a good example of having a good mix of both supply and demand-side interventions. The on-demand side, they have Housing Vouchers, which are primary methods of subsidized housing delivery in the United States. Through the voucher system, direct-to-landlord payments assist eligible households in covering the gap between market rents and incomes. Low-income households put 30 percent of their income as a rental. On the supply side USA practices inclusive zoning (IZ) and inclusionary housing (IH) systems where the government provides fiscal incentives to developers developing large scale real estates by way of density bonus, a tax credit against expenses made on rental housing, etc. to create affordable housing through the market (Calavita and Mallach, 2010). Such instruments are required to be tailored to the local context to be successful. Since private investors do not come forward for social housing or rental housing, the state has to play a

key role and all schemes should be converged to achieve desired results.

### Multiple Housing Options

There is a need for simultaneously pursuing a mix of rental and ownership housing. People differ with their income, requirements and preferences. A housing survey reveals that customers preferred safety, security, street lighting first and social infrastructure like schools, hospitals are the next priority and then comes the accessibility to places like metro connectivity, buses and transportation. Other aspects were last in priority while selecting properties for renting. Given the experience with ownership housing under JNNURM, rental housing needs to get a push as it can be the most appropriate strategy to meet housing needs of many, especially migrants and a young population who tend to be mobile. But location and services will also need to be taken into account.

### Market Segmentation

The housing market is heterogeneous. Different segments have different incomes and needs. The lower the income of the beneficiary, the greater the role of the government in housing as the lesser will be the incentive for the private developer to enter into the housing market segment. For example, the demand for rental

housing is more in the range of Rs. 7,000 to Rs. 8,000 per month but the market services cater only in high-end rental segments. Developers require incentives to cater to rental housing for low-income segments. But the higher income segments among the LIG categories could be catered to by the market with policy interventions.

### Public-Private Partnerships

Housing policy needs to focus on all income segments/strata of the society and not only the poor. Grant and subsidy do not always work and there is a need to look at the market. The vision of providing housing to all, whether ownership or rental housing, calls for an increase in investment for housing, including providing an enabling environment for the private sector to participate in providing affordable housing to the weaker sections and low-income groups of the society. The problem is so huge that the government alone will not be able to make a dent on it without a partnership with the private sector.

### Promoting Rental Housing

In view of the current urban housing shortage, it is essential that housing ownership be supplemented by rental housing and a good tenure mix is vital for a healthy and inclusive development of the housing market in India. From a tenant standpoint, a rental house

offers low entry and exit costs, greater flexibility that facilitates mobility, better options in providing more conveniently located place of dwelling and better value for money that make it a preferred option over Home Ownership. In a position of acute shortage, rental housing provides a staging post to the tenant and enables a steady source of income, which converts urban land into an investment, to the owner.

### Design of Incentives to Stakeholders

The private sector may require incentives like tax rebates, fast clearances, and density bonus, etc. to cater to the needs of low-income housing. Depending upon who the stakeholders are, the incentives have to be defined. For example, the private sector can be roped in to supply affordable housing to upper segments of the low-income groups. It can be incentivised for other housing groups with appropriate incentives. Affordable housing to the poorest of the poor segments should have a separate platform, delinked it from private developers. Public housing including beneficiary led housing and rental subsidy schemes as in other countries may be considered. The overall business environment of the real estate sector needs to be improved. For example, fast track building plan approval process can lead to quicker and



cheaper delivery of housing.

While several innovative initiatives have been embarked upon by the Central and State Governments in India to facilitate the provision of land and affordable housing to EWS and LIG segments, they have not been able to make an appreciable impact on the supply of affordable housing.

India has generated some very successful models of inclusionary zoning like Gujarat Town Planning Scheme (TPS) with landowners/farmers as partners in urban development, following the models followed in South Korea, Taiwan and Japan, with no cost to government and avoidance of cumbersome land acquisition. But the need is to implement the models according to geography, culture, economic context of different regions. Like no two regions are the same, no two inclusionary zoning or housing policies can be the same. Each State needs to have a suitable legal framework as under Gujarat TPS with the process being made simpler and less time-consuming. Inclusionary zoning in India could be promoted in three ways. The first is to provide for land reservation for socially and economically weaker sections as in Gujarat Town Planning Scheme. The second could be to impose a modest IZ/IH requirement within the existing zoning framework, where the

developer bears the cost of subsidizing to the extent he/she has compensated in the form of cost offsets and incentives such as density bonus or higher floor area ratio (FAR). The third way could be to link IZ/IH with significant upzoning of either particular areas or larger areas to gain from the principle of land value recapture. The Sardar Patel Ring Road in Ahmedabad provides an example – with a reservation of 1 km area adjacent to the ring road as affordable housing zone with incentive FAR. The developer gets two benefits – access and incentive FAR.

The adoption of IZ/IH on a large scale in India would require a larger policy shift in which developers will have to shoulder a part of the wider social costs of development. Key principles are: polluters pay and growth pays for impacts, including those on affordable housing. Planning and local authorities also need to contribute by removing the hurdles that block developers from producing a “fair share” of affordable housing. Affordable housing problems in metropolitan cities like Mumbai have to be solved by the developers of Mumbai who gain from unearned increments and agglomeration rents rather than by Government, as metropolitan cities can be self-dependent due to their strong agglomeration economies and rising land

values. They shouldn't depend on Government subsidy. In smaller cities, the Government can intervene and bear the cost of providing houses to EWS/LIG at lower than the market rate. For houses or apartments beyond a particular size, planning authorities may prescribe mandatory one or two rooms for service personnel.

## CONCLUSION

The problem of affordable housing in India is so huge that both markets and governments need to work together to achieve the social objectives of inclusion. While governments may focus on the poorest of the poor segments, inclusionary zoning (IZ) and inclusionary housing (IH) methods can be useful to solve a part of the problem. The utilization of resources of non-profit affordable housing groups dedicated to defending the rights of the poor can help in mobilizing public opinion towards affordable housing and solving the funding and maintenance problems of such housing. India could perhaps consider a Social Housing Act as in South Africa or establish a Regulatory Commission on Social Housing taking inspiration from the Mount Laurel decisions in the United States. An approach based on “right to the city” as in Brazil and a strategy to create as much affordable housing as possible through the market place may

be combined.

However, it is to be remembered that IZ or IH is not a “magic bullet” that will end all problems of affordable housing. Research suggests that housing delivery through the planning system is not a panacea and should not be solely relied upon to secure the required quantities of affordable and social dwellings. Measures like inclusionary zoning, while important, are generally most beneficial for those at the higher end of the affordability continuum. They provide little scope for delivering housing for people at the lowest rung with ongoing, high and complex needs. India needs to follow the global practice of IZ and IH and its own Town Planning Scheme which is based on good economics. The landowners/developers must be adequately compensated. This requires reforms in the planning and urban management systems. Laws and procedures relating to town planning, urban development and municipalities, including development control rules and regulations need to be amended and suitable IZ/IH programmes are designed taking into account local market conditions. Inspiration can be taken from State Governments that are working for entitlement of property rights and security of tenure to urban poor through innovations, e.g. Patta Act in Madhya Pradesh and Land

Regularisation Scheme in Telangana State. In summary, the following actions and reform agenda may be considered by Central, State and local governments in India to promote inclusionary practices in urban land and housing markets in India:

*Urban renewal:* This may be linked to up-zoning, re-densification and value-adding land-use activities. The 1/3rd – 1/3rd – 1/3rd rule articulated by the Supreme Court of India in the Mumbai textile mills case – 1/3rd for development, 1/3rd for public amenities like open spaces and 1/3rd for affordable housing or appropriate modifications in the formula to suit local conditions could be considered.

*Strategic Densification:* Growth nodes in cities may be provided with density bonus in the form of significantly higher FAR subject to commensurate investments in decongesting infrastructure and affordable housing components being included, possibly on a self-financing basis. The Transit-Oriented Development Policy of Delhi can be a good guide.

*Planned Urban Extension:* The Town Planning Scheme practised in Gujarat, which has found a rich application in the planning and development of some cities like Hyderabad and large cities of Maharashtra needs to propagate throughout the country. This requires a robust legal framework. The

Government of India may consider developing and circulating a Model Land Pooling Law to states. The Magarpatta city model of Pune Municipal Corporation represents an inclusionary partnership between the government and land-owners/farmers. It is a form of land pooling. But this model did not provide for land/housing for community service personnel. A model of land pooling through the private sector as in Magarpatta, but with inclusionary zoning/housing provision incorporated, could be a promising way to promote inclusive cities.

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# CRITERIA FOR EVALUATION OF INNOVATIVE CONSTRUCTION TECHNOLOGIES FOR AFFORDABLE HOUSING

**MS. RIDDHI GEDIYA  
DR. DEVANSHU PANDIT**

**Speed of construction is extremely important due to the huge housing requirement and time available to cater to it. New emerging and innovative construction technologies can be an effective alternative to conventional techniques in the pursuit of cost and time effectiveness as well as from sustainability point of view. Evaluation through qualitative and quantitative factors would be essential to select these construction technologies for an affordable housing project.**

*With urbanisation, housing shortage in India is growing for past few decades. Under “Housing for All by 2022”, the government has announced to build 50 million houses by 2022. This goal cannot be achieved without using fast-track innovative technologies for the construction of houses. Selection of appropriate construction technology is a critical factor for the development of the project along with achievement of the desired results. Evaluation of innovative technologies through qualitative and quantitative performance criteria becomes essential. The research was taken up with a focus on identification and understanding of evaluation criteria for selection of housing technologies. This study emphasizes on the use of an identified criteria to select the better construction technology which would help in better project delivery of upcoming affordable housing projects in the Indian construction scenario.*

## INTRODUCTION

Housing is a basic need of the people after food and clothing. Also, housing facility impacts access to infrastructure, employment, health, education, poverty levels, maternal and

child mortality, and many other wellbeing indicators (Gopalan & Venkataraman, 2015). Housing is the largest component of the financial as well as the construction sector (High level task force, 2008). Various financial experts and institution put the contribution of real estate to GDP by year 2025 at 13%, but this is a pre-COVID figure. Urbanisation and housing can affect economic growth and the living environment of the country (McKinsey Global Institute, 2010).

Urban congestion creates pressure on basic amenities like water, sanitation and housing shortage in cities. According to MoHUA & NBO, (2012), the housing shortages in India was 18.78 million homes in the urban areas at the beginning of 2012 and in 2018 it was estimated to be 11 million. It is expected to again reach 19 million by 2022 (CII, 2019). The housing need in India is estimated to be about 38 million by 2030. Government is finding out ways and means to provide affordable housing for socio-economic growth of the country.

**Housing Policy & Programme in India**

*Keywords: Housing affordability, Construction technology, Technology selection, Evaluation criteria*

*Ms. Riddhi Gediya (riddhigediya@gmail.com) is Teaching Associate, CEPT University. Dr. Devanshu Pandit (devanshu@cept.ac.in) is the Adjunct Professor, Faculty of Technology, CEPT University, Ahmedabad.*

Affordable housing has always taken a centre stage in the national agenda of India. “Housing for all by 2022” – ‘Pradhan Mantri Awas Yojana’ is the latest housing programme which has announced to build 10 million houses by 2022 in urban areas. According to members of Building Materials & Technology Promotion Council (BMTPC), Conventional construction approach is slow-paced, usage of low levels of mechanization and also has issues related to quality and maintenance (BMTPC, 2018). Report on Trend and Progress of Housing in India - 2018, promotes use of alternate building materials and appropriate technology to overcome issues related to construction in affordable housing development. Construction of 10 million houses by 2022, needs new construction technologies to improve speed and quality of construction. Realising this, Government has started to look for an opportunity to use new and alternative construction technologies from across the world. Also, The Prime Minister has declared the year, April-2019 to March, 2020 as “Construction Technology Year”.

### **Technology Sub-Mission under Pradhan Mantri Awas Yojana**

To adopt new, innovative and green technologies along with alternative building materials for affordable housing construction,

Government of India has started a Technology Sub-mission under the Pradhan Mantri Awas Yojana Mission. BMTPC under the Ministry of Housing and Urban Affairs (MoHUA) is handling technical cell of the mission with an aim to facilitate an ecosystem to for usage of innovative technologies and materials for cost effective, speedier and good quality construction. BMTPC has listed twenty-four innovative construction technologies such as Precast construction system, Steel structural systems and Innovative formwork systems which are certified by them (BMTPC, 2018).

Construction Technology is responsible for influencing the outcome of a project, due to which, the selection of construction technology becomes important for project success. To select any construction technology for a building project, systematic and effective assessment of technologies is of utmost importance. Evaluation through different parameters is one of the most critical steps in the acceptance of innovative, sustainable, eco-friendly and disaster-resilient technologies and building materials, for low-cost, speedier and quality construction of houses. Some researchers have developed technology selection criteria considering aspects such as project management, planning, coordination, procurement, sustainability or performance but

they fail to make comprehensive evaluation of innovative construction technology for affordable housing. Thus, there is a need to develop a standard framework for the evaluation of the innovative construction technologies. This paper aims to address this knowledge gap by developing decision criteria for evaluation of technology, which will enable the holistic and value-based assessment of innovative construction technologies.

In view of the government focus on housing, the objective of this research is to identify qualitative and quantitative performance criteria for the evaluation of innovative construction technology for affordable housing. The research identifies the issues and attributes of the innovative construction technologies for affordable housing that positively or negatively influences the performance of the technologies.

## **RESEARCH METHODOLOGY**

Qualitative research methodology was adopted for this research. Primarily, evaluation criteria for innovative construction technologies are identified and categorized based on the literature review. The criteria are compiled based on the existing literature relating to criteria, for system selection, evaluation or project performance in a housing project.

This initial review enables the identification of conceptual decision criteria. The interviews were conducted to identify the criteria by expert opinion and validated the criteria identified from the literature review.

## LITERATURE REVIEW

Selection of construction technology is not a simple decision-making problem based on a single criterion, various factors need to be looked upon while selecting any technology. Also, the assessment of technology should be carried out by identification of current practices, process problems, the information involved, and the knowledge required (Ferrada & Serpell, 2014). It is difficult to quantify the intangible benefits

of advanced construction technologies and the risks involved in implementing these emerging technologies. It would be useful to explore a decision support tool which integrates uncertainty along with various attribute levels. (Chen, Okudan, & Riley, 2010). Pan, Dainty, & Gibb, (2012) reported that a systematic approach be promoted for value-based comparison between building systems, rather than evaluation of building components which often ends up as a cost-comparison exercise.

Many researchers have contributed in selection or evaluation of construction technology. According to Pan, Dainty, & Gibb, (2012), cost, time, quality, health and

safety, sustainability, process, procurement, and regulatory and statutory acceptance are the eight major objectives to select a construction method. The selection of construction methodology should contain factors relating to the productivity and efficiency of the project. Apart from the initial implementation cost of the system, other factors associated with the financial feasibility of a technology, like economies of scale and maintenance cost should also be considered. (V. N. Nanyam, Basu, Sawhney, & Prasad, 2015). Pan, Dainty, & Gibb, (2012) suggest that the decision for the selection of construction technology is largely dependent on time and cost, as it is a call of the

Table 1: List of Criteria for Evaluation of Innovative Construction Technology

	Pan, Dainty & Gibb (2012)	Azhar, Lukkad & Ahmad (2013)	Blismas, Pasquire & Gibb (2006)	Ferrada & Serpell (2014)	V. N. Nanyam, Basu, Sawhney & Prasad (2015)	Elnaas, Gidado, & Ashton (2014)	Kamali & Hewage (2016)	Idrus, Sodangi & Husin (2011)	Chen, Okudan & Riley (2010)
Cost/financial performance	×	×	×	×	×	×	×	×	×
Time	×		×	×	×	×	×	×	×
Quality	×		×	×	×	×	×	×	×
Functional requirements		×			×		×	×	
Constructability	×	×	×	×	×		×	×	×
Health and Safety	×			×	×	×	×	×	×
Maintenance				×	×				
Sustainability	×	×		×	×	×	×		×
Project risk factors		×		×					



Government to build homes more quickly and efficiently. V. P. S. N. Nanyam, Sawhney, & Gupta, (2017) made a framework with a set of standard and desired attributes for the adoption of offsite technology in affordable housing. They emphasized on preferred attributes such as functional requirement, constructability, economic viability, maintenance, sustainability and finish quality. Decision-making criteria used for assessing alternatives for sustainability are responsible for a significant portion of environmental and social impacts. (Dale, Nobe, Clevenger, & Cross, 2013).

V. P. S. N. Nanyam, Sawhney, & Gupta, (2017) stated that the emerging technologies should be evaluated for eco-friendliness and sustainability aspects, which refer the use of less energy, use of recycled material, cause less pollution and less waste. Factors of benefit should also be incorporated with involved risk such as initial investment, operating costs, safety, system reliability, quality and schedule performance and competitive leading edge in one framework. Azhar, Lukkad, & Ahmad, (2013) adopted holistic approach to identify all critical factors and constraints considering project risks that should be taken into consideration during the decision-making process. Regulatory and statutory acceptance is essential for

selection of construction technologies, as it is concerned with financial market and insurance industry which ultimately has a effect on the Project (Pan, Dainty, & Gibb, 2012).

A list of 74 criteria influencing evaluation of innovative construction technology for affordable housing is prepared from literature review and categorized into nine categories and the same is summarized in the Table 1.

## **IDENTIFICATION OF FACTORS FOR EVALUATION OF CONSTRUCTION TECHNOLOGY**

The selected route to identify evaluation criteria is semi-structured interviews. Some open-ended questions were formulated before conducting interviews. Only people involved with the building construction industry having a minimum of five years of experience were considered. Organizational details of respondents were asked to categorize them in the owner, contractors, or consultants' group. After introducing the aim of research and the importance of his/her participation, questions regarding technology evaluation were asked. The questions were structured to gather their opinion about: (1) Implementation of new and innovative construction

technology for affordable housing/building projects (2) The challenges faced while adopting of a new technology (3) The factors considered at the time of adopting a construction technology. The categories identified from literature review were used as a probes during interviews to identify criteria.

Twelve numbers of personal interviews were conducted with well-known professional clients, contractors, and consultants' organizations. Most of the respondents were having experience of 10-30 years in the construction industry, which shows that the respondents were highly experienced in dealing with performance evaluation of construction technology.

All the Interviews were recorded. Later, transcripts of interviews conducted were generated and analyzed using a content analysis approach. Criteria were developed from transcripts and categorized into 8 categories, and this list of criteria and sub-criteria was derived as a result of content analysis.

Criteria identified from content analysis were compared with the criteria identified by the literature review and the final list of criteria and sub-criteria has been made. 71 criteria from 8 categories were identified as evaluation criteria for innovative construction technology for affordable housing, and they were:

1. Economic viability
2. Time
3. Performance
4. Constructability
5. Functionality
6. Procurement
7. Sustainability
8. Risk factors

The criteria falling under each category and its inferences noted from the literature review and interviews are discussed here:

### **Economic viability**

Economic viability is the economic benefits of the system versus costs. A life cycle costing approach needs to be adopted. This can be evaluated by purchase cost, maintenance cost, and cost of resources - manpower, machinery, and materials. Purchase cost of the technology considering minimum number of sets required is considered as an initial investment. For example, in a four storey-building project, we cannot recover even purchase cost of tunnel formwork. So, we have to look into the repetitions requires to recover the purchase cost of the technology. The initial cost of a technology may be high, but it gives 100 repetitions. In such cases, the possibility of use in another project also becomes a deciding factor.

### **Time**

Owner and contractor both are concerned with the project

construction schedule. The speed of construction is not only the RCC slab cycle but finishes time also plays a role to complete project on-time. Some technologies eliminate plastering and masonry requirements. So, these additional activities create a great impact on saving time. However, new and innovative technologies have a higher lead time. Lead time of engineered and monolithic construction technologies are approx. 1.5 to 3 months. But their execution time cycle is substantially reduced compared to conventional techniques. Time should be evaluated by lead time, slab cycle, and finishing time.

Technologies such as Tunnel formwork and Aluminium formwork system have a higher initial cost, but it can shorten the construction schedule and ultimately reduce overhead costs. Likewise, some technologies are less expensive, but it takes more time to complete the work. So, time and cost are both important criteria at the time of evaluation, depending on the project and its contract clause as contractor perspective.

### **Performance**

Often quality of concrete formwork is judged by its surface finish and joints. However, quality performance of technology should be evaluated through criteria such as structural strength and stability, service life, thermal

comfort, and water tightness. Fire resistance and acoustic performance should also be included in these criteria.

### **Functionality**

Overall compatibility of the system with the generally accepted functional requirements is defined as the functionality of the system. End-user friendliness, system flexibility, height limitation and suitability with different site topography and climatic conditions can be considered under functional requirements of the system. It is difficult to modify the custom-made formwork, so they cannot use this on another project unless the design is identical or if the technology is flexible enough to accommodate the design change. So, the possibility to use a particular technology on other project and their suitability for design modification and design complexity is important factor to be considered while selecting construction technology. In India, generally, LIG/MIG category people are not known to maintain buildings well, so utilities have to be provided in manner which doesn't damage affect structural stability of the building. So, compatibility with MEP services should also be evaluated. Also, there should be ease in maintenance and the materials used should be available in the local market. Builders should be ready to provide some modification, if the

buyer or end user wants. So, the structure made using the selected technology should be end-user friendly. Most of the innovative construction technologies are manufactured out of India. So, the compliance of technology with statutory provisions is also an important criterion. Some technologies have height limitation for construction due to stability issue and some technologies require working platform at a certain height. It should also be considered at the time of evaluation. Safety over the life of the building and risk of fatal accidents at the time of construction are also important factors.

### **Constructability**

The ease with which overall requirements of a building design is met with the chosen technology is referred to as Constructability. Ease of construction also depends on the weight of material and numbers of components. Lightweight material can be transferred by one or two labourers where heavy materials requires machinery which affects cost as well as time. Deck panel system has only three components and a cup-lock system has seven numbers of elements. So, cup-lock requires more time in transportation and erection and also requires more supervision. So, the ease of construction can be evaluated by foundation design, ease of fabrication, numbers

of assembly, assembly joints, supervision required, and maintenance. Requirement of efficient resources is also a factor to be considered for constructability, which includes effort required to get material from local market and level of mechanization required. Some interviewees suggested that adaptability is an evaluation criterion. For some innovative technologies, labourers have to be trained by the manufacturers. So, the efforts and time required to develop the skill in labourers are also important criteria. Space requirements to material handling and process heights are also decision driven factors as some projects have space constraints and do not allow some technologies to be adopted.

### **Procurement**

For the procurement, market availability and vendor competency should be checked. The decision to select technology is taken looking after the possibility of the use of technology in a future project.

### **Sustainability**

Sustainability describes eco-friendliness of the system. Major change between engineered technology and conventional techniques are reduction in waste generation and reuse of materials. Modular formwork generates less waste compared to conventional timber formwork as it was pre-designed and after the usage, we can

refurbish it. Some sustainable construction technology reduces the air and noise pollutants at the construction job site. Sustainability can be measured with parameters such as use of non-renewable resources in production, use of waste products, recyclability of material, waste generation and utilization of waste generated, and emission of pollutants/hazardous materials.

### **Risk factors**

Innovative construction technologies required early-stage involvement of planning, designing and engineering. If the organization is adopting a new technology, then there is a risk of working with no experience and overall compatibility of staff and management with changing to a new system. Time - cost certainty and acceptance of the system by stakeholders are also the risk factors. Fast track construction also has a risk of schedule reduction and increased liability and responsibility. As, for some technologies imported from abroad, there is a risk of exchange rate fluctuations also. So, there are time, cost, and management-related risks that we should evaluate.

## **CONCLUSION**

Speed of construction is extremely important due to the huge housing requirement and time available to cater to it. New emerging and innovative



construction technologies can be an effective alternative to conventional techniques in the pursuit of cost and time effectiveness as well as from sustainability point of view. Evaluation through qualitative and quantitative factors would be essential to select these construction technologies for an affordable housing project. Based on interviews conducted with industry experts, this article has established decision-making criteria for the evaluation of the innovative construction technology for affordable housing. The present research has identified eight key evaluation criteria: Economic viability, Time, Performance, Constructability, Functionality, Procurement, Sustainability, and Risk factors. Identified criteria and sub-criteria can be further assigned weightage to help decision-makers in the selection of an appropriate innovative construction technology for the affordable housing project. Also, the merits and demerits of technology in each individual category of criteria can be observed through the project evaluation. The identified criteria can be used to evaluate other

construction technologies used for the building projects as well. The information presented here can form the basis for developing decision-making model, which can help decision makers to rank the order of evaluation criteria for the innovative construction technology. The next phase of this research study will be focused on this effort.

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# COVID 19: NEED FOR INCLUSIVE AND HEALTHY HOUSING

**MR. A.K. JAIN**

**The idea of healthy and inclusive housing seeks to address the twin issues of Covid-19 pandemic and inclusive housing for the poor migrants and other vulnerable sections of the society. It is closely linked with the emerging trend of work from home and creation of jobs and micro-businesses, health facilities, and optimising the use of land.**

*Covid-19 pandemic has caused massive disruption to the economy and the livelihoods. This has underlined the need for healthy and inclusive housing which serves the poor, migrants and other vulnerable sections of the society. It should also facilitate work from home. The Pradhan Mantri Awas Yojana seeks to build 11.2 million housing units and to make the cities slum free by 15th August 2022. So far, the construction of about 10 million dwelling units has been sanctioned, which makes it as one of the largest housing programmes ever undertaken. In view of Covid 19 and to cater to the needs of migrant labour, the Mission has recently incorporated the schemes of rental, inclusive and healthy housing.*

## INTRODUCTION

Covid-19 pandemic has caused massive disruption to the economy and the livelihoods. It has affected mostly those who work in the informal sector, such as domestic servants, labour, vendors, construction workers and others living in crowded, cramped and congested slums. Most of them live in slums which lack space, sun, air, clean water and sanitation. The Covid pandemic has exposed them to the health, hygiene and survival vulnerabilities. It is estimated that the Covid 19 pandemic in

India has resulted in loss of 200 million jobs of daily wagers. There has been severe shortage of public transport, shelter, food for the migrant labour, who walked and cycled hundreds of kilometers.

According to 2011 census, 2613 cities have 13.9 million slum households with a population of 65.4 million. There are 487 million workers in India of which around 30% are migrants. A large proportion of these are poor, destitute, and homeless. They not necessarily need a permanent home nor may afford it, but rental accommodation can meet their immediate needs. An Expert Group set up by the Ministry of Urban Affairs and Employment estimated that about 33.2 million houses are susceptible to earthquakes, floods and heavy rains. As per National Sample Survey Office (NSSO) 76th round (2018) 80% rural houses and 62% urban houses in India have one room or less. 75% of rural households and 40% of urban households do not have access to tap water, 45% of rural and 9% of urban households are without washrooms/latrines. This means that norms of social distancing,

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*Mr. A.K. Jain (ak.jain6@gmail.com) is Ex-Commissioner(Planning), Delhi Development Authority, Delhi.*

self-isolation and regular hand washing are difficult to be observed by majority of households.

The worst affected by the epidemic are the slum dwellers, who do not have adequate space and services and live in overcrowded, dilapidated dwelling units and face eviction and shifting to far off locations from their workplace.

### **PRADHAN MANTRI AWAS YOJANA (2015-22)**

The Pradhan Mantri Awas Yojana seeks to build 11.2 million housing units and make Indian cities slum free by 15th August 2022. During 2014-20, the construction of about 10 million dwelling units has been sanctioned, which makes it as one of the largest housing programme ever undertaken. The Mission has incorporated several innovations. The Government has adopted the policy of in-situ rehabilitation of slums under the Pradhan Mantri Awas Yojana.

As many poor families cannot afford to pay the down payment, the MOHUA in 2020 has launched the Affordable Rental Housing Complexes (ARHCs) scheme under the PMAY. The scheme envisages converting unoccupied government funded housing into rental housing under public-private partnership. The industries and institutions are also being

encourage to develop rental housing on private lands for their employees with tax and incentive Floor Space Index (FSI). Aadhar cards and Smart cards of the migrants, and slum families can ensure that the benefits reach to the genuine persons.

The Government of India has formulated Draft National Urban Rental Housing Policy (NURHP, 2015) which suggests various policies, administrative and legal reforms, and financial incentives to promote rental housing, Bonus FSI, as done by MMRDA, can incentivize the development of rental housing. Rental Housing Vouchers can be given to migrant workers, homeless, destitute, aged, women, etc. Low Income Housing Tax Credit (LIHTC) can be given for rebate in income tax against investment in low income rental housing.

The Global Housing Technology Challenge- India (GHTC) launched in 2018 mainstreams construction technologies that are sustainable, green and disaster resilient, and save time and cost. Six cities have been identified to locate lighthouse projects that will serve as the laboratories for global technologies. These technologies are being disseminated for incubation and acceleration under the Affordable Sustainable Housing Acceleration (ASHA India). A comprehensive strategy has

been adopted to upscale the new and alternative technologies, for which a National Knowledge Network (NKN) has been put in place.

### **REDEFINING HOUSING**

For majority of the migrants, labourers and casual workers, a regular dwelling unit on ownership basis is unthinkable. Their immediate need pertains to a serviced shelter, tenement, or a rental dormitory. This necessitates reviewing the definition of shelter, which should include rental units, dormitories, hostels, lodge, transit camps and night shelters. Such types of shelter should provide earning and micro-jobs, small shops, social space, toilets, and utilities. Every housing and slum rehabilitation project should address the specific local issues and provide choices. All the slum settlements in a city need to be networked, planned and improved together.

**Location** is most important for the livelihoods of the informal sector workers who cannot afford to lose time and money in commuting. As a principle, the distance between work and living should be below 15 minutes by public transport, cycle or walk, that is 10 km, 3 km, and 1 km respectively. In view of recent work from home trend due to corona lockdown, it may be mandatory to provide



at least half of the built space for work-life integration and mixed land use. This will save the need to commute.

**Synchronize Shelter and Poverty Reduction:** A major priority area for promoting inclusive shelter and poverty reduction is to evolve a new planning framework. To establish closer links between shelter and poverty reduction, it is necessary to revise the concepts of planning, land use, land tenure and building regulations. Thus, housing can open up self-employment opportunities, while also making the residential areas more secure and comfortable. Fire and structural safety, however, should not be compromised, for which it should be mandatory for every building owner to procure a structural and fire safety certificate.

## OPTIMUM UTILISATION OF URBAN LAND

Attempts at densification of underutilized built-up lands in the cities have usually met with little success, largely due to adequate implementation. The policy of permitting release of land under polluting, sick mills in Delhi, Mumbai and Kolkata was intended to increase the housing supply. In Delhi the prime areas under industrial areas in Bara Hindu Road and Najafgarh Road have been used

for providing luxury housing. In Mumbai houses for the rich have been built in derelict industrial estates. It is also common to witness multi-storied and expensive housing under the policies of redevelopment and Transit Oriented Development (TOD). There is a need to rethink these policies so that they promote affordable housing (both rental and ownership), and discourage speculative 'property development'. Incentive FAR and the concept of Accommodation Reservation, density and mixed use can be effective tools in provision of social housing and community facilities without land acquisition. This requires a participatory approach where the owners come together and reorganize/amalgamate their individual properties so as to provide minimum roads, common greens, parking and common facilities. The amalgamation and reconstitution of the individual plots with extra FAR, density and mixed land use will facilitate a composite development and optimum use of urban land. A phased and evolutionary program should be developed for facilities and services, with decentralised systems of sewerage, water supply, power and waste recycling. The corona pandemic has given a new emphasis to 'work from home'. This underlines the need to review the land use control. A comprehensive planning and

housing paradigm should be developed for work from home phenomenon.

## HEALTH AND HOUSING

According to UN Habitat and World Health Organisation (2020), *if the purpose of planning is not for human and planetary health, then what it is for?* The concern for human health and well-being should be the focus of housing and the built environment. The factors for healthy housing include the following:

- i). Mixed land use, work from home (WFH) and density pattern.
- ii). Health facilities and standards.
- iii). Provision of open space, public spaces and greenery.
- iv). Development of sports facilities and play fields.
- v). Physical infrastructure, water supply, electricity, sewerage, solid waste management and drainage.
- vi). Conservation of natural features- heritage, river and water bodies.
- vii). Development controls and building byelaws.
- viii). Regularisation and rehabilitation of unauthorised colonies and slums.
- ix). Traffic and Transportation.
- x). Air and Water Pollution Control.

The health of a city depends upon integrity of land uses and safeguarding adequate open spaces and protect living and working areas from hazardous and polluting activities, such as, industry, heavy traffic, wholesale trade, etc. The land use plan and density pattern should strike a balance between the aspects of crowding, health and traffic generation, besides conserving the greenery and urban ecology.

According to the recommendations of the World Health Organization (WHO), the hospital beds: population ratio to be achieved is 5 per thousand persons, whereas in 2011 the bed- persons ratio in Delhi was 2.55. There has been very little increase in the number of beds per thousand persons over the last 20 years. It is estimated that the total number of hospital beds required in Delhi in the year 2021 will be about 115,000. In order to meet the requirements of health related infrastructure, it is necessary to review and enhance the Floor Area Ratio (FAR) for health facilities and retrofitting/ rebuilding of the old hospitals in optimising the capacities of hospitals, health centres, nursing homes, dispensaries, poly clinics, path labs, health centres for Senior Citizens and Mentally Challenged, maternity homes, paediatric centres, etc.

Healthy housing supports a state of complete physical, mental

and social well-being, relying on the immediate housing environment, and the extent to which this provides access to services, green space, and public transport options, as well as protection from pollution.

For housing to be adequate, the following seven criteria must be met: security of tenure, availability of services, materials, facilities and infrastructure, affordability, habitability, accessibility, location and cultural adequacy. The housing should cater specially to women, children and the aged ((UN Habitat & WHO, 2020).

The healthy, environmentally responsible and resource-efficient housing integrates the following:

- Sustainable and healthy site planning, location, density, mobility, living-work relationship and building regulations.
- Building envelope and built space, social distancing, privacy and safety.
- Energy conservation, renewable energy and net-zero energy buildings.
- Indoor quality, ventilation, sun and thermal comfort.
- Sustainable building resources with high recycled and renewable content and low VOCs emissions and odour.
- Reduced building footprint, depletion of natural resources

and biodiversity.

- Building services and HVAC (heating, ventilation and air conditioning), lighting, water sanitation, etc.

Net zero energy building, black hole technology, big data analytics, SCADA, ERP solutions, Integrated Digital Control System and Satellite Surveillance can be explored. According to the Covid 19 Guidelines for Air-conditioning and Ventilation, issued by the CPWD (22nd April 2020), low temperatures are optimal for air-borne influenza virus survival, which decreases progressively at higher temperature. As such, room temperature should be set at 24 to 30 C, humidity of 40% to 70% with fresh air flow to inactivate aerosol droplet virus.

The housing development should adopt and conform to GRI mapping and interaction among the SDGs, AA 1000 and AS 2008 principles, Assurance Standards, SOPs, Disclosure and Reporting Procedures, and Supply Chain Management.

Healthy and sustainable development involves reducing emissions by compact and dense development. According to the IPCC (Climate Change Report, 2014, WG III) the critical aspects of spatial planning for clean air comprise:

- Density, FAR optimisation;
- Land use (mix of activities, population);

- Connectivity, walkability and traffic density; and
- Accessibility for all by public transit, cycle, walk.

## INCLUSIVE HOUSING

A large proportion of poor population in urban areas lives in unplanned slums and illegal colonies are homeless and destitutes, including senior citizens, working women, widows, students, and young professionals. 'Housing for All' means inclusion of all vulnerable segments.

**Illegal Colonies:** For grant of in-situ ownership rights in the illegal colonies, the MOHUA vide its notification dated 29th October 2019 has enacted the NCT of Delhi (Recognition of Property Rights of Residents in Unauthorised Colonies) Regulations, 2019. The regularisation and upgradation of the unplanned settlements aim at improving the quality of life of the residents by participatory planning, better facilities, safe structures, accessible roads and services.

The Master Plan of Delhi (MPD 2021) provides a framework for redevelopment of unplanned areas by allowing the amalgamation of the plots to a minimum combined area of 1670 sqm with an FAR up to 400 and a minimum street width of 7.5 m. Additional floor area ratio (FAR) would mobilise the owners/tenants to form a small

cooperative for a composite redevelopment, along with widening of roads, parking spaces and the structures conforming to fire and structural safety standards.

By optimising the use of the available land and the amalgamation of fragmented, small plots, it would be possible to create wider streets, open spaces, better social nodes and educational facilities, together with safe structures.

**Homeless:** The Census of India defines homeless people as those not living in a "census house", i.e. a structure with a roof. The residents of 'Jhuggi and Jhompri' clusters are entitled to dwelling or a plot in a regularised area.

**Senior Citizens:** As per the Census, the population of senior citizens stood as 7.5 per cent of the total population. It is likely to increase to 12.4 percent in 2026, as per the report of the Technical Group constituted by the National Commission on Population. According to UN projections, the overall population will increase by 326 percent by the year 2050, making India an ultra-age society.

The Maintenance and Welfare of Parents and Senior Citizens Act, 2007 seeks to ensure that the elderly are not deprived of basic amenities like food, healthcare and housing. This mandates dedicated housing programme for senior citizens.

**Disabled:** it is estimated that in India about 27 million, that is about 2% of the population, are disabled, who are by and large poor and lack appropriate housing. The Person with Disability (Equal Opportunities, Protection of Rights and Full Participation) Act, 1996 mandates non-discrimination, equal opportunities that protect their rights to full participation. This requires that spaces are designed to suit their needs for barrier free universal access.

**Working Women and Widows:** With rising education and employment large number of women are working, who face the chronic shortage of safe and affordable housing. Many of them are unmarried/single and widows. As per census 2011, there were 56 million widows (4.6% of population) in India, many of whom face the problem of housing.

**University Students:** During last decades, India had an enrolment of 30 million students in higher education. Many of them are migrants and are not provided with the hostel accommodation. As a result, they live in expensive paying guest accommodation or live in sub-let substandard rooms. They do not require the standard dwelling unit, but affordable, clean and quiet hostels with essential services.

**Professional Workers:** It is estimated that about one-third of the urban working population



(33 to 40%) comprises single, young professional workers. Most of them seek shelter in sublet room, barracks or garages except the few well to do who live in expensive rental accommodation, guest house, dormitories or a small hotel. They do not need to buy a house in view of transit nature of the job.

## SPACE SHARING MODELS

Emerging Space Sharing Models are plugging the demand supply gap for meeting housing and renting requirements. These disruptions impact the concept of housing which warrants a change and adoption of the new models, such as co-working, co-living, shared living, mixed use, flexible spaces, B&B accommodation, collective communities, etc. Student Housing, Virtual Business Platforms, digital platforms and start-ups can help in the space sharing models.

## BUILDING RESOURCES AND SUSTAINABLE CONSTRUCTION

The idea of circular construction is based on the continuity of raw materials, products and waste streams in a circular loop. It involves an energy centered approach towards design, materials and construction. Adoption of circular models

for the housing design and construction requires formulating guidelines, calculating resources, labour and material flows, their environmental footprint and impact and lifetime scenarios. The basic approach of circular construction is zero emissions and wastes by on-site recycling to save the environment. In the up-cycle scenarios, the materials are critically analysed to make sure that they do not cause any ecological damage.

Construction involves generation of construction and demolition wastes, which need to be disposed of and recycled as per the Construction and Demolition Waste Management Rules, 2016. Recycled products reduce the demand for new materials. Such materials include reused brick, steel, concrete, gypsum, sulphur, wood alternatives, reconstituted wood, straw, bamboo, wood waste pallets and panels for construction. There are several examples of successful use of C & D waste in new buildings, e.g. Editt Tower, Singapore and New Moti Bagh Government Housing Complex, New Delhi. As a thumb rule about one-fourth of building materials in a new construction should be recycled from C & D wastes.

For sustainable construction with smart materials, services and digital networks, Building Information Modeling (BIM) can be useful in integrating the

design, time-lines, drawings, service plans, specifications, components, fittings and fixtures. It enables is an integrated, collaborative process that works on a digital model for coordination at every stage of a project.

## SMART UTILITIES AND SERVICES

Smart utilities aim at high quality water supply, drainage, sewerage, streets and waste management. The ICT solutions, such as SCADA system, Black Hole technology and ERP Solutions enable enhanced efficiency. Smart utilities can give energy and water saving up to 30%, reduce carbon emissions and provide higher efficiency and better services. High-speed communication, data analytics and management can monitor the carbon-emission accounting and performance objectives.

## CONCLUSIONS

The idea of healthy and inclusive housing seeks to address the twin issues of Covid-19 pandemic and inclusive housing for the poor migrants and other vulnerable sections of the society. It is closely linked with the emerging trend of work from home and creation of jobs and micro-businesses, health facilities, and optimising the use of land. This needs a new paradigm of planning and housing strategies that enhance inclusive and healthy housing.

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Fig. 1: Redevelopment and dedensification of old, dilapidated housing Area

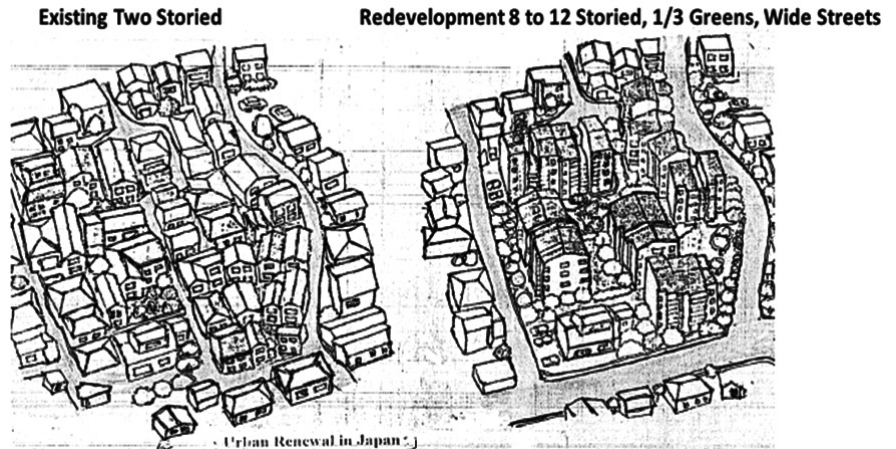
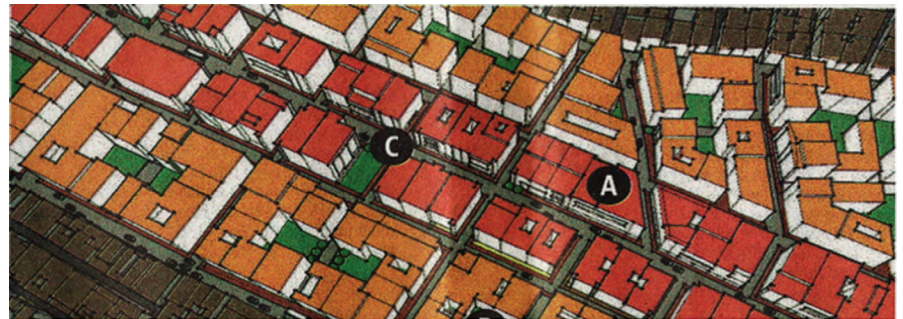
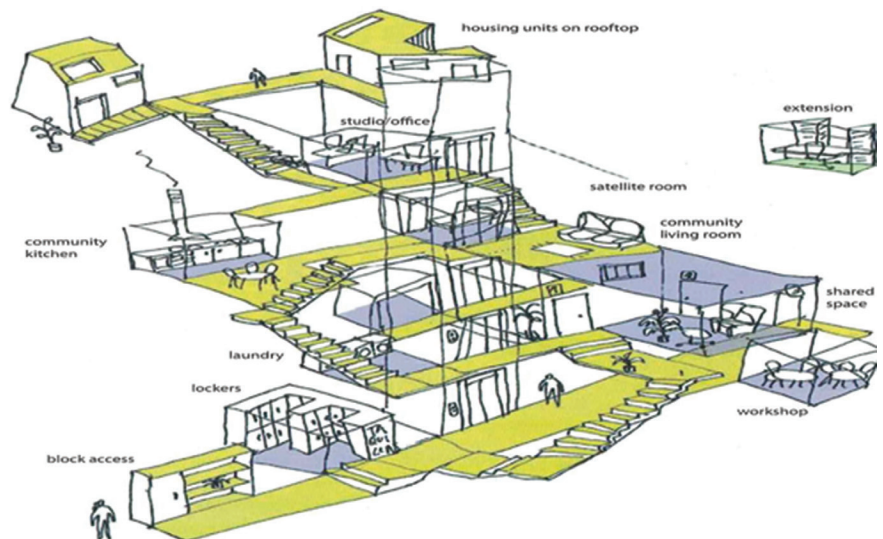


Fig. 2: Strategic Redevelopment by Plot Amalgamation, Dwelling Size Increased by 2 Times, 1/3 Site for Common Greens, Fragmented Open Space Unified, Street Widening and Retrofitting



Source: Habitat Tectonic Architecture and Urbanism

Fig. 3: Work from Home: Mixed land Use for Work-Life Integration



# ASSESSMENT AND MAPPING OF HOMELESSNESS

## –A Comparative Study between India and Bihar

MR. BAIKUNTH ROY

MS. VIDYA YADAV

**The study found that the highest share of homelessness is observed in the state of Uttar Pradesh, followed by Maharashtra, Rajasthan, Madhya Pradesh, and Andhra Pradesh. The primary prevention from homelessness could be affordable housing, social housing, creating employment opportunities and demolishing discrimination.**

*Key Words: Homelessness; livelihood; labour; destitution, DAY-NULM, Bihar*

Mr. Baikunth Roy (baikunthroy@gmail.com) is Assistant Professor, PG Department of Economics, College of Commerce, Arts and Science, Patliputra University, Patna. Ms. Vidya Yadav (vidyayadav1821@gmail.com) is Assistant Professor, Department of Geography, Sardar Patel Memorial College, Bihar Sharif, Nalanda, Patliputra University, Bihar.

Access to food, clothes and shelter are the fundamental human needs. While the government aims to ensure every citizen has a home by 2022, the number of families that live on the streets of urban India has grown. The findings of the present Study suggest that only about 11.86% urban homeless in India have access to a shelter house. The Study also compares and quantifies homelessness in India and Bihar. It found that the decadal growth among the homeless household of Bihar is much higher than the national average. Interestingly, the maximum increase among both homeless households and the population is in the rural areas of Bihar; however, the findings are opposite in the context of India. Further, the average household size of the homeless population has fallen. Also, gender composition shows that homelessness is more among men than women. The state-level analysis shows that the five states of India, namely, Uttar Pradesh, Maharashtra, Rajasthan, Madhya Pradesh, and Andhra Pradesh are home to more than half of the homeless population of the country. Further, the employment outcomes of homeless people are higher than that of the total population of the country, which reflects distress participation. Moreover, due to the lack of reliable numbers of the homeless and abdication of accountability towards them, the homeless appear to be neglected in public policies. Thus, primary prevention from homelessness

could be facilitating shelters with necessary amenities, affordable housing, community housing, creating employment opportunities (more at the village level) and abolishing discrimination.

### INTRODUCTION

Everyone has the right to a standard of living, adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services; and the right to security in the event of unemployment, sickness, disability, widowhood, old age, lack of livelihood or other circumstances beyond his control.

**-Universal Declaration of Human Rights, article 25, para 1.**

The shelter is an essential human requirement. Homelessness perhaps is the most visible violation of the right to adequate housing. A home provides roots, identity, and a sense of belonging and a place of emotional wellbeing. Homelessness is about the loss of all of these (Sattar 2014). Homeless individuals are considered to be an 'invisible burden' to society. Although widely considered to be a 'social evil', homelessness is more prevalent and neglected



in low and middle-income countries like India. Besides, homeless, being the people of the street, they lack access to all civic services. Homelessness is estimated to affect 100 million people globally, comprising 20 to 40 million in the urban areas and about 60 million in the rural areas (UN Commission on Human Rights, 2005). The recent estimates show that around 150 million people are homeless globally (UN Habitat, 2019).

Discussions of homelessness tend to be shaped by several discourses concerning causation, definition, counting the homeless and appropriate responses (Robinson, 2003). Homelessness is one of the most persisting problems in India. Many times, it is considered as one of the by-products of the rapid urbanization, it is a growing urban issue (Ballal, 2011). Homelessness is a strong and evocative social issue that has become emblematic of social inequality and injustice in otherwise affluent societies (Barker, 2012). Homeless people are found in both urban and rural areas, but 'the rural dimension of homelessness has been almost absent in policy debates' (UNCHS 2000). Rural homelessness in India (as in many developed and developing countries) is a relatively hidden and unknown phenomenon.

Historically, the rural poor come to the city in search of better job opportunities and for

the betterment of their living conditions (Srinivas, 2005). Paradoxically, however, they end up being more pauperized. Cities attract poor people with the prospect of improving their life condition (Glaeser, 2011). However, the majority of these people are absorbed in the low-end informal jobs. Therefore, it is highly challenging for them to find shelter in formal housing. In India, about 32 per cent of the population lives in urban areas of which 26 percent live below the official poverty line, and 40 per cent do not have proper housing (Banerjee-Guha, n.d.). Given this backdrop, the present Study uses the census of India 2001 and 2011 data to comprehend the size and magnitude of homelessness in the country. Geographic Information System (GIS) mapping method is used to gain insights into the distribution of homeless population across districts of India, separately for rural and urban areas. Also, the Study compares and quantifies homelessness in Bihar vis-a-vis India. Further, it makes use of Deen Dayal Antyodaya Yojna-National Urban Livelihoods Mission (DAY-NULM) data to estimate the shortage of urban shelters across states/UTs of India. Additionally, the paper briefly examines the government schemes and policies for the homeless in India.

## WHO ARE THE HOMELESS?

In the developing world, the term 'homeless' refers to those who live in open spaces without having any basic shelter for their possessions, such as 'kuccha' (unfinished), slum or shanty house (Ghosh, 2020). According to the United Nations, homeless households that are without shelter that would fall within this scope. They carry their few possessions with them, sleeping in the streets, in doorways or on piers or in another space, on a more or less random basis (United Nations, 2005). The state of homelessness does not merely indicate the absence of a home, but it manifests the outermost states of marginalization and advanced levels of destitution and denial of basic rights (Tippel and Speak, 2009).

However, Census enumeration also poses the problems related to coverage of the homeless population. The most common questions about the homeless concern numbers, composition, and geographic distribution (Lee et al., 2010). Sattar (2014) pointed out that "according to the Census of India definition, the word houseless does not consider people who live in makeshift arrangements or in deplorable housing conditions. So, sections of the population who are vulnerable of becoming homeless are not considered. Besides, the government's official surveys are conducted during the day time, when it is difficult to trace the homeless"

(p.9). Thus, the actual numbers could be much higher than those reported in the Census. Often being homeless lacks other basic human rights such as work, health care, social security, privacy, education and many more.

## FACTORS CONTRIBUTING TO HOMELESSNESS

Poverty and landlessness are the prime causes of rural homelessness and rural and urban homelessness are intimately connected (Wardhaugh, 2012). Typically, rural poverty may cause the male members of households to migrate to urban areas in search of work (Dupont et al., 2000). Mustaquim and Ismail (2013) noted that structural

problems and individual factors that are two important factors that lead to homelessness; “The former include lack of affordable housing, changes in the industrial economy leading to unemployment, inadequate income supports, the deinstitutionalization of patients with mental health problems, and erosion of family and social support. The second one includes physical or mental illness, disability, substance abuse, domestic violence and job loss” (p.44).

Bannerjee Das (2001) offers a useful typology of homelessness, adapting Western categories to the Indian context such as Destitutes ; Migrants; Pavement dwellers; Inmates of institutions; Occupants of emergency camps; and Street children. However,

this typology is based on studies of homelessness conducted in urban areas. Wardhaugh (2012) prepared a typology of rural homelessness in India.

Robertson and Cousineau (1986) cited factors such as deindustrialization, unemployment, welfare cuts, limited low-income housing, increasing poverty, deinstitutionalization, family disorganization, and increasing domestic violence as the main reasons for this epidemic situation. Research shows that those at risk of homelessness typically face multiple difficulties, which may increase the likelihood of a young person prematurely leaving home and subsequently experiencing homelessness (Echenberg & Jensen, 2009).

Type of Homelessness	Location	Causes
Displaced persons	Relief camps	Natural disasters; communal riots; infrastructure development; political conflict
Migrants	Various, both rural and urban	Rural poverty and landlessness leads to urban migration; seasonal migration to and from cities to villages
Inmates of institutions	Institutions, such as beggars' settlements or homes, or leprosy colonies	Physical disability or diseases; destitution
Homeless while living with another household	Accommodation with another household, usually insecure and overcrowded	Destitution.
Slum and squatter residents	Slum and squatter settlements (usually small and relatively hidden)	Poverty and landlessness; migration from other areas
Itinerant groups	No fixed location	Religious mendicants; gypsy groups; itinerant tribal groups

Source: 'Rural homelessness in India' (2012), Susan J. Smith (ed), *International Encyclopaedia of Housing and Home*

Natural disasters also often lead to homelessness. For instance; about 600,000 people were made homeless by the Gujarat earthquake in 2001 (Times Higher Education, 2003), while 275,000 houses were destroyed in the 1999 Orissa cyclone (Rediff on the Net, 1999). Every year thousands of people become homeless due to floods in Bihar and Assam. In addition to geological events, many other manmade disasters and upheavals also contribute to loss of shelters. For example, around 100,000 people have been displaced by the building of the Tehri dam in Uttaranchal, northern India (Chauhan, 2005; Thai Indian News, 2009). History suggests that homelessness increases during periods of social disorganization, such as wars, economic depressions, and periods of technological change (Malloy et al., 1990). Social conflict may also cause widespread displacement and long-term homelessness (Seshadri, 2008).

Some tribal groups follow a nomadic lifestyle for economic and social reasons (Hartsuiker, 1993; Hausner, 2008). The extreme situation of homelessness may be more accurately portrayed as the result of the convergence of many factors that drive this phenomenon, including housing market dynamics, housing and welfare policy, economic restructuring and the labour market, and personal disabilities

Table 1 : Share of Homeless Households & Population in India, 2001-2011

	Homeless Household		Homeless Population		Decadal Growth	
	2001	2011	2001	2011	Household	Population
Total	4,47,552	4,49,761	19,43,476	17,72,889	0.49	-8.78
Rural	2,59,742	1,92,865	11,64,877	83,4,541	-25.75	-28.36
Urban	1,87,810	2,56,896	7,78,599	9,38,348	36.79	20.52

Source: Census of India, 2001 and 2011

(Shlay & Rossi, 1992). The failure of some important institutions like family, community, lack of social support and networks are the major social problems of homeless family and individuals (Nishikant et al., 2018).

### TEMPORAL AND SPATIAL DISTRIBUTION OF HOMELESS POPULATION: With Special Reference to Bihar

Table 1 shows share of homeless households and population in India during 2001-2011. Between the two Censuses of India, 2001 and 2011, the absolute numbers of houseless households has only slightly increased. Whereas, rural areas showed a negative decadal growth of about 25%, falling from 2.59 lakh to 1.92 lakh households.

The country's total homeless population has declined

from 19.43 lakh to 17.72 lakh. There is drastic decline in the homelessness in the rural areas at 28.36%. However, homelessness is more poignant among the urban areas of India. It showed a 20.52% of decadal growth and increased from 7.78 lakh to 9.38 lakh. However, the estimated numbers are mostly inconsistent. For example, in the capital city of Delhi, the same 2011 Census reported 46,724 homeless persons, which was 88,410 as per the Indo-Global Social Service Society and increased to 1,50,000 when counted by the Delhi Development Authority (DDA) during the same period (Zufferey & Yu, 2017).

Table 2 examines distribution of homeless households and population in Bihar between 2001 and 2011. In Bihar, there is high level of out migration but the state attracts very less number of migrant workers.

Table 2: Share of Homeless Households & Population in Bihar, 2001-2011

	Homeless Household		Homeless Population		Decadal Growth	
	2001	2011	2001	2011	Household	Population
Total	6940	9818	42498	45584	41.47	7.26
Rural	4235	6775	29768	32993	59.98	10.83
Urban	2705	3043	12730	12591	12.50	-1.09

Source: Census of India, 2001 and 2011



Table 3: Homeless Households in India and Bihar, 2001 and 2011 (percentage)

	India		Bihar	
	2001	2011	2001	2011
Total	0.23	0.18	0.05	0.05
Rural	0.19	0.11	0.03	0.04
Urban	0.34	0.32	0.20	0.15

Source: Census of India, 2001 and 2011

As evident in Table 3, in both the Censuses, the proportion of homeless households out of the total households has remained constant in Bihar (0.05%), however, it has declined in India from 0.23% to 0.18% in 2011.

Table 4 analyses homeless population in India and Bihar in 2001 and 2011 Census. In India, the share of homeless population was 0.19%, which declined to 0.15%. It has almost remained stagnant in Bihar.

Table 4: Homeless Population in India and Bihar, 2001 and 2011

	India		Bihar	
	2001	2011	2001	2011
Total	0.19	0.15	0.05	0.04
Rural	0.16	0.10	0.04	0.04
Urban	0.27	0.25	0.15	0.11

Source: Census of India, 2001 and 2011

Table 5 shows mean household size among homeless households in India and Bihar. It is interesting to note that even though absolute number of houseless households increased, the mean size of these households shrank between 2001 and 2011 in both India and Bihar.

Table 5: Mean Household Size among Homeless Households in India and Bihar

	India		Bihar	
	2001	2011	2001	2011
Total	4.34	3.90	4.7	4.1
Rural	4.48	4.30	7.0	4.9
Urban	4.14	3.70	6.1	4.6

Source: Census of India, 2001 and 2011

Table 6 presents gender composition of homeless

population in India and Bihar in 2011. The state level distribution of homeless population depicts very heterogeneous pattern. The highest share of homelessness is observed in the state of Uttar Pradesh (18.56%), followed by Maharashtra (11.9%), Rajasthan (10.24%), Madhya Pradesh (8.26%) and Andhra Pradesh (8.19%).

Table 6: Gender Composition of Homeless Population in India and Bihar, 2011

	India		Bihar	
	Male	Female	Male	Female
Total	1046792	726097	24231	21353
	(59.04%)	(40.96%)	(53.16%)	(46.84%)
Rural	444371	390170	17233	15760
	(42.45%)	(53.74%)	(71.12%)	(73.81%)
Urban	602421	335927	6998	5593
	(57.55%)	(46.26%)	(28.88%)	(26.19%)

Source: Census of India, 2001 and 2011; Note: Numbers in the brackets show percentage share

Table 7: Decadal Decrease in Homeless Population across the States of India in 2001 and 2011

States	2001	2011	Population
Himachal Pradesh	8,364	4098	-51
Haryana	59,360	51871	-12.6
Sikkim	286	277	-3.1
Nagaland	2,002	876	-56.2
Mizoram	336	152	-54.8
Meghalaya	1,827	1241	-32.1
Odisha	42,871	34061	-20.6
Chhattisgarh	28,772	24214	-15.8
Madhya Pradesh	2,31,246	146435	-36.7
Gujarat	2,20,786	144306	-34.6
Daman & Diu	1,071	737	-31.2
Dadra & Nagar Haveli	1,471	1004	-31.7
Maharashtra	3,40,924	210908	-38.1
Karnataka	1,02,226	76735	-24.9

States	2001	2011	Population
Goa	5,280	3051	-42.2
Tamil Nadu	86,472	50929	-41.1
Puducherry	1,662	1590	-4.3
Andaman & Nicobar Islands	242	95	-60.7

Source: Census of India, 2001 and 2011

Table 7 provides decadal fall in homeless population across states of India in 2001 and 2011.

More than half of the states and union territories (UTs) of India have shown a negative growth of homelessness.

Table 8 shows decadal changes in the homeless population and households across states of India in 2001 and 2011.

Table 8: Decadal Changes in Homeless Population and Households across States of India in 2001 and 2011

States	2001	2011	2001	2011	Household	Population
Punjab	8,579	9853	46,958	46714	14.9	-0.5
Uttarakhand	2,940	3273	14,703	11824	11.3	-19.6
Assam	3,126	3293	13,355	12919	5.3	-3.3
Andhra Pradesh	40,818	42812	1,63,938	145211	4.9	-11.4
Kerala	5,654	5759	16,533	11853	1.9	-28.3

Source: Census of India, 2001 and 2011

Table 9: Decadal Increase in Homeless Population across States of India in 2001 and 2011

States	2001	2011	Homeless Population
Jammu & Kashmir	12,751	19047	49.4
Chandigarh	2,722	4139	52.1
NCT of Delhi	24,966	47076	88.6
Rajasthan	1,43,497	181544	26.5
Uttar Pradesh	2,01,029	329125	63.7
Bihar	42,498	45584	7.3
Arunachal Pradesh	442	1556	252
Manipur	2,607	3061	17.4
Tripura	857	3225	276.3
West Bengal	1,10,535	134040	21.3
Jharkhand	10,887	23391	114.9

Source: Census of India, 2001 and 2011

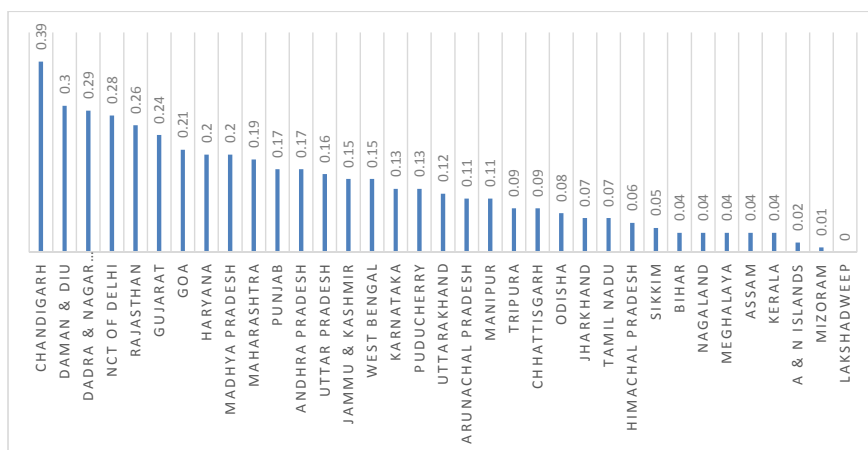
Table 9 examines decadal increase in homeless population across states of India in 2001 and 2011. A total of eleven states/UTs showed an increase in the number of homeless population. Interestingly, none of the southern states have observed positive increase in the homeless population.

It is reflected in Figure 1 that four UTs of the country observed the highest proportion of homelessness, namely, Chandigarh (0.39%), Daman & Diu (0.3%), Dadra & Nagar Haveli (0.29%), NCT of Delhi (0.28%).

Figure 2 shows share of homeless children under 6 years out of total homeless population across States of India. There are a total of 2.70 lakh homeless children under 0-6 years of age-group, which is about 15% of the total homeless population.

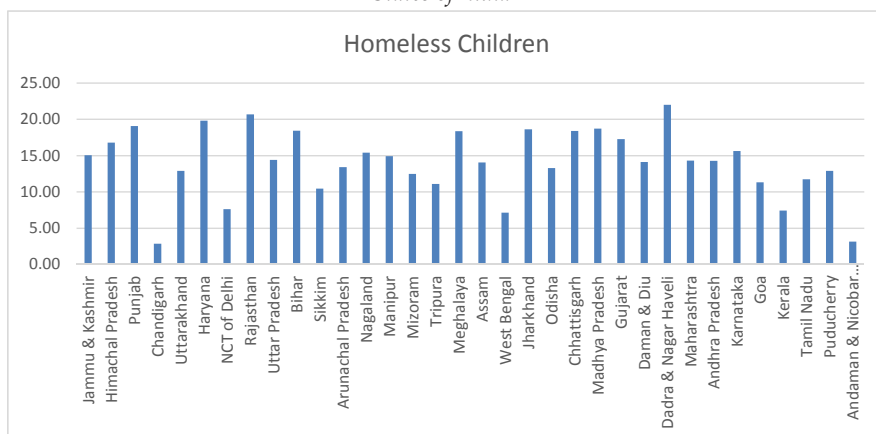
In absolute numbers, the maximum number of homeless households were observed in the district of Patna, Muzaffarpur and Gaya. These districts are also among the most urbanized. The lowest decadal growth was recorded in the districts of Jehanabad, Samastipur, Saran, Buxar and Bhagalpur. Spatial heterogeneity in the houseless population has been captured across 640 districts in India with the help of Census 2011. It portrays a relative situation of the houseless population in rural India. It clearly shows

Figure 1: Share of Each State's homeless Population out of Total Population of the State in 2011



Source: Census of India, 2001 and 2011

Figure 2: Share of Homeless Children under 6 years out of total homeless population across States of India



Source: Census of India, 2001 and 2011

that the western part of India, followed by south-western and south-eastern parts are mainly contributing to the houseless population.

It also shows the houseless situation in urban India. It is also found in our study that there is a significantly positive correlation ( $r=0.5044$ ,  $p<.01$ ) between urbanization rate and percentage homeless at the state level—similarly, all the major

metropolitan cities contributing significant numbers of the houseless population.

## EMPLOYMENT CONDITIONS OF THE HOMELESS POPULATION IN INDIA

Table 10 presents the classification of workers of the houseless population in Bihar and India in 2011. In Bihar, close to 17 thousand houseless people are working, which is 36.92% of the total houseless population.

Table 11 shows categories of main houseless workers in Bihar and India in 2011. The share of cultivators is 12.90% in Bihar compared to 4.3% of India. Further, the share of agricultural labourers is very high (36.46%) in Bihar relative to just 15.8% in India.

Table 10: Classification of workers of houseless Population in Bihar and India, 2011

	Bihar		India	
	Numbers	Share (%)	Numbers	Share (%)
Working Population	16833	36.92	919506	51.9
Main Workers	10055	59.7	654820	71.2
Marginal Workers	6778	40.3	264686	28.8
Non Workers	28751	63.0	853383	48.1

Source: Calculated from Census of India 2011



Table 11: Categories of Main Homeless Workers in Bihar and India, 2011

Categories of Main Workers	Bihar		India	
	Numbers	Share (%)	Numbers	Share (%)
Cultivators labourers	1297	12.90	28244	4.3
Agricultural Labourers	3666	36.46	103679	15.8
Household Industries	496	4.93	34432	5.3
Other workers	4596	45.71	488465	74.6

Source: Calculated from Census of India 2011

Table 12: Gender Composition of Work-Participation of Homeless Population in Bihar Vis-à-vis India in 2011

	Bihar		India	
	Numbers	Share (%)	Numbers	Share (%)
Working Female	5175	30.7	277626	30.2
Working Male	11658	69.3	641880	69.8

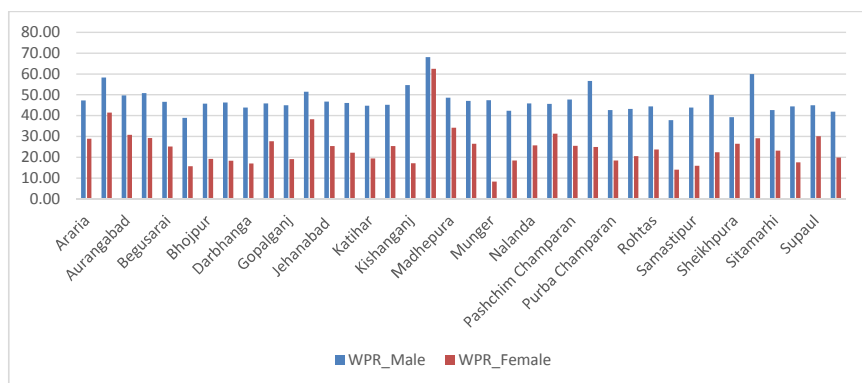
Source: Calculated from Census of India 2011

Table 12 discusses the gender composition of work-participation of the homeless population in Bihar Vis-à-vis India in 2011. Thus, the female work participation rate for the homeless is drastically lower.

Figure 3 illustrates the employment status of the homeless population across regions and genders of Bihar in 2011. Male work participation

rates are considerably higher than that of female across the districts. The higher female work participation among the homeless are reported in the districts of Lakhisarai (62.50%), Arwal (41.46%), Jamui (38.24%), Madhepura (34.18%), and Nawada (31.38%). While the lowest female WPR recorded in Munger (8.39%), followed by Saharsa (14.07%), Bhagalpur

Figure 3: Homeless Employment across Regions and Genders of Bihar in 2011



Source: Calculated from Census of India 2011

(15.69%), Samastipur (15.96%), and Darbhanga (17.03%).

## GOVERNMENT INTERVENTIONS CONCERNING HOMELESS HOUSEHOLDS IN INDIA

The Government of India initiated Pradhan Mantri Awas Yojana (PMAY) in which affordable housing will be provided to the urban poor with a target of building 20 million affordable houses by 31 March 2022. National Sample Surevy (2018) shows that there is a considerable jump in the construction of houses under the scheme of Pradhanmantri Awas Yojana (Gramin). In the NSS 69th Round (July–December 2012), 65.8% houses were pucca. Six years later, this figure has reached 76.7%. It also reports that 19.4 million pucca dwelling units have been constructed between 2013 and 2018. Data also shows that numbers of those living in semi-pucca houses has come down from 24.6% to 17.4% during the period (The Economic Times, 2018).

In addition, Deen Dayal Antyodaya Yojna-National Urban Livelihoods Mission (DAY-NULM) aims at providing permanent shelter equipped with essential services to the urban homeless in a phased manner under the Scheme of Shelter for Urban Homeless

(SUH). The scheme has two components, separately for rural and urban India. The Urban component named as Deen Dayal Antyodaya Yojana is implemented by the Ministry of Housing and Urban Poverty Alleviation. On the other hand, the rural component named as Deen Dayal Upadhyaya Grameen Kaushalya Yojana is being implemented by the Ministry of Rural Development. The NULM has been under implementation since September 24, 2013 in all district headquarters (irrespective of population) and all the cities with population of 1 lakh or more. Further, cost of construction of shelters for urban homeless is fully funded under the Scheme. In the context of homelessness, the mission document of DAY-NULM mentions that it attempts to “Ensure availability and access for the urban homeless population to permanent 24-hour shelters including the basic infrastructural facilities like water supply, sanitation, safety and security” (p.9).

In Table 13 & 14, the total capacity of shelters created under NULM and Non-NULM is presented. Further, a shortage of shelters for the homeless across states of India is calculated.

Table 14 examines the availability and shortage of shelters for urban homeless across states of India. According to 2011 Census, there are 9.25 lakh homeless

Table 13: Availability of NULM and Non-NULM Shelters across States of India

States	NULM Shelters		Non-NULM Shelters	
	Number of Shelters	Capacity of Shelters	Number of Shelters	Capacity of Shelters
Andaman & Nicobar	0	0	1	60
Andhra Pradesh	87	4500	47	2190
Assam	1	20	21	1090
Bihar	73	2407	1	50
Chandigarh	1	105	1	134
Chhattisgarh	23	1012	0	0
Goa	0	0	4	175
Gujarat	50	4197	73	3336
Haryana	41	2128	0	0
Himachal Pradesh	20	635	20	213
Jharkhand	95	2185	0	0
Karnataka	37	927	3	103
Kerala	17	2079	155	9402
Madhya Pradesh	132	4768	0	0
Maharashtra	78	3506	7	601
Meghalaya	3	67	0	0
Mizoram	96	3910	1	20
Nagaland	2	80	0	0
NCT of Delhi	16	1850	177	14419
Odisha	36	1865	0	0
Puducherry	2	200	0	0
Punjab	22	1283	154	2415
Rajasthan	201	9295	0	0
Sikkim	1	13	3	82
Tamil Nadu	157	9869	0	0
Telangana	34	2158	238	4782
Tripura	2	100	0	0
Uttar Pradesh	87	5860	57	2276
Uttarakhand	10	622	12	612
West Bengal	27	1547	11	536
Total	1351	67188	986	42496

Source: DAY-NULM, Ministry of Housing and Urban Affairs, Government of India.

Table 14: Availability and Shortage of Shelters for Urban Homeless across the States of India

States	Urban Homeless (2011)	Total Capacity in Shelters	Availability of Shelters (%)	States	Urban Homeless (2011)	Total Capacity in Shelters	Availability of Shelters (%)
Andaman & Nicobar	65	60	92.31	Meghalaya	177	67	37.85
Andhra Pradesh	75857	6690	8.82	Mizoram	104	3930	———
Assam	2527	1110	43.93	Nagaland	344	80	23.26
Bihar	12591	2457	19.51	NCT of Delhi	46724	16269	34.82
Chandigarh	4133	239	5.78	Odisha	14053	1865	13.27
Chhattisgarh	6533	1012	15.49	Puducherry	1508	200	13.26
Goa	1693	175	10.34	Punjab	18374	3698	20.13
Gujarat	84822	7533	8.88	Rajasthan	73236	9295	12.69
Haryana	23789	2128	8.95	Sikkim	32	95	-----
Himachal Pradesh	872	848	97.25	Tamil Nadu	37117	9869	26.59
Jharkhand	6997	2185	31.23	Telangana	N.A	6940	-----
Karnataka	35473	1030	2.9	Tripura	1352	100	7.4
Kerala	7761	11481	———	Uttar Pradesh	180929	8136	4.5
Madhya Pradesh	66055	4768	7.22	Uttarakhand	5556	1234	22.21
Maharashtra	111373	4107	3.69	West Bengal	104967	2083	1.98
	India	925014	109684	11.86			

Source: DAY-NULM, Ministry of Housing and Urban Affairs, Government of India and Census of India, 2011.

people in the urban areas. The total capacity of shelters created under DAY-NULM is 1.09 lakh. Thus, there are 8.15 lakh urban homeless people who do not have access to shelters.

## CONCLUSION AND IMPLICATIONS

Literature shows that the socio-economic conditions of the shelterless people are much worse than the average population. A homeless person

is highly at risk of suffering from poverty, hunger, poor health, lack to access education, clean water and sanitation, and furthermore. Besides, higher socio-economic inequality may aggravate homelessness among the distressed population. The decadal growth among the homeless households of Bihar is much higher than the national average. Interestingly, the maximum increase among both homeless households and the population is in the rural areas

of Bihar. However, the findings are opposite in the context of India.

The state level distribution of homeless population depicts very heterogeneous pattern. The study found that the highest share of homelessness is observed in the state of Uttar Pradesh, followed by Maharashtra, Rajasthan, Madhya Pradesh, and Andhra Pradesh. Therefore, these five states are home to more than half of the homeless population of the



country. It can also be observed that in all the hilly states and union territories except Delhi less than 1 per cent of the total population is homeless. In the context of Bihar, the maximum number of homeless households were observed in the districts of Patna, Muzaffarpur and Gaya. These districts are also among the most urbanised.

Interestingly, the employment outcomes of homeless people is higher than that of the total population of the country. It reflects distress participation or merely work for survival. Majority of homeless population in Bihar and India fall in the category of main workers. On the other, female work participation rate for the homeless is drastically lower.

The DAY-NULM data also shows that the funds allocated for the creation of homeless shelters remain inadequately utilised. Therefore, governments should actively spend money set-aside for the creation of shelters. Besides, the state governments should pay proper attention to the maintenance of already created infrastructure to cater to the needs of the homeless. Homeless households are subjected to systemic negligence and multiple vulnerabilities. In recent times, the Covid-19 pandemic has further made the homeless more vulnerable and victims of marginalisation. Further, following the complete lockdown in the country,

the 'stay at home' directive becomes an oxymoron to 17 lakh homeless.

Thus, primary prevention from homelessness could be affordable housing, social housing, creating employment opportunities and demolishing discrimination. Not only the government should create urban infrastructure and amenities but also need to focus on improving, maintaining and monitoring the existing ones. It is needed that the government should abide by guidelines laid down by the Supreme Court and follow the necessary recommendations concerning the homeless. Moreover, the paper also attempts to sensitize the individuals and institutions towards the specific rights and needs of the homeless households.

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# A COMMENTARY ON THE AFFORDABLE RENTAL HOUSING COMPLEXES UNDER PMAY(U)

**MS. PRAKRITI MEHTA**

**The Affordable Rental Housing Complexes (ARHC) scheme apart from impacting the urban poor in a positive manner hosts a few opportunities and advantages to the government and private developers. As all stakeholders are incentivised under the scheme, the urban areas and the country is likely to thrive.**

*Keywords: Rental Housing, Urban Development, Migrant, City*

*Ms. Prakriti Mehta (prakritimehta@gmail.com) is Assistant Professor, SVKM's NMIMS Balwant Sheth School of Architecture, Mumbai; and Urban Designer, M/s. Design Action Group, New Delhi.*

*The COVID 19 pandemic has brought to light the plight of the urban poor and the migrants in the city. Amongst other initiatives, the Ministry of Housing and Urban Affairs launched the Affordable Rental Housing Complexes (ARHC) under the Pradhan Mantri Awas Yojna- Urban (PMAY – U) in July 2020. It is an attempt at creating vibrant, sustainable and inclusive affordable rental housing avenues for urban poor or migrants by 'aggregation of their demand at a given site'. The paper critically analyses the rental housing scenarios in India and highlights the importance of the shift from owned house to rental housing schemes. The Affordable Rental Housing Complexes (ARHC) under PMAY (U) can be seen as an opportunity with a positive impact on the urban poor or migrants in terms of a dignified living closer to their workplace. At a larger scale, the ARHC reduces the burden on the city infrastructure, provides business opportunities to the private developers and triggers a multiplier effect on the economy. This paper also identifies the potential issues related to conflicts between parties involved, land use compatibility with the master plan, and recommends for it to be an*

*integral part of the future urban city design process.*

## INTRODUCTION

India's urban population would rise to 39% by 2036 from 31% in 2011, according to the final report of the Technical Group constituted by the National Commission on Population (NCP) under the Ministry of Health and Family Welfare on population projections between 2011 and 2036 in July 2020. The reason for the sharp rise is an increase in migration from rural to urban areas.

Figure 1 Aspirations of Migrants (Source: Author)

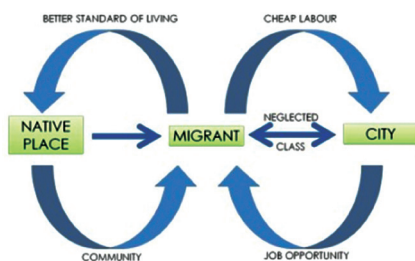


The domestic help, carpenter, painter, cobbler, gardener, potter, construction labour, security guard, factory workers etc. are all on whom the city is dependent for running a daily life (figure-1). They make the city



dynamic. The city gives them an opportunity to enhance their skills, earn more than what they would have in their village in the rural areas. The city is dependent on them, and they are dependent on the city. The urban poor or the migrant who may be, skilled or unskilled, under or uneducated from a rural area moves from one place to another in search of work opportunities and better living conditions (figure-2).

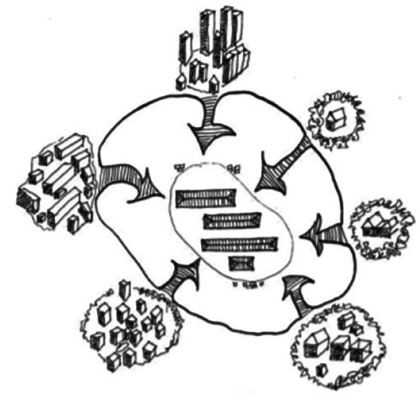
Figure 2 Migration process (Mehta, 2017)



Migration has impacts on economic activity, social conditions, demographic structure, political activity, ecology, physical environment, and in the urbanisation process (figure-3) (Mehta, The first

Entrant to a Smart City, 2017). Rural to urban migration changes the hierarchical order of the urban centres (figure-4). The city does not grow uniformly because of unequal growth of industries, construction work and other activities which generate employment opportunities and attract migrants. Large scale arrival in urban centres leads to an increased need of transport and communication and health care, educational facilities, institutions, recreational centres, water supply, sanitation and power supply (Trunk infrastructure). The process of migration needs due attention to resolve problems of habitable living within the city. The Indian city fails to address this issue; in turn leads to poor standards of living, health hazards, no light, no ventilation, etc. These pockets in city are not sustainable for living – environmentally, socially and economically.

Figure 4 Unequal growth in the city



(Source: Author)

The urban poor or migrants stay in rented accommodations at the periphery of planned urban city areas, spread over the acquired land, once belonging to the native residents whose traditional occupation was agriculture. None of the master plans have a development policy for making these enclaves compatible with the surrounding urban areas. The urban poor or migrant looks for cheap rental accommodation, near their work place. The native residents are unwilling to sell their land, and builds sharing tenements which help them generate a regular rental income. As there are no development control norms, the construction is devoid of professional inputs. The physical outcome is inappropriate utilization of land resource, a haphazard urban form and unhealthy living conditions. In this process, the socio cultural needs of the migrant are completely missed out (figure-5).

Figure 3 Migrant workers gather outside Bandra West Railway Station



(Source: Press Trust of India)

Figure 5 transformation of Land (Mehta, 2017)



The city is under a continuous process of evolution and the migrants make the city dynamic in its functioning. Their financial condition and personal preference of living with their community are the basic reasons they do not wish to own a shelter. This pushes them to accommodate themselves into inhabitable or inhumane conditions like was witnessed during the COVID 19 pandemic (figure-6). Thus, it is necessary to ensure economic, social and environmental security to all the city dwellers, especially with respect to shelter.

Figure 6 Migrant during COVID Pandemic Source: Left: Reuters, Right : Rajesh Balouria from Pixabay



## OWNED VS RENTAL HOUSING SCENARIOS

Historically, the Indian housing policies have been directed towards home ownership. Rental housing has been passed over subject for the last 72 years since independence with no policy framework to accommodate 21.72 million urban rental households.

As per the Census 2011 data, 11.09 million houses remain vacant in urban areas despite the massive housing shortage (figure-7). In 2014, around 1.08 lakh houses under Jawaharlal Nehru National Urban Renewal Mission (JnNURM) or Rajiv Awas Yojna (RAY) are still vacant in 159 cities as per the ARHC Operational Guidelines (Ministry of Housing & Urban Affairs, 2020). The scheme of PMAY (U) is rapidly moving towards achieving the vision for providing a permanent (pucca) house to every household by 2022 under "Housing For All 2022". As per the progress data in August 2020, out of 1.05 crore houses approved, 66.2 lakhs have

been grounded for construction, of which 35.1 lakh houses have been completed and delivered (MoHUA, 2019). A portion of these are assumed to be lying vacant due to various reasons such as poor maintenance of vacant stock, dilapidated state of buildings, lack of incentives, and affordability. The private developer barely sees it as a profitable opportunity and does not guarantee a steady income, even to the landlords.

Affordability is a concern in ownership of housing for the Economically Weaker Section (EWS) and Urban Poor. The housing prices are relatively high, pushed up by high construction and transaction costs. Access to finance is available to them but the beneficiary is unable to avail it. The key concern is to provide shelter to the poorest, who is barely earning enough to survive and save, to send back to his family in their village. The income of the daily wage earners would just be enough for sustenance. An investment for ownership of a house may not be a priority or possibility for them.

As per Knight Frank India's research report, India Real Estate (Khaitan, 2019) – January to June 2019, the residential

Figure 7 Rental Housing Scenarios



(Source: Author)



prices have stagnated across cities with Mumbai, Pune, Chennai and Kolkata witnessing a price decline of 3%, 4%, 3% and 2%, respectively. Ahmedabad, Bengaluru and the National Capital Region (NCR) noted only 1%, 2% and 3% price growth while Hyderabad has 9% price growth. The capital value growth hardly presents ownership of a residential property as an investment asset. On the other hand, the affordable housing under the Housing for all 2022 is not a tradable asset for two reasons. A prospective buyer can himself get it from the government, secondly, it is a subsidised product and there exists a lock-in period.

As per Census 2011 data, 79 %

of the total rental households in India are in Urban Areas. A household size of 3-4 comprise of up to 50 % of the rented households in India, which indicates the lower dependency on ownership of a house in urban areas by nuclear families. A household size of 1- 2, ranges between 6 % to 12 % of the total rented households in India. This is expected to rise with the growth of first phase migration of the poor in cities that prefers a shared accommodation.

## FORMALISING THE URBAN RENTAL HOUSING

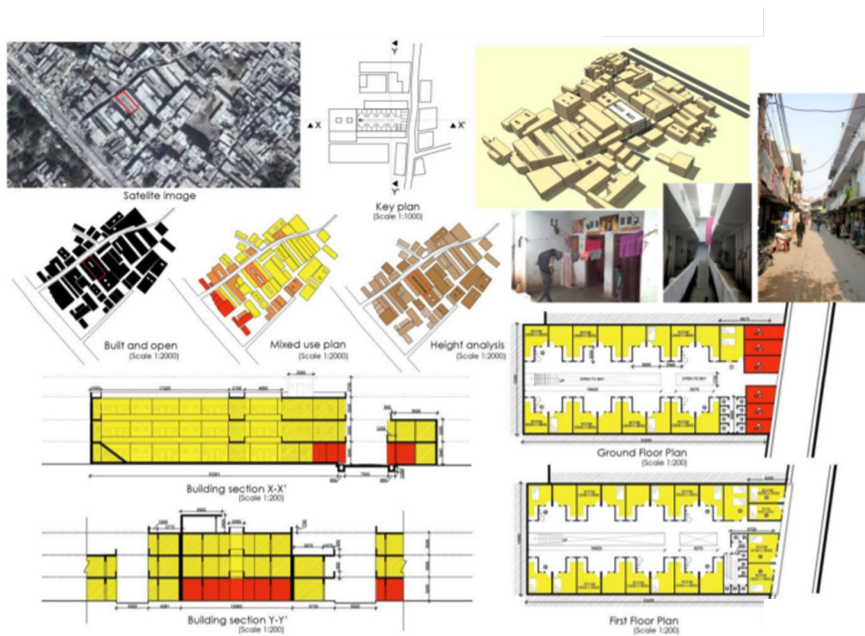
As per the National Sample Survey Office (NSSO) in 2012, 71% of the households living in

urban rented accommodations do not have any written contract (Khaitan, 2019). While a part of this could be due to the informality of the premises itself, the Rent Control Act enacted by the various state governments has become a deterrent to the formalisation of rental agreements across the country (figure-8).

### Shift to a Rental Housing Approach – Affordable Rental Housing Complexes (ARHC)

The reverse migration of the urban poor or migrant during the COVID 19 Pandemic put forward the need for providing ease of living through access to dignified rental affordable housing close to the migrant or urban poor's workplace. Under the vision of "Aatma Nirbhar Bharat " and as a Sub-Scheme to the "Pradhan Mantri Awas Yojana (Urban) " Mission for "Housing for All 2022", the "Affordable Rental Housing Complexes (ARHC) was announced in 2020 in public and private sectors under two models of approach with sufficient fiscal incentives have been provided in the scheme. Utilizing existing Government funded vacant houses in cities by converting them into ARHCs under Public Private Partnership (PPP) mode or by Public agencies as a Centrally Sponsored Scheme,

Figure 8 Condition of Shared Rental Accommodation in Bhangel Village in Noida (Source: Author)



<sup>1</sup>First Phase: The migrant first enters the city based on his connections in the city that may be his relatives or friends or acquaintance at the native village. They rely on them for housing or an accommodation and finding a job immediately when they enter the city.

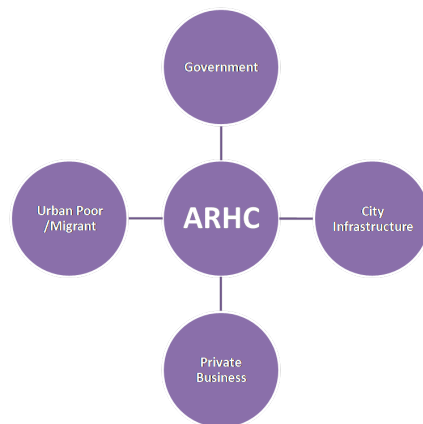
Second Phase: As a chain reaction, friends and family members of a migrant join the migrant, once he is settled at his new destination.



and secondly by Construction, Operation and Maintenance of Affordable Rental Housing Complexes by Public/ Private Entities on their own available vacant land as a Central Sector Scheme. (Ministry of Housing & Urban Affairs, 2020)

The Affordable Rental Housing Complexes (ARHC) scheme apart from impacting the urban poor in a positive manner hosts a few opportunities and advantages to the government and private developers. As all stakeholders are incentivised under the scheme, the urban areas and the country is likely to thrive (figure-9).

Figure 9 Stakeholders in the ARHC Scheme



(Source: Author)

### Advantages for Government

Urban Areas and cities are the epicentres of economic growth which contribute significantly to the Indian economy. According to the Economic Survey 2019-2020, over 60 % of India's current GDP comes from the cities and towns. The construction sector accounts for 8.2 % of GDP which

includes housing and employs about 12 % of the workforce (OECD Economic Surveys 2019, 2019). Therefore, the investment made under PMAY (U) not only provides affordable houses to the poor to achieve the goal of 'Housing for All' under ownership or rental schemes but also triggers a multiplier effect on the overall economy.

The government commits to provide the basic needs of survival of food, clothing and shelter. The scheme aids the national aspiration that is fulfilled as committed to be accomplished by the government in the given tenure to provide shelter to every citizen of the country. Model – I encourages converting existing Government funded vacant houses in cities into ARHCs through Concession Agreement for 25 years (Ministry of Housing & Urban Affairs, 2020). This model permits for the vacant housing available with the government to be utilised. It ensures national money will be put to good use.

### Opportunities for Private Developers

The Model II- under the ARHC encourages Construction, Operation and Maintenance of ARHCs by Private/ Public Entities on their own available vacant land (Ministry of Housing & Urban Affairs, 2020). This has created an investment options with a business opportunity for private developers. It

is a lucrative option for entrepreneurs to venture into the Rental Housing business.

### Positive Impact on the Urban Poor

The ARHC promotes labour and social mobility to the urban poor or migrant. It assures healthy living conditions which include infrastructural hygiene, access to better food, ventilated accommodations, thermal comfort and mental peace, in a planned area. It gives the opportunity for the tenant to choose their accommodation closest to their workplace. It reduces commute time and their dependence on different transport modes. This increases their work efficiency and gives them more time to build a socially sustainable environment around them. It caters to the social needs and aspirations of the urban poor by providing recreational and community open spaces, crèche, gender needs, etc.

### City Benefits

As all aspects of living, working and recreating are in close proximity, the number of trips of for live – work- play gets reduced considerably for the urban poor. It reduces the pressure on the city infrastructure, specially required for movement through different modes of transport. The scheme gives an opportunity to predict, plan and design for an appropriate estimation of requirements and optimised utilisation of city's trunk

infrastructure like water supply, sewerage, drainage electricity, street lights, telecom, etc. The employer of the urban poor would reap the most tangible (economic) benefit of the ARHC scheme. The urban poor are likely to be lesser fatigued by long travel hours and redundant routine works. They have an ease of living which gets reflected in the form of a healthy and an energetic human resource thereby increasing the efficiency in performance and resulting in a higher output.

## RECOMMENDATIONS

- The Draft Model Tenancy Act 2019 (MoHUA, 2019) aims to bridge the trust deficit between tenants and landlords by clearly delineating the obligations of tenants and landlords. In order to ensure speedy redressal of disputes, it also proposes to establish Rent Court and Rent Tribunal that will hear appeals for matters connected to rental housing. This Act can be used to fuel the rental housing supply pipeline and thus attracting more investors. It is essential to create a regulatory body to deal with issues related to ARHC separately. It should include dispute redressal, exemption from security and advance rent, delayed rent payments, maintenance of property etc. under the Act. There should be a provision for

alternative dispute resolution through mechanisms such as conciliation and mediation at the local or community level under the provisions of this Act.

- A high density development in the urban areas is expected as an outcome of the ARHC scheme. Hence, it is necessary that adequate infrastructure and its contingencies are predicted, planned and should be an integral part of the city designing and master planning.
- Over the years, when the urban poor or the migrant financially stabilises in the urban areas, he or she would aspire to own a house in the city. As an extension to the ARHC Scheme, a provision could be made for the tenant to have the first right to own the house he or she is residing in, if ever sold by the developer, after the completion of the first phase of the scheme i.e. 25 years. This recommendation would not only bring in a feeling of belongingness but also instil a sense of identity in the urban poor or the migrant as a city dweller.
- The ARHC allows permitting change in land use for the purpose of developing rental housings. It is necessary to ensure that the interface of the new rental residential areas is being developed

with compatible land uses only. The development under ARHC interfacing with a non-compatible land use could be hazardous in the longer run.

- The ARHC Scheme could allow funding for construction and maintenance from the CSR (Corporate Social Responsibility) initiatives which defines the companies' obligation to take up projects towards social welfare activities.

## CONCLUSION

Rental Housing has been a neglected space in India for a very long time. Housing is a non-discretionary product. People will need homes in good times and bad. Coupled with the millennial population coming of age, housing non-affordability and the changing perception about home ownership, the pool of renters is only going to expand. Rental housing reforms like the Affordable Rental Housing Complexes (ARHC) scheme in India will help develop a large residential stock. The Scheme with its proposed two models ensures benefits, opportunities and advantages to all stakeholders i.e. the government, the city, the business entrepreneurs and the urban poor or the migrant, all at one go. The government vacant housing stock will be put to use and new housings will add to the economic development

of the country. A planned development across all urban areas of the country would mitigate issues of environmental and social sustainability with reduced pressures on infrastructure, better standards of living, equitable and designed social spaces, energy efficiency, comfort etc. Thus, The ARHC and its associated infrastructure, densities and contingencies should be an integral part of the city design and planning process. Many investors in the past were unable to recover from investments in the owned housing sector. The ARHC opens avenues for entrepreneurs to reap the benefits from the fiscal incentives of getting into the rental housing business. The ARHC scheme should perform with the existing laws like the Draft Model Tenancy Act and plug in to social welfare obligations of the Corporate Social Responsibility initiatives under the Companies Act to attract more investors into this realm. Lastly, but very

importantly, the Affordable Rental Housing Complexes (ARHC) scheme will offer environmental and health safety, economic viability and social security to the Urban Poor or migrant who enters the urban areas, seeking opportunities of better life.

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## DEDICATION OF AMBULANCE SERVICES BY DCP, HUDCO



Dedication of Ambulance Services by Mr. M. Nagaraj, Director Corporate Planning HUDCO along with Sri Puvvada Ajay Kumar, Hon'ble Transport Minister, Govt. of Telangana - Provided by HUDCO under CSR grant to District Hospital Kothagudem, Bhadradri Kothagudem District (Aspirational District) on 28.08.2020 through Video Conference.



# URBAN INDIA'S MUCH NEEDED RENTAL HOUSING PUSH

**DR. DEBARPITA ROY**  
**MR. MANIKANDAN KP**

**Rental housing will play an instrumental role in addressing urban India's housing gaps. Effective implementation of ARHC and MTA, keeping the interest of urban low-income households in mind, is the much needed next step.**

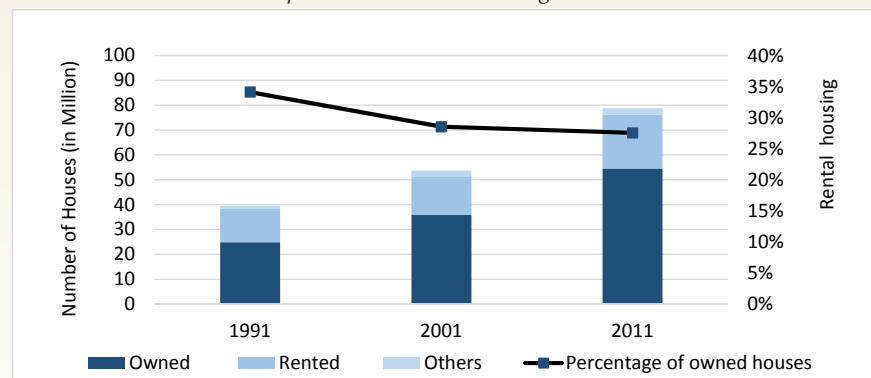
Alarming, share of rental housing is low among the urban low income and poor households, although the need for rental housing is the greatest among them. This prevailing sad state of rental housing situation came into spotlight following the nationwide lockdown imposed in March this year. COVID-19 brought about unprecedented health and economic crisis and re-focussed attention on the gaps in access to secure and adequate housing faced by India's urban poor and migrants. To address this the Union Government launched the Affordable Rental Housing Complexes (AHRCs) scheme. ARHC is one of the two most recent and much needed rental market policy interventions. The other being the Model Tenancy Act (MTA) put forth in July 2019. This article discusses both initiatives and certain aspects of each which require further attention for greater effectiveness. In case of AHRCs special attention needs to be paid to

the below poverty line households, provisioning of schools and skilling centres as a part of the complexes and the location of these complexes. In case of MTA, the article highlights a few of immediate changes and a few long-term ones, to improve MTA's efficacy.

## INTRODUCTION

Rental housing is the most affordable form of housing for households, particularly low-income ones. But insufficient availability of affordable and secure rental housing is a major issue plaguing urban India. Further, housing policy till recently has been largely geared towards promoting housing ownership. Supported by economic growth this resulted in a steady decline in proportion of rental housing (Graph 1).

Graph 1: Urban rental housing in India



Source: Census 1991, 2001 and 2011

*Key Words: Rental Housing, ARHC, Affordability, Model Tenancy Act.*

Dr. Debarpita Roy (droy@icrier.res.in) is Fellow, Indian Council for Research on International Economic Relations (ICRIER). Mr. Manikandan KP (mani@ihf.in) is Institution Builder, Indian Housing Federation (IHF).

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Interestingly and alarmingly, the share of rental housing is the lowest among the lowest monthly per capita consumer expenditure (MPCE) deciles, although the need for rental housing is the highest among them (Table 1).

Table 1: Share of households living in rented housing by MPCE deciles

MPCE Decile	Rental households (%)
1	12.3
2	17.8
3	23.9
4	25.1
5	29.9
6	30.7
7	36.0
8	36.6
9	38.8
10	43.1
<b>Total</b>	<b>29.4</b>

Source: Authors calculations based on 76th round NSS on 'Drinking Water, Sanitation, Hygiene and Housing Conditions in India

Rental housing in urban India is largely supplied by private landlords. In India a bulk of the rental housing stock is created as an extension to the landlord's home. ADB (2013) puts the proportion of small landlords at 80 percent for urban India. In case of low-income households, many a times the landlord is himself or herself of a similar economic profile as the tenant (Kumar 2003). Based on his study of Bengaluru and Surat, Kumar (2003) categorises

the landlords who usually cater to low income households into three types. 'Subsistence landlords' are landlords who rent rooms in order to supplement their income and meet basic consumption needs. These landlords are dependent on rental income for meeting their basic needs. Next are 'petty bourgeois' landlords who are not dependent on rental income to survive but depend on the same for any capital expenditure and for expenditure on consumer durables. The last category is 'petty capitalist' landlords. These landlords usually possess a number of rented properties and seek to expand their rental and real estate portfolio including land. Many a times they use this land to build more rental housing. If the number of rented properties they hold and their income from them become sizeable, such landlords depend on rental income as their main source of income. However, rental housing provided to the low-income households by these different categories of landlords in urban India is largely informal in nature. Rental arrangements between renters and landlords in informal housing usually do not involve any written contract and is based on word of mouth. About 79 percent of rental arrangements were without any written contracts in urban areas (Table 2). As expected, proportion of rental households without written rental contract

decline as one moves up the MPCE deciles.

Table 2: Share of urban renter households with no written contract across MPCE deciles

MPCE Decile	Share of renter households without written contract (%)
1	90.4
2	89.7
3	87.4
4	88.1
5	83.2
6	81.1
7	81.1
8	78.4
9	69.5
10	64.9
<b>Total</b>	<b>79.2</b>

Source: Authors calculations based on 76th round NSS on 'Drinking Water, Sanitation, Hygiene and Housing Conditions in India

This prevailing sad state of rental housing situation came into spotlight following the nationwide lockdown imposed in March this year. COVID19 brought about unprecedented health and economic crisis and re-focussed attention on the gaps in access to secure and adequate housing faced by India's urban poor and migrants. Following the lockdown announced in late March 2020, India witnessed the largest mass migration since Partition in 1947. This reverse migration is estimated to have involved 2 to 5 million people. Concurrently, a World Bank study estimates 40 million internal migrants to be affected .

Migrant households are typically low-income households living in substandard and inadequate housing conditions in the cities of their employment. Rental housing is often the only available housing solution for such households. To address this problem, the Government of India launched the 'Affordable Rental Housing Complexes' (ARHC) scheme under the umbrella of the ongoing Pradhan Mantri Awas Yojana – Urban (PMAY U), as a part of the Hon'ble Prime Minister's 'Aatma Nirbhar Bharat' Vision. The scheme covers economically weaker sections (EWS), lower income groups (LIG) and migrant households, students and other vulnerable groups. ARHC is one of the two most recent and much needed rental market policy interventions. The other being the Model Tenancy Act (MTA) put forth in July 2019, which seeks to improve regulation and enhance efficiency of urban rental markets. This article discusses both initiatives and certain aspects of each which require further attention for greater effectiveness.

### **AFFORDABLE RENTAL HOUSING COMPLEX (ARHC) SCHEME**

ARHC scheme is a social rental

housing scheme wherein rental housing is to be provided at below market rates based on the paying capacity of the renters. It seeks to target more than 350,000 beneficiaries. It is to be implemented through two models: Model 1 – renting of unused and vacant housing constructed under any government scheme, through concessionaires, as a Centrally Sponsored Scheme; Model 2 – construction, operation and maintenance of ARHC by public and private entities on their own land, as a Central Sector Scheme. In case of Model 1, States/UTs/Parastatals/ULBs are to identify and list all vacant and unused government houses. As per the ARHC scheme documents, of the total 13.83 lakh houses sanctioned under JNNURM and RAY missions, 1.08 lakh houses remain vacant across 159 cities. In addition, vacant houses constructed by various state governments can also be covered. Concessionaire will repair, retrofit and operate the ARHC. In case of Model 2, States/UTs/Parastatals/ULBs are to identify public and private entities with vacant land. In case of non-residential vacant land, the State is to ensure required changes are made in the Master Plan to allow for residential use of such land. In both cases, an

ARHC is to function as one for a minimum period of 25 years. An ARHC is to have 1-BHK, 2-BHK apartments and dormitory beds of 30 sqm, 60 sqm and 10 sqm (per bed) respectively with a minimum of 40 dwelling units (DUs). Dormitories will comprise of 4 to 6 beds per dormitory and 3 dormitory beds is to be considered as one DU. 1 BHK and 2 BHK DUs will include one or two bedrooms, one living room, kitchen, bathroom and toilet. All DUs are to have access to basic services such as water, sewage, sanitation and electricity. Complexes to have health centres, creche and shops catering to daily necessities etc. Any project can have a maximum of one-third of all DUs as 2-BHK DUs.

Initial rent for the DUs and dormitories are to be set by ULB after conducting a local survey. Survey is to be conducted by the ULB at the proposal stage itself. Rents can be increased by a maximum of 8 percent every two years, provided it doesn't increase by more than 20 percent in five years. However, illustrative models showcasing financial viability of the scheme assume rent per DU to be between Rs. 2500 to 3500 for Model-1. For Model-2, rent of Rs. 3000 per dormitory bed and Rs.6000 per 1-BHK DU has

<sup>2</sup><https://www.sciencedirect.com/science/article/pii/S0188440920309401>

<sup>3</sup><https://indianexpress.com/article/explained/coronavirus-india-lockdown-migrant-workers-mass-exodus-6348834/>

<sup>4</sup><https://openknowledge.worldbank.org/bitstream/handle/10986/33634/COVID-19-Crisis-Through-a-Migration-Lens.pdf?sequence=5&isAllowed=y>

<sup>5</sup><https://economictimes.indiatimes.com/news/economy/policy/cabinet-nod-for-development-of-affordable-rental-housing-complexes-for-urban-migrants-poor/articleshow/76855891.cms>

<sup>6</sup><http://arhc.mohua.gov.in/filesUpload/Operational-Guidelines-of-ARHCs.pdf>



been assumed for the financial viability analysis.

Incentives for ARHC concessionaires include allowance of 50 percent additional Floor Area Ratio (FAR) without any additional cost. Earnings and profits from ARHCs will be exempt from income tax and GST. Municipal service charges and property tax will be levied at par with residential properties which are not rented out. All ARHCs are to be out of purview of existing rental acts and be governed as per the provision of model tenancy act (MTA), discussed in the next section. Convergence is sought to be achieved with other government missions such as Smart Cities, AMRUT, Swachh Bharat Mission, NULM, Ujjwala, Ujala, Make in India, Atal Innovation Mission and Skill India Mission.

## ARHCS – A FEW SUGGESTIONS

A few points need to be kept in mind for ensuring greater efficacy of this scheme. First, given the wide set of targeted beneficiaries comprising EWS, LIG households including migrants and students, catering to the interests of the urban households below the poverty line needs to be prioritised. It is suggested that ARHC should reserve a specific number of units in each ARHC for urban

poor households at a lower rent than what is payable by the other beneficiary households. Financial viability of the ARHCs have to be ensured at rents affordable for such households through other funding mechanisms. In a well-functioning market set-up, mechanisms such as 'rental vouchers' in use in USA and Canada, targeting the urban poor can be implemented. 'Rental vouchers' schemes which are essentially subsidies provided to poor renters for renting in formal housing markets, will increase the supply of rental housing and incentivise owners of vacant houses to rent out and make formal housing accessible to the urban poor. As the rental market matures further with institutional suppliers of rental housing including ARHCs coming into the picture, supply side schemes such as Low Income Housing Tax Credit (LIHTC) of the USA can be explored. LIHTC scheme essentially provides tax incentives to developers and investors of affordable rental housing in the form of redeemable tax credits and is issued by USA government. *Second*, checks should be carried out at regular intervals to ascertain continued eligibility of households to continue as beneficiaries of the scheme. *Third*, any supply side effort such as ARHCs needs to be supplemented with measures which improve livelihood

and education outcomes of beneficiary households. Provisioning of schools and skilling centres as a part of the ARHC will go a long way in improving long term welfare of these households. Last but not the least and most importantly, all ARHCs should be located close to existing employment centres of the beneficiary households.

## MODEL TENANCY ACT (MTA)

Lack of transparency in rental markets coupled with poor institutional support are a major factor hindering universal access to housing in Indian cities. About one-tenth of urban houses were vacant as per Census 2011. Registered rental leases are typically regulated either by the state rent control laws or the Transfer of Property Act, 1882. Often, archaic rent control laws have ended up being misused resulting in a rental housing market which functions outside of the existing rental regulations. In case of middle- and higher-income households, rental arrangements between landlords and tenants are usually in the form of unregistered 'leave and license' agreements of duration up to 11 months, which are outside the purview of the aforementioned rental regulations. Indigenous methods such as *pagdi* circumvent these regulations. As discussed

<sup>7</sup><https://www.taxpolicycenter.org/briefing-book/what-low-income-housing-tax-credit-and-how-does-it-work>

earlier, in case of low-income households, rental arrangements might not be backed by a written contract and in cases where there is a written contract, it might not have legal validity.

Though these poorly regulated rental markets function as per the market forces of demand and supply, the market conditions are far from ideal. Such markets protect the interests of neither the tenants nor the landlords. While tenants worry about sudden eviction, unjustified rent increase, harassment by landlord while refunding security deposit or paying for repairs etc., landlords worry about tenants not vacating and claiming ownership of property, and the inability to increase rents to match market realities.

Taking note of these challenges, the Union Government had come out with the Draft Model Tenancy Act, 2019 in July last year, seeking public opinion on the same. Housing being a state subject, one of the mandatory requirements of PMAY-U was for states to amend or legislate their rental laws based on this model act. Next, we discuss the immediate and long-term measures that should be implemented for an efficient rental housing sector in the context of the MTA.

### **MTA - Measures for the immediate future**

The MTA with its provisions

to establish state-level rent authorities and tribunals, should be finalised, adopted and implemented by states. Some changes are being proposed here. The recommended cap on security deposit as suggested in the MTA should be dropped in its initial run, to encourage all rental agreements, both prospective and retrospective, across all formal housing to be formally registered. The initial objective must be to bring all rental units in formal residential properties across India's cities, under the purview of a formalised and regulated rental market. The well-intended provision that caps security deposit to two months' rent may not find acceptability among landlords. So, such measures may be introduced later once the initial objective is realised. Parallely, the MTA should extend to all forms of rental agreements including 'leave-and-license' agreements, the pagdi system, homestays, PG housing and other professionally managed residential properties. Also, the unique registration number to be allotted to all registered agreements as per the MTA could further be linked to House Rent Allowance (HRA) tax exemption for salaried tenants. This would make registration of rental agreements both necessary and popular.

### **MTA - Over the longer term**

*First*, over the longer term,

the MTA also needs to be complemented with other policy interventions that would make the economics of formalised rental agreements affordable. Rules and regulations for commercial and residential rental agreements should be separate since their purpose, scale of rental returns and stakeholders involved, are markedly different. Instead of equating rental deeds to conveyance deeds, the stamp duty and registration charges payable on housing rental agreements should be preferably at a much lower rate than those on sale deeds. Payment processes for these charges should be simple with one-step online portals. Tax breaks on income from rental units, in particular those catering to the EWS and LIG households, could reduce the tax avoidance behaviour by landlords that leads to informal rental agreements.

*Second*, the government should discourage house purchases for speculative gains. Fiscal incentives such as exemption from capital gains tax on re-investment of the gains from the sale of one house in the purchase of another two houses within a stipulated period should be re-examined in terms of their effect on promoting universal access to housing. Levying vacant house tax could increase the supply of rental housing and housing access and discourage speculative investment in housing.

*Third*, investment should instead be encouraged in rental housing units which cater to EWS and LIG households, through appropriate fiscal incentives such as tax holiday for an initial period for owners and professional operators of rental housing as well as Real Estate Investment Trusts (REITs). Also, rental housing models along the lines of 'rent to own' projects such as 'Chandigarh Small Flats Scheme 2006' for slum dwellers by the Chandigarh Housing Board should be explored across other cities. Beneficiaries of this scheme pay a monthly 'license fee' as rent for the allotted flat. Although the schematics for transition to eventual ownership are yet not clear in case of Chandigarh, if properly implemented such schemes will be a welcome addition to the stock of low-income rental housing in a city.

*Fourth*, the national rental policy should encompass alternate non-conventional mechanisms of rental housing that are prevalent in various parts of India. These include arrangements where the tenant, in exchange of a fixed lumpsum amount, gets possession of the property during the period of tenancy, such as the *Bhogya system* in Karnataka and the *Othi system* in Tamil Nadu. At the end of the period of tenancy the lumpsum is returned by the owner without

any interest, effectively making the commuted rent equal to the interest this amount would earn in the owner's bank account. In certain circumstances and markets, the opportunity cost of this lumpsum amount in terms of the potential bank yields foregone by the tenant is less than the market-determined monthly rent that would have otherwise been payable, making the arrangement financially beneficial for both landlords and tenants. Such arrangements do not fit into the existing framework of the MTA, yet are fully functional models that have worked in the local context and could be incorporated into the formal rental housing framework of the country. Kumar (2003) in the context of Bengaluru and Surat, notes that it is impossible for any institutional mechanism to replicate the various rental solutions and mechanisms which are in play, and suggests that ways and means have to be devised such that the government is able to support and enhance the transparency and efficiency of the rental market in informal housing.

*Fifth*, the MTA as and when adopted by the states should accommodate intra-city differences and needs across a state. While urban local governments are entrusted with the role of ushering in urban change, their inputs are

rarely factored in policies and regulations. Regulations for rental markets should factor in their inputs and if required be formulated at city level.

*Last but not the least*, the biggest challenge that needs to be surmounted is - the transparency, security and standardisation from draft MTA need to be extended to all informal rental arrangements including those catering to the low-income segment to bring them into a formal system so that necessary and suitable interventions can be made.

## CONCLUSION

To conclude, as rental markets become more transparent, efficient and secure for both landlords and tenants, both demand and supply of rental housing will increase. Rental housing will play an instrumental role in addressing urban India's housing gaps. Effective implementation of ARHC and MTA, keeping the interest of urban low-income households in mind, is the much needed next step.

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<sup>8</sup>Based on authors experience and primary research



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## GENERAL GUIDELINES: CHECKLIST FOR SUBMISSION OF ARTICLES

The following checklist should be used when preparing an article for submission. Please be sure to follow the specifications exactly and completely to ensure that your article is reviewed in a timely manner and any delays avoided further along in the publishing process should your article be accepted for publication.

1. The paper should be created using a word-processing program (such as Microsoft Word) and should be between 3,000 and 5,000 words in length. The file may be in .docx or.doc format.
2. The paper is typewritten, double-spaced, and formatted to print on 8.5" x 11" (or A4) size paper. It is written in the third person in a clear style, free of jargon.
3. The first page of the article includes the following:
  - i. the paper's title; and
  - ii. an approximately 200-word abstract that emphasizes the paper's contribution to the field and its practical architectural/ planning social/ economic implications.
  - iii. the name(s), position(s), professional or academic affiliation(s), and email address(es) of the author(s), as well as the full postal address of the corresponding author;
4. The body of the paper should include the following:
  - i. an introduction to the subject,
  - ii. background information,
  - iii. discussion of procedure,
  - iv. results,
  - v. conclusions,
  - vi. implications for practice and advancement of research,
  - vii. references,
  - viii. acknowledgments (optional; if funding for the research was received from non-personal sources, the sources must be identified in this section), and
  - ix. an autobiographical sketch.
5. Please ensure that:

- i. References are complete, have been arranged alphabetically by author surname and checked for accuracy.
- ii. Reference citations in the text are referred to by author name and year. If there are more than two authors, the name of the first author followed by ", et al." has been used.
- iii. References contain the following information, in the order shown: names of all contributing authors (last name followed by first initial), date of publication, title of article, names of editors (edited books only), title of journal or book, volume and issue numbers (journals only), location and name of publishing company (books only), and inclusive pages (journals and articles in edited books).
- iv. Figures/ pictures/ graphs submitted are:
  - a. Large enough to be readable when reduced to fit the journal page size (approximately 5.25" x 8.25").
  - b. A brief caption is provided for each figure/ picture/graph.
  - c. The figure is cited in the text.
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# TOWARDS AFFORDABILITY TO URBAN POOR

## -Learnings from Dharavi and The World

**AR. SNEHAL SHIRISH GHAG**

**Over the years, various proposals and housing solutions were put forward by different experts which had tried to solve the problem of making cities slum-free, which are the larger level strategies that do not acknowledge the urban poor on a deeper level. So, there is a need to go deep down into the living pattern of Dharavi residents. There is a need to plug in the formal role of an NGO or NGOs to go on the deeper level understanding of community needs and to gain the community's trust.**

*Keywords: urban poor, affordability, slum, spatial dependencies*

*Ms. Snehal Shirish Ghag (snehalghag90@gmail.com) is a practicing Architect and Urban Designer, Mumbai.*

*The idea of slum redevelopment often comes forward through projecting the inappropriateness of housing, infrastructure and lack of tenure security to the slum dwellers by the concerned institutions. However, even though it is a reality, it is also an affordable option for the urban poor, where the land is available, accessible and becomes affordable in fulfilling the everyday needs. The case of Dharavi demonstrates the example of slum formation by the urban poor over the years for fulfilling the needs for their livelihood which is based on small scale industries that have a strong network within Dharavi as well as within the city. The state has taken the initiative of making the 'Dharavi redevelopment project', a vision which aims to contribute towards making Mumbai a 'World Class City', which has led to opposition by the communities residing in Dharavi along with the group of citizens. This paper focuses on how the city's 'slum policies' are endeavouring to untangle the problems of slum formation in the city through examples of the world with a keen focus on Mumbai's slum Dharavi. The paper endeavours to think through the lens of urban poor and tries to establish thoughts on their sustainability which are overlooked for building larger*

*visions.*

### **SLUM: AS AN AFFORDABLE OPTION**

According to Alan Gilbert, the term 'Slum' is often found interpreted as 'dangerous', as it opens up complex myths about poor people. The World Bank had projected a scenario regarding slums which explained how hundreds of millions of urban poor in the developing world live in an unsafe environment which creates threats to their health and security. And these living environments also lack basic infrastructure and services (Alan Gilbert, 2007). However, even though it is a reality, it is also an affordable option for the urban poor as their struggle for obtaining everyday needs are associated with the spatial characteristics of slums. Similarly, during the 1900s people had settled in Dharavi in search of affordable shelter, either evicted by the state for various reasons or encroached for shelter and livelihood. Today, it is known as 'slum', where one can notice every lane in Dharavi is developed in conjunction with their livelihood needs and its urban form justifies the

significance of the small scale activities.

## DEVELOPMENT PRESSURE

The Under-secretary General and Executive Director of UN-Habitat, criticised that general lack of attention to the urbanisation of poverty on the part of policymakers, shelter issues continued to fall between the cracks and were hardly reflected in discussions, even at international forums. Whereas UN-Habitat estimated in 2005 that the current population of slum dwellers was expected to double by 2030. Many countries had chosen 'slum upgradation' as a central approach to deal with urban poor in which UN-Habitat emphasised on identification of 'finance gap' (Branwen Gruffydd Jones, 2012). But slum proliferation in the metropolitan cities increases complexities for an approach like slum upgradation as land is scarcely available. And Mumbai's transforming landscape, favoring the vision of world class infrastructure either resulted into slum evictions or rehabilitation which are giving birth to innovative policies. The decade of 1985-1995 is known as a period of significant change in redevelopment and resettlement policies and practice in the city. In the early 1900s, Mumbai's

booming real estate and economy created new demand for urban land among the local, middle and upper classes and elites (Banerjee- Guha 2002; Nijman 2000). Increasing foreign capital flows, opportunities and earning aspirations attracted elite desires for a city with world-class transport infrastructure, leisure, and upscale residences (Fernandes, 2004). This scenario created an affordable housing crunch for urban poor. This wave of neo-liberalised vision facilitated slum-clearance by leveraging the market to resettle the urban poor. So, the market would create a 'win-win' solution, addressing housing for the poor and redevelopment desires for the upper classes. However, redeveloping slums could not serve equitable benefits to all slum dwellers, it was beneficial for evicted slum-dwellers who could furnish documentary proof of residency in Mumbai prior to the 'cut-off date' of January 1, 1995. Later, a newly created slum rehabilitation policy SRA, based on 'market oriented model' had offered incentives to private developers to build tenements for slum dwellers free of cost (Sapana Doshi, 2013).

## FREE HOUSING- AN EFFECTIVE WAY?

### A Case Study

In Mumbai, Free housing is a type of a housing stock, generated by the state government to deal with the urban sprawl caused by slums in the form of mainstream housing units crossed subsidised through a profit making tool as a sale component. In 2012, Columbian government had also announced a 'free housing' policy for the urban poor, that would provide free homes to 1,00,000 families every year. Over the years, Columbian government had taken efforts to address adequate housing for poor families includes: rent control, building public housing, subsidised interest rates, offering subsidies for buying homes, rental vouchers, slum upgrading. These approaches never managed to solve problems of adequate housing solutions. (Gilbert, 2001; UN-Habitat, 2011a). Every government in Latin America, and many beyond, is convinced that the only house worth having is a home of one's own (Alan Gilbert, 2014).

During 1948, Latin American President Mariano Ospina was arguing that 'home ownership made people feel secure and more at one with society.' Home ownership being an official policy in Columbia benefits the govt. in two ways: first, it stimulates the construction industry which is directly helpful

<sup>1</sup>Alan Gilbert: A researcher and his area of research is urbanisation and poverty in developing countries like Latine America and South Afrca

<sup>2</sup>Slum upgradation: Includes improvement of physical infrastructure, access to the municipal basic services, household upgradation and strengthening tenure security.

<sup>3</sup>Market oriented model: Market oriented model refers to debts and equity investments which enables capital flow in the market.



in booming real estate and second, it consolidates a stake in society and is helpful to win votes. Apart from that there were four main factors behind this decision (Alan Gilbert, 2014): (a) Displacement by using violent means; (b) Displacement due to conditions created by natural disaster; (c) The ineffectiveness of subsidies and credit; and (d) Politics.

If we evaluate these scenarios in the context of Dharavi, we will be able to relate the consequences of these situations. As mentioned above, the research had examined Mumbai's scenario by a vision of a World class city narrating the need of resettlement to address slums. In 1985, the PMGP scheme which was an initiative by Prime Minister Rajiv Gandhi had set the benchmark for initiating the redevelopment process in Dharavi. To initiate the scheme, the former Prime Minister had sanctioned Rs. 100 crore for the improvement of infrastructure and housing known as Prime Minister's Grant fund for the whole island city of Bombay, out of which 1/3rd part of funds were reserved for Dharavi. The agenda of the scheme was to minimise the relocation, encourage them to contribute financially and work as co-operative housing societies by taking responsibilities of design, construction and maintenance. But this scheme could not give effective results as the beneficiary could not afford the prices of

homes, was not cooperative because of trust factor or lack of knowledge; there was also a delay in accessibility of funds and subsidies. This resulted into poor housing delivery and piecemeal development proved hard to maintain sustainability (Vinit Mukhija, 2001; Bishwapriya Sanyal, 2001; Rohit Jagdale, 2014).

Lately this scheme had evolved through its responses and today it is known as SRA scheme. SRA allows flexibility to carry out self-help redevelopment as well as developer oriented development. So, a community as a 'co-operative housing society' can also develop their land or they can appoint an external actor or an NGO or a contractor, as per the will of the community. The entire land of Dharavi is so huge that it opens out many complexities like Land politics as it is located on a prime land, community internal disputes and divergent aspirations of stakeholders etc. So, it requires a tailor-made operational model which can understand and will be able to deal with such complexities.

### DRP Goals

Dharavi redevelopment project is a land use proposal sanctioned by the Government of Maharashtra in 2003-2004 aiming to contribute towards 'World Class City'. (Dharavi Notified Area: Planning Proposals 2016) The project

is providing cross-subsidised housing which is also known as 'free housing', upgraded high-rise housing, better services and infrastructure to the slum dwellers. But residents had rejected the proposal through a protest (Vandana Baweja, 2015) and demanded for involvement into the planning process to safeguard their livelihood, provision of job opportunities in case of shutting polluting industries and had shown aspirations for bigger homes, zero maintenance as now they would be paying a minimal amount as a rent. (REDHARAVI, 2010). The spatial characteristics of Dharavi like living spaces, workspaces, storage spaces, everyday activity spaces are peculiar in nature. (Kalpana Sharma, 2000) So, DRP should bring light on these characteristics of Dharavi and give flexibility to obtain community responsive spaces. Vandana Baweja says, 'The project is emblematic of class welfare over architectural typologies, urban space, urbanism, and the role of the state in making world class cities.' If we look into the larger vision of a 'World Class City', it aims to focus on increasing Mumbai's economic growth to make Mumbai as a 'vibrant international metropolis' comparable to world class levels while aiming to provide quality of life to its citizens (A Bombay First – McKinsey Report, 2003). So, the target is to make Mumbai

internationally recognised through reducing the 30% existing slum population of the city.

Through adopting these ideologies of World Class City, DRP had developed an agenda of reducing slums by providing cross subsidised free houses to the eligible slum dwellers and higher FSI, higher incentives through special guidelines for DRP to make fatter profits through private sector involvement by bidding processes. At the core of the battle, Dharavi Redevelopment Project is a cultural conflict over urban citizenship and what an ideal city should be like (Vandana Baweja, 2015). This way, the project leaves 67% of the resident's non-eligible to re-house, creating the question over urban citizenship.

The discourse of making cities globally comparable is leading towards conflicts in the social environment of urban poor. As an urban designer or planner, one needs to develop sensitivity towards the spatial and social ground realities for the urban informal fabric. In today's context, real estate prices are increasing so high that there are no affordable housing options left in the city for these urban poor and this situation hits the major metropolitan cities in the country. So, either they get evicted from the city by the state or through gentrification

they find other options. One can see so many results of slum cleaning that are creating a social dilemma. For instance, mill workers and slum dwellers from the central areas of Mumbai show 'class-cleansing' meaning after terminating their employment, they have had to face pressure from their landlords to leave. So, many tenants had to buy homes outside Mumbai far from their workplaces with options of other slums or apartments, in accordance with their affordability (Judy Whitehead; Nitin More, 2007)

### Need for affordability

Why do we always believe "cleansing" is an appropriate option? Why can't we think of affordability through the lens of the urban poor especially when we know cities can't work without various classes and sections of society? For example, Dharavi's informal economy serves as a parallel economy for formal industries. There are slums in Kolkata that serve a parallel economy to Leather and textile industry. If we could succeed to find ways of affordability in the urban context and provide them better housing conditions sustainable in nature, we can make Mumbai sustainable for elites as well as for the poor.

The London plan had identified the need of housing supply through the research conducted by the state. It had come up

with a solution for the pressing housing supply and limited land availability. The state has given four housing solutions for eligible households whose needs are not met by the market. These are:

- Social rental housing: Owned by the local authorities or private registered providers for which guideline target rents are determined through the national rent regime.
- Affordable rental housing: Based on affordable rents on agreement basis for eligible tenants.
- Intermediate: This criteria is available for sale or rent, but above affordable rent. These can include shared equity as shared ownership and equity loans, low cost homes for sale and intermediate rents.
- Market housing: This includes private for rent or sale where the price is set in the open market. (The London Plan, 2016).

The affordability should be measured by income based criteria and appropriate affordability analysis as this consonance will ensure a fair distribution of housing stock. The bright side of above criteria are emphasis on formally developed social housing which are tailor-made for multi-income groups. Mumbai's redevelopment model had adopted a 'cut-off date' for evaluating eligibility and creating complexities for

the case of Dharavi as well as for slums in the city, where only ground structures were counted in the 'MASHAL' - an NGO's survey, which did not give a clarity on how many families were residing in Dharavi. So, this is a lacuna in analysing affordability as well as deriving the exact need of housing stock.

## GROUND REALITIES OF SPATIAL DEPENDENCIES

Dharavi did not emerge yesterday. It existed since Mumbai was known as Bombay, in the 1800s. There has been a considerable gap between 'legal' and 'illegal' but this place has also been a hub for different communities living together. One should look inside Dharavi's ground realities to understand and see that Dharavi is more than just a slum. This also applies to many other slums in the country which are unnamed. The report 'Dharavi-Ground up' by Amita Bhide opens up various realities that coexist in Dharavi relating to spatial characteristics and people. The research is a collection of interviews of different communities that can give us a glimpse of life in Dharavi. Dharavi being a land of diversity of different ethnic and religious groups developed diverse earning options as livelihood which often requires deep attention to understand this

mixed nature of Dharavi. Amita Bhide's report draws examples of various earning groups and communities to understand deeper connections with the space. One of the examples is that of the broom makers, a nomadic tribe whose traditional occupation is broom making and begging. This community migrated to Bombay in 1930 after a drought in Karnataka from where they originally hail from. The community settled in Dharavi for shelter and continued their livelihood of broom making over the years. The community improved their conditions financially as the younger generations believe in securing their jobs in private and government sectors where they earn little but ensure adequate lifestyle. The older generation believed in continuing their traditional livelihood. Thus there is a difference in perception between the two generations creating possibilities of transformations in livelihood and living conditions. These two generation gaps also reflected in aspirations of redevelopment, as older ones believe the redevelopment vision can cause a loss of their livelihood while the younger ones aspire to stay in apartments in order to enhance their life and be recognised in the society.

The example of papad makers gives another dimension

to understand the need of livelihood. Women who are constantly engaged in papad making over the years in Dharavi, believe in stabilizing the household economy which is acting as a supporting income to run the house. Their views were contradicting the ideologies of redevelopment as open spaces would squeeze the papad making activities and threatening their supportive income earning capacity.

The recyclers of Dharavi have achieved growth in their businesses over a period of time. In spite of growth and opportunities they do not aspire the occupation to move to the next generation (Amita Bhide, 2013; Kalpana Sharma, 2000). The social groups and their livelihood activities would differ according to their needs and aspirations developed over a time period. As an urban thinker, one must understand to give a thought over the community's spatial necessities and desire for quality of life. To understand these needs and promote the quality of life, the groups within the communities can act as a development promoter to cater those needs.

## CONCLUSION

The major reason for the complexity of Dharavi redevelopment scenario is the number of people residing

<sup>4</sup>Amita Bhide: A Professor and a researcher deeply involved in the issues of urban poverty, livelihoods and advocacy from Mumbai and also involved in various social movements.



in Dharavi. The survey by MASHAL had tried to give a number scenario which could not cater the actual number of households in Dharavi because of policies and lack of knowledge regarding the built fabric of Dharavi. Over the years, various proposals and housing solutions were put forward by different experts which had tried to solve the problem of making cities slum-free, which are the larger level strategies that do not acknowledge the urban poor on a deeper level. So, there is a need to go deep down into the living pattern of Dharavi residents. There is a need to plug in the formal role of an NGO or NGOs to go on the deeper level understanding of community needs and to gain the community's trust. But the model needs stronger strategies through developing the survey techniques which can cater the numbers that should be inclusive of eligible and non-eligible both. This would help to understand the influx of people over the years and help to create vision that would be more sustainable in nature.

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# HOUSING ASPIRATIONS OF RESETTLED COMMUNITIES THROUGH A GENDER LENS

-An Analysis of Drawings by Women from Perumbakkam in Chennai, India

**DR. ALONSO AYALA**

**DR. SUNITHA DON BOSCO**

**DR. MAARTJE VAN EERD**

**MR. C. VELAYUTHAM**

**In the workshop the researchers wanted to create an opportunity for women from Perumbakkam to express their views and needs in housing, and explore through their drawings the performance qualities of their built environment.**

*Key Words: Resettlement & Rehabilitation, gender lens, art-based research, dream house, Perumbakkam resettlement site.*

*Dr. Alonso Ayala (ayalaaleman@ihs.nl) & Dr. Maartje van Eerd (vaneerd@ihs.nl) are Assistant Professors at IHS, Erasmus University, The Netherlands.*

*Dr. Sunitha Don Bosco (sunithadon@yahoo.com) & Mr. C. Velayutham (cvtrainer@gmail.com) are Assistant Professors at DMS, Anna University, Chennai, India.*

*Are the urban poor involved in the design of resettlement projects in India? A river restoration project and disaster (flood) rehabilitation program will eventually lead to the displacement and resettlement of an estimated 60,000 poor families or roughly 200,000 people living in the slums on river banks of the city of Chennai in India (Whitcomb, 2020). The Perumbakkam resettlement site is situated in the suburbs of Chennai city, with an estimated 25,000 housing units. This project is an example of a very large housing project by TNSCB which led to a concentration of urban poor in one location. The Perumbakkam resettlement project came under heavy criticism for its failure to involve the impacted communities especially women in the design, development and implementation of the project. This paper presents an analysis of a participatory drawing exercise where resettled women from Perumbakkam were invited to draw their dream homes. An analysis of these drawings helped us to understand the housing aspirations of poor resettled women. It is also a reminder to various stakeholders of the importance of community participation, and particularly of women in the design, planning and implementation of resettlement projects.*

## INTRODUCTION

Adequate housing is the foundation for creating sustainable communities and human settlements. It enables people to be productive, healthy and contributes to have access to education, which are all fundamental preconditions for human development. The following five principles determine housing adequacy: availability, accessibility, affordability, acceptability and adaptability. The achievement of these principles determines the success of housing policies and interventions such as resettlement sites. When these principles guide a development process which strives to fulfil housing needs as a fundamental human right it leads to housing justice (Ayala, van Eerd and Geurts, 2019).

Sustainable human settlements are a dimension of housing adequacy that can be analysed by looking at their performance qualities. For instance, a human settlement performs well when there is a synergy between the human-made and the natural environment, when movement systems are integrated (i.e. from pedestrian movement to public

transport to private means of transportation) allowing for physical accessibility and proper mobility to access urban infrastructure and facilities. Access to employment opportunities, convenience, equality of access to urban services, safety and the understanding of open public space as the highest level of social infrastructure are also part of this notion of well-performing and sustainable human settlements (CSIR, 2005).

## HOUSING ADEQUACY OF CURRENT RESETTLEMENT PROJECTS

Resettlement projects are often human settlement interventions which target poor communities, that often further deteriorates the living and livelihood conditions of those resettled. The solution thus becomes a problem, sometimes bigger than the one it intended to solve. This situation has been researched across the Global South for years. According to de Wet (2009) resettlement results in serious and often permanent, socioeconomic and cultural impoverishment, and causes stress and trauma physically, economically, and socio-culturally. It also leads to what Cernea (2000, 2008) famously referred to as “impoverishment risks”. Overall it leads to a wide variety of negative impacts and takes years for people to recover

from.

As the trend for resettlement is increasing, and increasingly going towards the fringe of urban areas, the negative impact is likely to increase (van Eerd, 2016). In India, resettled communities from many different localities are often moved into enormous apartment complexes, which often lead to social tensions. These resettlement sites often lack adequate access to services, employment, infrastructure and transportation and it negatively impacts social assets (Coelho, 2016). These sites tend to reproduce poverty, crime and the stigmatisation of vulnerable groups (van Eerd, 2016). On top of that, due to the fact that inferior quality construction materials are often used, these sites often quickly deteriorate. The Perumbakkam resettlement site is a clear example of this.

## THE GENDERED IMPACT OF RESETTLEMENT

The impact of resettlement is not homogeneous. With regards to gender, many researchers have already proven that women and children suffer more from it than men. Unfortunately, despite all this empirical evidence, most resettlement projects suffer from “gender-blindness” (Mehta, 2011, p. 37). In many cases, women are the first members of the families adversely affected by the socio-economic

consequences of displacement. They are also often impoverished much faster than men are (Terminsky, 2015, p. 442). They are disproportionately affected in terms of access to employment (Koenig, 2014; Bisht, 2009; Sikka and Mathur, 2018; Coelho, Venkat and Chandrika, 2013). Apart from losing a steady income, resettlement also has intangible impacts on women. The entire rearrangement of their social, cultural and occupational spaces results in increased vulnerabilities, insecurity, and loss of social and cultural cohesion (Bajpai and Gautam, 2018).

An understudied aspect is the fact that when women have to start commuting to work, they are exposed to safety risks while travelling, for example when bus stops are located in unsafe areas, when they have to travel early in the morning or late at night or have to travel on crowded buses. A few studies have been conducted showing that women perceive that it is less safe in resettlement sites due to design and maintenance issues, the presence of illegal activities and increased domestic violence (Anand and Tiwari, 2006; Desai, Parmar and Mahadevia, 2017; Msasi, 2018).

## INTRODUCTION TO PERUMBAKKAM

Perumbakkam is the largest resettlement site in Asia with the



population of 14,000 families, but it will, when finalised, in total rehouse 100,000 people (Peter, 2017). It is located more than 30 kilometres away from Chennai city centre which is situated outside the Greater Chennai Corporation limit. Research in Perumbakkam has shown that those resettled there face a multitude of problems such as: (i) Lack of economic opportunities in - and in the vicinity of Perumbakkam; (ii) Those continuing with their previous jobs have to travel long distances; (iii) Lack of regular bus services to Chennai city; (iv) Absence of support for capacity building; (v) Absence of support to find alternative employment; (vi) Lack of education in the vicinity; (vii) When children continue in their old schools they have to travel two to three hours a day; (viii) Many school dropouts who are vulnerable for illegal activities; (ix) Women and girls feel unsafe; and (x) Some children died because of accidents in the buildings (Peter, 2017).

## INTRODUCTION TO THE PROJECT

Several visits to the resettlement site of Perumbakkam from early 2018 onwards clearly indicated that the residents had strong opinions regarding the design of the resettlement site. Inspired by research that uses drawings as a methodology to explore and understand the

complexity of human experience (Guillemin, 2004), and to capture emotional issues which might be difficult to verbalize (Vince, 1995), the researchers decided to implement a “housing aspirations drawing workshop” with female volunteers from Perumbakkam to explore their perception of what constitutes their “dream home”.

In December 2018, a drawing exercise was conducted in a workshop titled: “Participatory Media for Women in Resettlement” for women from the Perumbakkam resettlement site. The workshop was part of a documentary film project that investigated the impact government-led resettlement practices had on women. The project combined the expertise of the Department of Media Sciences (DMS) of Anna University in Chennai, India and the Institute for Housing and Urban Development Studies (IHS) of Erasmus University in Rotterdam, the Netherlands.

In the workshop the researchers wanted to create an opportunity for women from Perumbakkam to express their views and needs in housing, and explore through their drawings the performance qualities of their built environment. The researchers wanted a visual representation of what the women lacked and what they wanted in their resettlement site. For that purpose we asked them

to draw their “dream home”. The researchers’ intention was also to present their drawings in the documentary. The experience and the results of this participatory exercise are presented in this article.

## Methodology of art-based research and the use of drawings as a method for analysis

According to Woodhouse (2012), reliable data can be elicited from participants, especially women on their built environment experiences through drawings. Van der Vaart et al., (2018a) state that “usage of creative and arts-based research methods, produce multifaceted knowledge.” As art is context dependent, it has the ability to act as a binding or dividing influence on the community (van der Vaart et al., 2019). It has the potential to help researchers understand people’s interpretations of, and dealing with place change (van der Vaart et al., 2018b).

Therefore, the methodology chosen for the research was a drawing workshop aided by students who acted as co-drawers of participants’ views on what would be their “dream home”. It is important to highlight that in this type of research, participants usually draw themselves. Considering the target group and the context, we decided to provide women with help in drawing which is explained below.

The main objective of the drawing workshop was to explore women's understanding and perceptions on what constitutes adequate housing. The workshop was conducted at Anna University with the participation of 18 women from the Perumbakkam Resettlement site, 25 students of the Department of Media Sciences (DMS) and researchers from DMS and IHS. The participants were selected through the help of a Community Based Organisation from Perumbakkam.

### **Preparations, procedures and implementation of the Workshop**

It was expected that the female participants from Perumbakkam would not be used to this type of participatory exercise and might not be comfortable in participating in a drawing workshop within a formal educational setting. Therefore prior to the workshop a group of DMS students were trained to help in the workshop. The students were given a drawing exercise the previous day to prepare themselves for the workshop. They were made to draw possible types of buildings (houses, hospitals, shops, etc.), common household items (fridge, washing machine, TV, etc.), transport vehicles (bicycle, motorcycle, car, bus, etc.) and community places (schools, playground, restaurant, police station, etc.). They were also

briefed about the do's and don'ts of the exercise. The students were strictly asked to not interrupt the thoughts of the participants by asking too many questions or by directly or indirectly providing them with ideas. They were asked to just follow the instructions given by the female participants and facilitate the process rather than incorporate their ideas in the drawings.

The two-days workshop started with an introductory talk on the purpose of the workshop. The researchers gave the participants one main instruction, namely to imagine and draw, with the help of a student, their "dream home", bearing in mind what was lacking in the resettlement site. This guidance gave a focus to women on what to represent in their drawings and at the same time keeping it sufficiently open to include all they wanted.

After five minutes of meditation, the student assistants were called upon to join the women for the drawing exercise. The student assistants were introduced as a group, and their roles were explained to the participants. Student assistants were not assigned a specific participant, they just went around randomly and the participants were able to choose their assistant. The participant and their drawing assistant introduced themselves to each other, and then seated themselves comfortably. The participants were asked to

narrate their visualisation of their "dream home" to the assistant.

Each participant was given a workshop kit which contained a pack of colour sketching pens, a pack of colour wax crayons (oil pastels), a pencil, an eraser, a blue pen, and a notepad. Instructions were given to the assistants not to intervene or suggest anything to the participants. They should just draw what the participants verbally told them to draw. From objects to colour selection, the resulting drawings were based on the instructions given by women to assistants or the participants' own works.

Even though the participants were given the opportunity to draw themselves, most of them opted for the help of the assistant. Only one participant opted to colour her drawing herself. Although she was aided by an assistant to do the basic sketch and then she coloured it herself. The drawing exercise lasted 45 minutes.

Woodhouse (2012) argued that in order to promote validity and reliability of the drawing methodology, semi-structured interviews could be used to complement the information from the drawings. This did not take place, instead at the end of the workshop the women were given the opportunity to explain their drawings. A few women came forward to discuss their drawings with the group. They

verbally explained their dream home and the facilities they aspired to have near their homes.

The oral presentation of their drawings reconfirmed a few main elements:

- The participants wanted single detached houses on their own plots, instead of vertical structures;
- The participants wanted greenery such as trees, parks and gardens; and
- The participants wanted proximity and access to utility facilities like hospitals, schools, shops, ration shops, bus stops and children's playgrounds etc.

## INTERPRETATION OF DRAWINGS

“What I like about drawings, as a method, is their simplicity. All you need is paper and a pencil or pen. But if there is simplicity in collecting the data, there is complexity in the interpretive process” (Mitchell, Theron and Stuart et al., 2011, p. 2). In order to conduct the analysis it is important to understand how the drawings were generated, the conversation that occurred around them and what context brought them into being (Woodhouse 2012).

Reflecting on the drawing workshop one of the assistants mentioned that: “While expressing their thoughts about their dream house, some

participants talked not just about their dream home, but they also compared their house in the previous neighbourhood with their current apartment life and its neighbourhood.”

Examples of that mentioned by the participants were:

*One participant expressed that in the resettlement tenement (Perumbakkam) where they currently live, they have the kitchen near the bathroom cum toilet entrance, which she found problematic. She wanted the kitchen not to be next to the bathroom in her dream house.*

*Another participant expressed that in the neighbourhood where she resided before, she had a bathroom cum toilet a small distance from the house and she did not like the attached bathroom setup in her Perumbakkam apartment, so in her dream house she wanted a bathroom that was not close to the other rooms.*

*Another participant expressed that she wanted to live within Chennai city limits and she did not like her current house because it was very far from Chennai city. So, she wanted her dream house to be built inside the Chennai city limits.*

*One participant expressed that her relatives used to live nearby in their previous neighbourhood and her children often used to go to their house to play. But after the resettlement, her relatives were allotted a flat in a faraway block, so she was not able to send her children there to play and her children were*

*unhappy not being allowed to play with their relatives anymore. So, she wanted her dream house to be near to her relatives' house.*

Many of the participants expressed the same grievance about not having nearby bus stops, hospitals, schools, parks and groceries shops. So, they wanted all of those facilities close to their dream house.

The analysis explored the main elements elicited from women's explanations at the end of the workshop by performing a qualitative comparative analysis of the drawings themselves. The analysis was organised using as the guiding structure the main aspects which were derived from women's explanations of their drawings. This was done to minimize any wild subjective interpretations of the drawings.

The first step of the analysis consisted of the broad categorisation of the drawings, and the enumeration of the different items represented in each drawing in order to draw some conclusions regarding what the participants considered important for their ideal home and built-environment.

Two broad categories were identified. The most frequent category (16 of N=18) represented a house surrounded by one or more urban facilities. The second category of drawings just represent a house (2 of N=18). Tables 1 and 2 show the



frequency of the diverse elements which were identified in the drawings.

*Table 1: Frequency of house unit related elements*

Elements related to the house unit	Frequency (N)
Single detached house	18
Garden	18
Roof terrace	10
Fences or protective walls around the house	9
Car and/or motorbike	6
Water tap	4
Private garage	3
Bathroom / toilet	2
Other (fire extinguisher, extended family houses, seaside view, specific house spaces, items such as a garage, Pooja room, water tank on top of the house, clothes hanger, washing machine, dustbin and a fan)	1

*Table 2: Frequency of surrounding environment related elements*

Elements related to the surrounding environment	Frequency
Road	14
Hospital	13
School	12
Grocery store / market / shopping facilities	11
Playground for children or park	11
Bus stop	8
Street lights	4
Job / office	4
Ration Station/shop	4
Temple	3
Pharmacy	2
Other (CSR course, beach, seaside view, city centre, police station)	1

### The “dream home”

The participants clearly expressed through their drawings their desire for a single detached house. All of them drew a house sitting in a plot surrounded by a garden (See figure 1). The houses they lived in the slums from where they were displaced and resettled were single storey structures.

In many instances the house that was drawn had more than one floor, with distinct architectural features which were common to housing typologies found in wealthier neighbourhoods. A recurrent feature of the houses that were drawn was a roof terrace (10 of N=18). One of these terraces contained a large water tank and most of them contained

flowering plants (See figure 2).

Another common feature of the house that was represented in half of the drawings, was the existence of some sort of fence or protective wall surrounding the house, outside of which urban facilities were distributed (See figure 3).

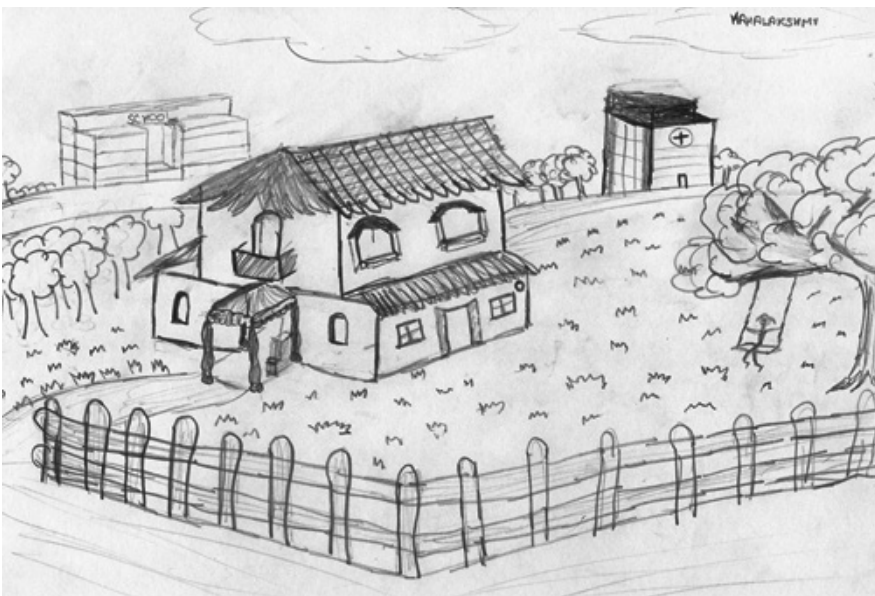
Figure 1: The dream house is a detached house surrounded by a garden



Figure 2: Examples of distinct architectural features of the dream house



Figure 3: Urban facilities around the “fenced” dream house



also highlighted some specific furniture and appliances which included a sink, a gas stove, a fridge, a TV, a sofa, a dining table and a kitchen table. It also showed an outside bathroom, backyard, garden, external stairways leading to a balcony or roof terrace and a fence (see figure 4).

### Greenery

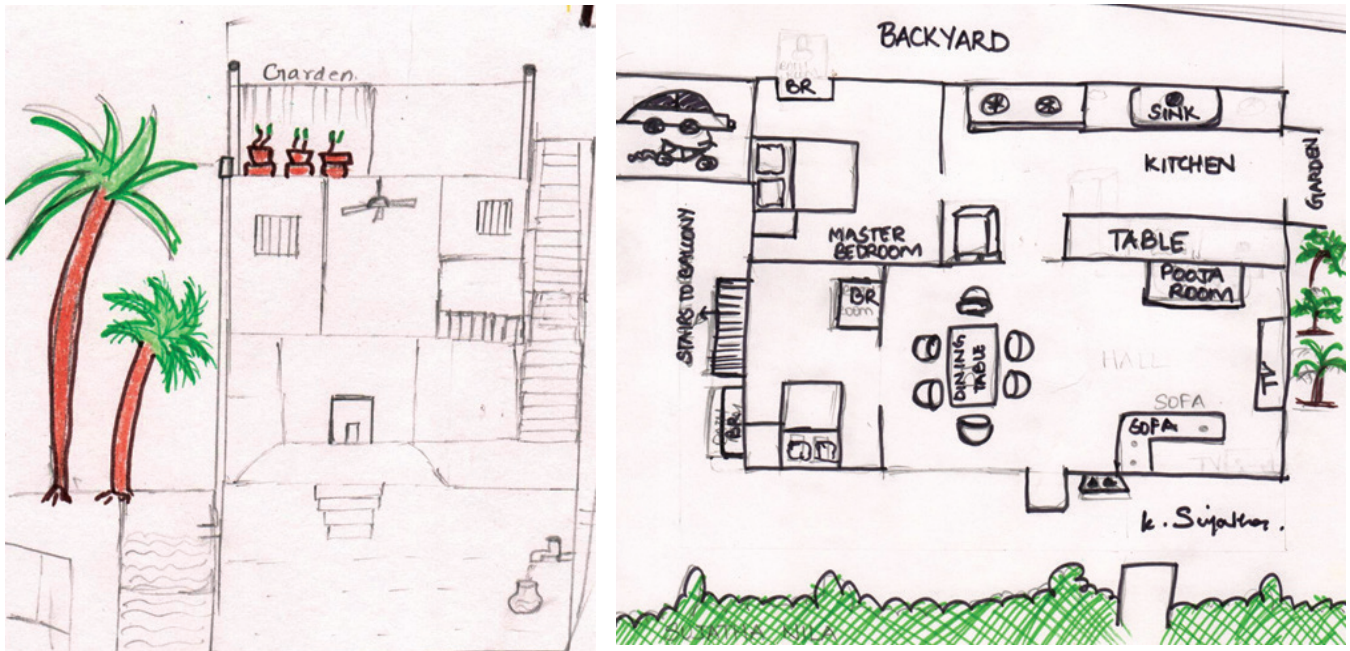
All of the respondents expressed in their drawings their desire to have a garden surrounding the house with trees, flower pots and in many instances a children's playground which were graphically represented by drawing playing equipment such as balls and swings. A playground for children or a park was a recurrent element in more than half of the drawings (11 of N=18). The majority of drawings depicted the surrounding built environment by including roads, markets, schools and hospitals, and it was noted that they did not include greenery in those areas. The greenery was clearly related to the area surrounding their houses which included greenery in the form of roof terraces (See figure 5).

### Urban facilities and infrastructure

More than half of the respondents included in their drawings the proximity of the dream house to a number of key infrastructures such as roads (N=14), hospitals (N=13), schools (N=12), some



Figure 4: Two examples of the spatial arrangement of the dream house. To the left a cross section of a house and to the right the floor plan of another house.



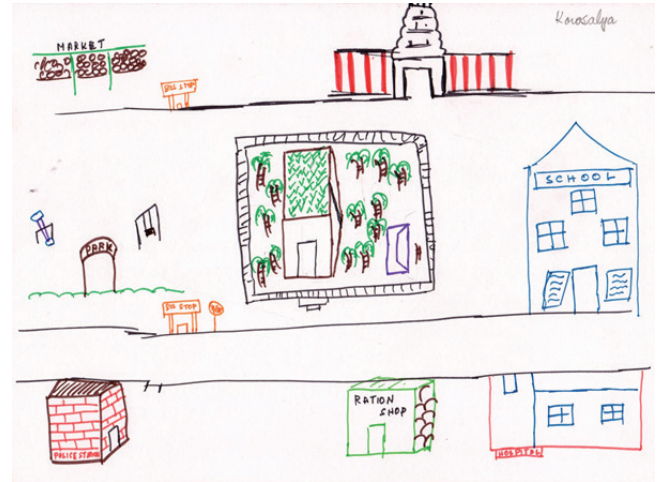
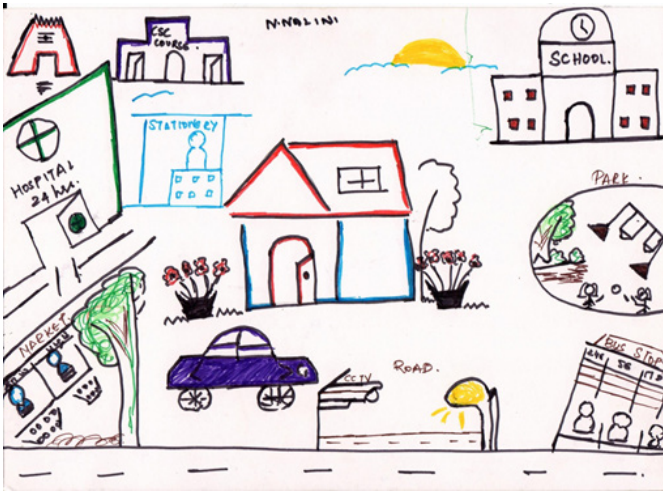
sort of shopping infrastructure such as a vegetable shop, grocery store, stationary and shopping complex (N=11) and the parks were mostly depicted by a children's playground (N=11) (See figure 6)

Figure 5: Gardens and greenery surrounding the house often include a children's playground





Figure 6: Almost all drawings included some sort of urban infrastructure connected to the dream house



## CONCLUSION

The drawing exercise helped to understand the housing aspirations of women in Perumbakkam. This understanding is crucial not only for policy makers to design targeted policies which fulfil people's needs in housing, but also for designers of resettlement projects who need to consider such needs, adapt their practice to the reality of the people, especially of women and children, and replace the "one size fits all" mentality.

As resettlement practices still suffer from gender-blindness (Mehta, 2011) and therefore the impact for women is even worse than for men, it is crucial that in the design, implementation and monitoring of the outcomes of new projects communities are well represented and particularly women are included in the whole process. Mounting empirical evidence can guide new projects to prevent mistakes from being made again at the expense of affected communities.

Housing is complex and dynamic. What has become very clear from this simple drawing exercise was that the housing solution that had been provided in the resettlement site of Perumbakkam was not an ideal one. It did not match with what the women considered their dream home. Their housing needs did not include the actual attributes of the housing units such as number of rooms, the location of the toilet and having a garden, but they also included the neighbourhood attributes, such as access to health and educational facilities and shops.

At a macro level it was also clear that the dream house and neighbourhood needs to be adequately connected to the city, thus providing access to employment opportunities and higher hierarchy urban facilities such as hospitals, office buildings and shopping malls. Having convenient

public transport and connecting roads to access the city, either for employment opportunities or urban infrastructure, were verbally and graphically expressed as being important to these women. This highlights once again the importance of where these settlements are located and confirms that one of the main reasons for their failure is that resettlement sites are usually located far away from the city where land is cheap and access to and from other areas is bad.

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**RELEASE OF 'SHELTER' PUBLICATION: APR – MAY 2020, VOL. 21, NO.1**



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# OUTREACH AND PERFORMANCE OF CO-LIVING AS A NEW RENTAL HOUSING FORMAT

-A Case of Noida & Gurugram

MR. TITAS BHOWMICK  
DR. SEJAL PATEL

**Co-living has entered the market as a new concept to address the issue of rental housing among the millennials mainly constituting students and working professionals. This paper explores the unexplored theme of the viability of co-living spaces from the perspective of the supply mechanisms and consumers.**

*Key Words: Rental Housing, Co-living, Bachelor's housing crisis, Rental yield, Gurugram, Noida*

*Mr. Titas Bhowmick (titasbhowmick@gmail.com) is Post Graduate, CEPT University. Dr. Sejal Patel (sejal.patel@cept.ac.in) is Professor, CEPT University, Ahmedabad.*

*Rental Housing, typically characterized by high risk and low yield, has largely remained on the periphery of Housing policy and market in India and many other developing countries. The policy focus is on homeownership, irrespective of constraints in terms of small land area and a huge population to cater to. While social rental housing attracts some attention in Housing policy as it caters to the lower-income segment, new formats of rental housing catering to middle and higher-income segments are emerging in the market and should be bolstered by strategic policy support. Youth who are migrating to metro cities while seeking better economic and living opportunities, frequently face rental housing shortage. To an extent, this shortage is addressed by new formats of rental housing such as co-living rental spaces. This paper attempts to understand the characteristics, business model, and effectiveness of the supply mechanisms in this segment in two select cities i.e. Noida and Gurugram which attract a significant youth population with the highest concentration of white-collar jobs in Northern India. This Study demonstrates that despite small market presence these formats are quite effective in outreach, risk management, and yield, especially in the context of the cities under study. The working model of these formats can also be studied in the context of several other metro cities witnessing high rental demand.*

## INTRODUCTION

Increasing population growth and migration to cities coupled with limited serviced land availability are key challenges to the realization of 'Housing for all' policy rhetoric. As per the United Nations Department of Economics and Social Affairs (2018), 34% of the Indian population lives in urban agglomeration due to diverse economic opportunities offered by the city. The economic opportunities trigger migration which is one of the three reasons (Natural Growth, Migration, Administrative Boundary Expansion) of population growth.

Further, migration data show that as per the United Nations definition of Youth i.e. 15-34 years age group constitutes 37% of the total urban migration in India (Census of India, 2011). 'Job opportunity/employment' accounts for 17% and 'moving with the household' which is mostly due to employment has the highest share of 25% among the reasons for urban migration. The large-scale migration to cities further exacerbates the housing crisis. Currently in

Table 1: Urban Migration in major metro cities in India (2001-2011)

State	Major urban Centers	Total Urban Migration between 2001 – 2011 (In Million (Mn.))
Maharashtra	Mumbai, Pune, Nagpur	13.5
Gujarat	Ahmedabad, Surat, Vadodara	7.3
Andhra Pradesh (Before Telangana Division)	Hyderabad, Visakhapatnam	5.9
West Bengal	Kolkata, Howrah, Asansol, Durgapur	5.7
Tamil Nadu	Chennai, Coimbatore, Madurai	5.5
Karnataka	Bangalore, Mysore	4.2
National Capital Territory (NCT) Of Delhi	Delhi, Gurgaon, Noida	4.1

Source: Census of India, 2011

India different issues regarding housing like shortage, congestion, unaffordability, security, lack of choices, etc. are the focus of Policy rhetoric. However, as homeownership cannot address these issues singlehandedly the role of rental housing becomes imperative. The influx of young millennial (Table 1) population into the metro cities has made the crisis of suitable rental housing more relevant now than ever.

The concept of co-living has arrived in this context to meet the need of the migrating population in the metro cities. The co-living spaces are argued to offer the following advantages vis a vis conventional rental housing:

#### Convenience

- Co-living companies work on a digital platform which is a hassle-free option for millennials.
- Some provide not only bed and white goods but also services, which are again hassle-free experience for the

tenants.

- Others who do not provide services, help in all other aspects of renting a place, without any leg work on the part of the tenant.

#### Affordability

- Rent is shared which enhances affordability for the tenant.

#### Security

- Most of the homes are well secured and agencies look after all the security concerns of the tenant in most of the cases.

#### Social Well Being

- Places are suitably examined for quality and in most cases designed tastefully.
- Some of them put stress on creating a community among the residents which is a key factor, considering most of the young people living there are staying away from family.

Thus, Co-living has entered the market as a new concept to address the issue of rental housing among the millennials

mainly constituting students and working professionals. This paper explores the unexplored theme of the viability of co-living spaces from the perspective of the supply mechanisms and consumers.

## LITERATURE REVIEW

The term 'Generation Rent' or 'Rent Generation' refers to the problem faced by the youth (age group 25–34 years) due to different kinds of stigmatization and marginality aspects (Cole et al., 2016). In UK the term 'Generation Rent' has gained popularity as it mirrors the way that more youth now live in rented houses as opposed to an owned house. The term likewise passes on the degree to which age-related divisions in the housing market are getting to be as noteworthy as longer-standing residency divisions. Be that as it may, this portmanteau term covers a wide cluster of various housing conditions - from students, working professionals, and transient

family units to the working and non-working poor (Cole et al., 2016).

For working professionals, who are in the first phase of their career, who have migrated to a different city from their hometown for employment, who are mostly unmarried, who do quite a bit of job-hopping, whose job location is mostly not confined to one place and who cannot afford to buy a house at this moment, renting a house is a natural choice (The Guardian, 2017). Ordeals that they face while accessing rental housing are: a) Highly unorganized and non-informative market (Hammam, 2013); b) Inadequate Choices; c) Lack of cosmopolitan culture (Mishra & Mishra, 2018); d) Lack of ready to move options (The Guardian, 2017; e) Hassles to search for services like cleaning, cooking, laundry; f) internet connection, etc. (Hindustan Times, 2018); g) Discrimination Issues (Times of India, 2018); h) Brokerage issues (Mishra & Mishra, 2018); i) Security of Deposit Money (Mishra & Mishra, 2018); and j) Absence of clear terms and regulations in rental/ lease agreement (Mishra & Mishra, 2018).

In Indian cities, discrimination presents the greatest challenge to the millennial tenants. It is said that "About 80% of group housing and multi-story societies in Noida and Ghaziabad do not

allow bachelors, single women, and in some instances, pet owners, to rent flats" (Times of India, 2018). In Gurugram, "most societies are shutting doors on single tenants" as mentioned by a senior official of Flathood, a brokerage firm. He further adds that "With 75% of the tenant population in the city being single, there will be a huge demand-supply gap." (Times of India, 2018) To quote one of the founders of Nestaway "Our biases in renting are nothing short of remarkable too - age, gender, marital status, food habits, state of origin, religion, employment status, type of employment, sexual orientation, the way they look – it's so long that it is almost going into the satire space. By doing what we do today, we are killing aspirations, energy, and faith in reasonableness one home at any given moment. With the developing land costs in our urban areas, owning a house and not leasing is not a possibility for a larger part. Making it harder for inhabitants is out and out bad economics" (Economic Times, 2018).

The concept of 'co-housing' dates to Denmark in the 1970s (Larsen, 2019). However, it was in early 2000 when the concept of co-living started shaping up; and picked up a significant pace by the first half of the last decade (Robinson, 2017). Mariana Camacho explains that "More and more people are becoming location independent and working remotely both part-time and full time. The need for

flexible housing options is becoming more prevalent as well." "As more people migrate and move around the world, how can we rethink our living arrangements? How will real estate and architects adjust to the transient global citizen? If people are now more open to share their houses on Airbnb, get rides with strangers on Uber or Lyft, and work from coworking places, then why not live in a shared communal space?" (Camacho, 2016).

An article in Hindustan Times (2018), describes how new age hostels which are serviced apartments have arrived in the business in Indian cities. Another article in The Hindu (2018) supports the same in a more detailed and informative way. It also talks about the upcoming capital investment in the sector. A small group of start-ups, namely NestAway, Grabhouse, Homigo, SquarePlums, and FellaHomes is ushering a change in this business, ensuring a steady supply of quality rented houses at affordable prices to singles and families who flock to urban centers for study or work. They are also attempting to turn housing into a liquid asset class to provide better returns for investors. They call themselves asset management firms or home rental firms and take over the maintenance of the house, guarantee rentals, and provide easier terms and conditions for tenants (Mishra & Mishra, 2018). This segment has attracted the attention of international



private equity investors such as Tiger Global, Google Capital, SoftBank, NewsCorp as well as domestic investors such as Ratan Tata's RNT Associates and SAIF Partners, who have invested several million dollars (Mishra & Mishra, 2018).

From the websites of these companies i.e. Nestaway, Coho, Grabhouse, Homigo, SquarePlums, etc, it can be understood that in this new format of rental housing, apartments or bungalows are taken on rent and are serviced either by the rental agency or by the tenant. While room as an accommodation type has become almost obsolete with the growing culture of a formal relation between owner and tenant, single-unit apartments and buildings are the most favored scale of operation in these new formats while floors are targeted as future expansion format. Another very important feature of this new age rental format is that these players are all operating in virtual space and connected to their users via the internet, technology is playing a major role in these start-ups and their success.

With this context and articulation of the concept of co-living spaces, we pose the following questions:

- What are the characteristics and merits & demerits of co-living spaces from both supply and demand point of view?

- How does the operating model in terms of financial feasibility for co-living rental housing compare with conventional rental housing from the perspective of supply mechanism?

## RESEARCH METHODS

The research draws upon mixed methods i.e. qualitative and quantitative methods. Structured questionnaire surveys (sample size: 120) were conducted to gauge the perception and aspirations of tenants currently residing in the conventional rental format in Noida, Gurugram, South Delhi, and Dwarka and working in Noida and Gurugram. Strategic snowball sampling method was used for the survey. The selection criteria of the respondents were unmarried tenants in the age bracket of 19-35 years. Due to a 14% sampling error, responses from 103 people (86%) were considered for further analysis. To understand the supply-side perspective and business model, key informant interviews of senior management personnel of three co-living companies were undertaken. Additionally, rental housing data were mined from property consultant websites such as Magic Bricks, 99 Acres, Prop tiger, etc. After data collection, descriptive statistical and critical analysis along with financial feasibility were done from both supply and demand point of view.

## RESULTS & DISCUSSION

### Potential Demand Side Analysis

Among the 103 respondents, 55% are male and 45% are female; 39% belong to the 22-24 age category and 42% belong to the 25-27 age group. Income composition is quite varied across the respondents. The lowest monthly income is INR 25,000 while the highest is INR 150,000. While the lowest and the highest income groups have the lowest share, the monthly income range of INR 51,000 to 60,000 (19%) and INR 61,000 to 70,000 (22%) have the highest share amongst respondents.

In terms of occupancy format, both single (41%) and double (57%) occupancy are equally preferred among the respondents as per their affordability, whereas triple sharing is not considered as a very good option because of the lack of privacy; it is only considered when the rent is high or paying capacity is low. People prefer to stay in a group (93%) rather than in individual accommodation (7%) owing to various reasons such as affordability, sense of security, community living, etc.

In response to rating the current stay on a scale of 1 (low satisfaction) to 5 (high satisfaction), most respondents (31%) rated 3 i.e. moderate while 25% of respondents expressed

low satisfaction. Pre-identified issues were listed and were given as options to respondents to choose the top four negative attributes in their current stay; The options were: a) Issue created by society/neighbors (including legal hassle); b) Cleaning and hygiene (Garbage cleaning, housekeeping, etc.); c) Maintenance & repairing; d) Food quality; e) Price; f) Issue created by the landlord (including legal hassle); g) Restriction (admission restriction, curfew timing, etc.); h) Purchase of white goods; i) Safety; j) Location; k) Internet; and l) Others. Among these issues, the top four were: issues created by building society or neighbor; hygiene; maintenance & repairing; and food quality respectively while restriction; capital purchase; safety; location, etc. are placed at the bottom of the list. From the above findings, it is inferred that cleaning, maintenance, and food are prime issues in their current stay in conventional rental format. For choosing current accommodation, respondents placed maximum stress on freedom (no admission restriction and curfew timings) and less on service. Hence currently, though they are not facing many freedom issues apart from neighbors creating problems, they are facing severe service issues. About 90 – 95 % of respondents considered price and restriction over guest admission as the major deal-

breakers in the process of decision making for their current stay. This further substantiates the argument that freedom has been given maximum priority while services the least and the same has become a major point of concern in the current stay of the respondents.

Figure 1 depicts the percentage of monthly salary spent by respondents on house rent (conventional rental formats) currently and willingness to pay the same in the future for a serviced apartment that is situated in a preferable location and without strict restriction policy.

It is evident that people are willing to pay more for a serviced apartment in a preferable location with no discriminatory clause. The mean value of the percentage of salary spent on current rent is 22%, while the willingness to spend for a serviced apartment is 29%.

### Characteristics of Co-living Spaces: Supply Side Analysis

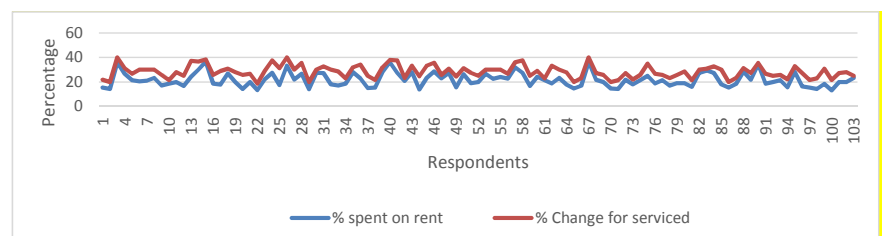
There are few companies currently operating in Delhi National Capital Region (NCR)

in the Co-Living rental segment such as Your-Space, CoHo and Nestaway, Fella Homes, Stanza Living, etc. Detailed data collection and analysis have been done for Your Space, Coho, and Nestaway. These startups have different business models but all of them have a common goal which is creating affordable, serviced, and lively rental stock and providing co-living experience. Based on the working model they can be divided into two categories viz. service provider and aggregator. The service provider model provides space and service to the tenants while the aggregator model only provides a platform with a hassle-free renting experience for both tenants and landlords. While Your Space and Coho are service providers, Nestaway operates as an aggregator.

### Service Provider Model: Your Space

Your Space business model is more of a modern-day hostel than of serviced apartment or co-living space. They take the property in a long-term lease

Figure 1: Percentage of current rent vs. Percentage of potential rent for a preferred unit w.r.t the respondent's monthly income



Source: Primary Survey



of 9-10 years. They do all the interior and the furnishing suitable to their brand design and the property is rented out while providing all the services including food.

Your Space properties are located in two areas in the Delhi NCR region i.e. Greater Kailash and Noida with a total of three buildings. They have 300 beds across these three buildings wherein the Noida property comprises of 50 beds. About 80% of their tenants are students and they have student-oriented restriction policies like curfew timing (which is relaxed for working professional) and strict guest policy. Rent agreement is done at the first instance while at the time of renewal, rent increases on a fixed percentage stated in the earlier agreement. Approximately 40% of the rent of each bed is shared with the owner, 10% is spent on the capital purchase done for furnishing the building, 15% is allotted for services including food, and 5-8% is used for miscellaneous purposes; which accounts for around 30% profit from each bed. Rent for the Noida property is INR18000 for one bed per month for twin sharing room. It results in an approximately 24% yield from that property (at average INR 5000/square

feet (sq. ft.). Property rate, of which around 11-13% goes to the landlord which is 5% higher than the rental yield of that area (8% at INR 33/sq. ft rental value). The rental yield of the Greater Kailash property is 13%. This format is profitable for both the property owner and the rental agency where tenants get safety, security, and services along with space. It is the student population, provision of all services, and security which is making this business model successful in low land price markets like knowledge park 3, Greater Noida. But as its success is not well tested in various locations and among different occupant categories, much cannot be inferred.

#### Service Provider Model: CoHo

CoHo promotes co-living and operates on an asset-light business model with a strong focus on the social experience of its residents. Typically, buildings are taken on lease from the asset owners on the revenue sharing model. It is ensured that all day-to-day necessary services like Housekeeping, Wi-Fi, Cable, Repairs, etc. are taken care of for the residents via its mobile concierge application. The monthly fee for a CoHo space on a sharing basis is typically between INR 9,000-13,000 with

all amenities included. This price includes the electricity bill for the common area and breakfast. The current volume of Coho is 990 beds in Gurugram, 10 beds in Noida, 500 beds in Delhi.

In Gurugram according to Census data, 83,781 rental dwelling units are present in Municipal Corporation plus Outgrowth area. As per the brokers interacted during primary survey, in Gurugram around 55% of the properties are rented to bachelors i.e. approximately 46,079 properties are rented to bachelors. Further, as per Census data, most dwelling units in Gurugram are in the 1 RK (one Room Kitchen) category. Considering two people living in a 1 RK  $(46,079 \times 2)$  92,158 is the maximum capacity of tenants staying in the region. In the past one-year, CoHo has successfully captured 1.07% of the market. However, this share is as large as 5-6% in select commercial districts. But it can be safely said that almost the whole market is unexplored at this moment.

CoHo invests in large properties, that are generally 7-10 years old, are in good condition, and can make room for 30-50 beds. These are properties that are difficult to lease out and manage by the property owners as it is challenging to rent out large properties. It is easier for the owner to tie up with a rental agency and bypass the hassle of



finding tenants and renting and maintaining the property. Rental agencies can make a profit out of the scale of economy and volume. Service charges become much lower when it's done on a bigger scale. About 40% of the rent of each bed is paid to the property owner, 45% goes to other expenditures like services. CoHo normally has a profit margin of 15%. According to CoHo personnel, at least 12-15% profit per bed is the key to keep the business floating. Pricing is done after all the cost estimation and price is kept slightly higher in season (March-July) so that in off-season price can be slightly adjusted without compromising the profit share. Location with high demand but comparatively low land price is more profitable in this business model.

This format is profitable for landowners because the rental yield in CoHo is 8-9%, out of which the owner gets 4-5% which is higher than 2-3% of rental yield in that area. Also, they do not need to take any legal hassle of subletting the property, and noticeably property remains in good condition because of regular maintenance. Regular maintenance is done by the agency.

The lowest pricing for a bed in CoHo is INR10000 per month (Considering INR 8,000 as an outlier). Considering that 30% of income can be spent on rent (while here it is added with

service), the lowest income will be INR 30000 per month. Thus, from the demand analysis, it can be inferred that 94% of people can easily afford it. However, sharing options (Triple/double) will vary with the location. Single sharing being priced at INR 20,000-25,000 per month can be afforded by approx. 15% of people from the demand survey.

### Aggregator Model: Nestaway

Nestaway acts as an aggregator and convenient platform for the property owner and the tenant. Nestaway charges a success fee (usually 12.5% of the rent that they collect) for a gamut of services they offer to owners - tenant lead generation, lead closure, agreements, home services during rental to move-out, and finding a tenant again. They deduct 12.5% of the rent of each bed every month and pass on the remaining to the owner. They have a mandatory 6 months lock-in period.

Rent of one bed in Nestaway is dependent on market price. Maximum rent in the current market scenario is INR 11,000 / month (without any service) for double sharing, and the same aligns with demand survey findings also. Nestaway operates in a completely asset-light model and has quite a wide

range of market penetration. In this model, rent is only related to the market rental price of the area and consists of very little service charge. Location with high land price combined with higher rental demand is much more profitable (Noida is an example) for the property owner, but for Nestaway profitability comes from the volume of beds. There is no brokerage, but a 12.5% monthly charge is deducted from the rent which seems insignificant, but it is 1.5 months of rent while taking one year as standard time. Hence it is a business model that seems like making less profit but when taken the whole picture they are running most successfully among the three models.

This model is better for landowners as rental yield is better than the average market yield. In the case of low-cost location, the yield is 1-2% higher than the average market yield but in the case of prime locations, it is almost 5-6% higher. All the legal procedures are taken care of by Nestaway. Nestaway gives a 'rental default guarantee' to property owners so in case any default occurs from the tenant's part Nestaway will pay the rent. Additionally, foreseeing any spends on damage to the house, Nestaway also provides



the owners with insurance of up to INR 10 million. In alternate EMI calculation, 100% EMI is achievable from rent in case of prime location and 36-40% in the low-potential area. But in all the cases it is better than the conventional rent option. Also, regular small maintenance is facilitated by the agency but paid by tenants.

As the lowest pricing for a bed in Nestaway is INR 4000/month considering 30% of income can be spent in rent (while here it is added with service) lowest income would be INR 13,000 per month. From the demand analysis, it can be inferred that it is affordable to 100% of the respondents. But the INR 4000 rent is charged at not so prime locations, where it can be as high as INR 11000 to 15000 per month. Table 2 gives a comparison of three different new residential

rental formats.

### Positive features of the three supply mechanisms

- i. *App-based Service*: One thing which is common between the three startups is the use of mobile app and technology. However, degree of the same is varied; for Your Space and CoHo, it functions more as a utility services platform for residents whereas for Nestaway it works as a search engine for homes. It is observed that already established as well as upcoming businesses are venturing into technology in the form of websites and mobile app for increasing their outreach and ease of use/access.
- ii. *Hassle-free renting*: Co-living companies have hassle-free booking & Move-in policy.

### iii. *Non-Discrimination Policy*:

In the case of all the three startups no discrimination is done on religion or caste basis. Nestaway & Coho provide ample amount of choices for both the gender.

### iv. *Brokerage and Security Deposit*:

No direct brokerage charge is taken in the case of Your Space or Coho. The standard security deposit timing is two months.

### v. *Safety & Security*:

Aspect of safety and services are completely taken care of at Your Space and CoHo whereas Nestaway offers more freedom.

### Negative features of the three supply mechanisms

- i. *Service Quality*: When tenants' feedback of these three formats is taken several demerits of these formats surfaced. There are several

Table 2: Comparison of three different new residential rental formats

Parameters	Your-Space	Coho	Nest Away
Format	Modern Day Hostel	Co-living	A platform for the owner to meet tenant
Business Model	Operator	Operator	Aggregator
Service	Given	Given	Assistance
Target Customer	Student Housing	Working Professional	Working Professional
Affordability Point	INR 60000	INR 25000-30000	INR 13000-15000
Volume	50	1000 (Approx.)	2500 (Approx.)
Rental Agreement	Subletting Clause	Subletting Clause	Direct agreement between owner & tenant
Rental Yield	Very High	Moderately High	As per the area price
Restrictions	Most strict	Moderate Restrictions	No restrictions as such

Source: Primary Survey

Table 3: Sample Co-Living Establishment for Financial Analysis

Typology	No. of beds	occupancy	No. of units	Built-up area per unit (sq. ft)	Area per bed (sq. ft)	Total area (sq. ft)	monthly fee Including mess (INR)	Per bed fee (INR per annum)	Deposit (Refundable) (INR)	Total
Air Conditioned (AC) Double seater with attach Bath	50	2	25	170	85	4250	15000	1,80,000	30,000	2,10,000

complaints against CoHo & Nestaway regarding bad service. Nestaway has severe customer care issues. Almost 90% of their tenants have faced customer care problems.

ii. *Pricing:* Your space and CoHo tenants have talked about the high price charged by these formats.

iii. *Restriction:* In the case of both Your Space and CoHo different kind and degree of restrictions have not gone down well with tenants.

iv. *Moving out clause:* Moving out from Nestaway homes is considered as an event full of hassle by tenants. All three formats are accused of misuse of high demand as in the market there is no competition. Although these start-ups have a novel idea, implementation has emerged as a challenge.

Together these rental agencies have not even captured 4-5% of the total market whereas 60-70% rental housing stocks can be easily be converted to either of these three formats. Clearly

a huge opportunity or market for these formats exists. It is a good market for the startups as the rental yield is quite high and hence it is profitable for both the property owner and the rental agency. It is also profitable from the user point of view that most of the major hassles of taking a place on rent in a new city are being addressed by the rental agency.

#### **Financial feasibility Analysis for the supply mechanism for co-living rental versus conventional rental**

A sample feasibility analysis has been done for the business model of a service provider i.e. co-living company with standard assumptions vis-à-vis the renting model of an individual owner.

#### **Sample model for Co-Living Companies (Service Provider) in Noida/Gurgaon**

From the feasibility analysis (Table 3,4,5,6,7 & 8), it can be inferred that co-living rental offers a more attractive yield and financial feasibility indicators vis a vis conventional rental for the same property to the supply

Table 4: Area Statement for Calculation

Particular	Built-Up Area (BUA) (sq. ft)
Net room area	4250
Recreation / common rooms	250
Retail (shops)	1,280
Mess	300
Admin/ office	250
Common area / passages etc.	1,583
Total	7,913
Area per bed (sq. ft)	158
Area per room / unit (sq. ft)	317

mechanism. In co-living business model, average value paid to the landlord is approximately 40% of the rent per bed per month. Hence 40% rent value covers the average market rental of that particular location. However, there is an upper limit on the rent-paying capacity of the tenant. Entry-level professional's average salary as per consumer survey is INR 0.6 – 1 million per



Table 5: Standard Assumptions for Financial analysis

Cost (INR / sq. ft.)	
Construction cost including land development	-2,000
Fit-out	-800
Escalation in Cost of Construction yearly	5.0%
Revenue	
Escalation in Revenue yearly (in %)	5.0%
Mess coverage (% students opting for the mess)	100.0%
Operating Expenses	
Admin, operations and, maintenance (INR per sq. ft per month)	8
Property tax & licenses (INR per sq. ft per annum)	5
Marketing & promotion (% of revenue)	2%
Contingency (% of revenue)	1%
Interest on deposit	6.5%
Capitalization Rate	10%
Discount Rate	18.0%

Table 6: Financial analysis Cash Flow

Cash Flow Period	25 Years
Project IRR	26%
Project NPV (INR Mn)	14
Operator IRR	13%

Table 8: Cash Flow of Financial Analysis

Cash Flow Period	33 Years
NPV (INR Mn)	-1.17
IRR	5%

## Sample model for Individual Owner in Noida/Gurgaon

Table 7: Assumptions for Financial Analysis

Cost Assumptions		
Flat Type	2 BHK	INR
Flat Cost	80,00,000	Sq. ft
Carpet Area	900	%
Loan Interest	8.25%	Years
Loan Tenure	15	
Down Payment	30%	INR
Down Payment	24,00,000	INR
Loan Amount	56,00,000	INR
Interest Amount	41,79,000	INR/ Month
EMI Payable/month	- 54,328	INR per sq. ft. per month
Maintenance cost	-1	INR per sq. ft.
Furnishing Cost	-500	
Discount	18%	
Revenue Assumptions		
Occupancy	2	
Rent	12,500	INR/month
Annual Escalation	5%	

annum. Hence, the maximum rent-paying capacity is INR 15,000 – 25,000 /month, and salary variation among major metro cities in India is not much significant. E.g. in the case of Mumbai where land value is exorbitantly high this model may not work efficiently. For example, take a Sample calculation, where the average rent of a 2 BHK in Mumbai is INR 55,000/month. If INR 55,000 is taken as 40%, then the total charging amount per apartment/month will be: INR 137,500. Considering four inmates in a 2 BHK, chargeable rent per month would be INR 34,375. Whereas

the average starting salary in Mumbai as INR 8 – 10 lakh per annum and by the standard rule of 30% income spent on rent, average affordable rental range is INR 20,000 – 25,000. Hence, in the case of a city like Mumbai, the operating model is not much viable. The business models are specific to the local land and labour market.

## STRATEGIC RECOMMENDATIONS FOR CO-LIVING RENTAL MARKET

Despite all the shortcomings, high growth in co-living sector

can be achieved if it is aided by housing policies and strategic business policies. To address the rental housing crisis in metro cities of India, these new formats have already exhibited their efficiency but to make it beneficial for each stakeholder i.e. property owner, rental agency, and tenants, the right policy environment is needed as it gives a basic premise for these stakeholders to explore their choices. It also strengthens government's role as an enabler which facilitates the market to work most efficiently.

Keeping these aspects into consideration few policy recommendations have been given, which along with empowering and regulating rental agencies, can be implemented to solve overall bachelors' housing problems. Rental vouchers to rental agencies, unlocking vacant properties for the market, registration, and promotion of rental agencies can be identified as suitable measures to empower and regulate rental agencies. Further, these policies have already been acknowledged as suitable policy measures in the National Urban Rental Housing Policy draft (2015) which shows the effectiveness of the same in this present scenario. Employer driven housing and reservation for rental housing in large housing projects in high demand rental zone which needs to

be separately earmarked in a residential zone in the master plan is thought of as an effective solution to solve the bachelor's rental housing crisis. An online portal for rental housing which would act as a one-stop solution. This intervention which has been briefly articulated in the new draft (2015) is probably the most important policy measure to help people who have just migrated to a new city to give a clear picture of the current rental housing scenario of the city. In the portal, rental stock of the city should be registered irrespective of their vacancy status to create a wholesome database. Also, every detail of the property like size, rent, amenities, vacancy status, deposit clause, etc. should be declared. Rental agencies and rental agents also need to register with the portal. To create and manage the database and the portal a similar authority like RERA needs to be created as one of the main criticisms of RERA is that there is no provision for rental housing in RERA (Makaan, 2018). To sort the differences/ dispute between stakeholders there should be a mechanism on the portal for the systematic registration of the issue, redressal of the issue, and penalty for the faulty party. Thus, a portal like RERA can be created for rental housing stock registration, where grievances of the tenants can be addressed by the competent authorities.

## CONCLUSION

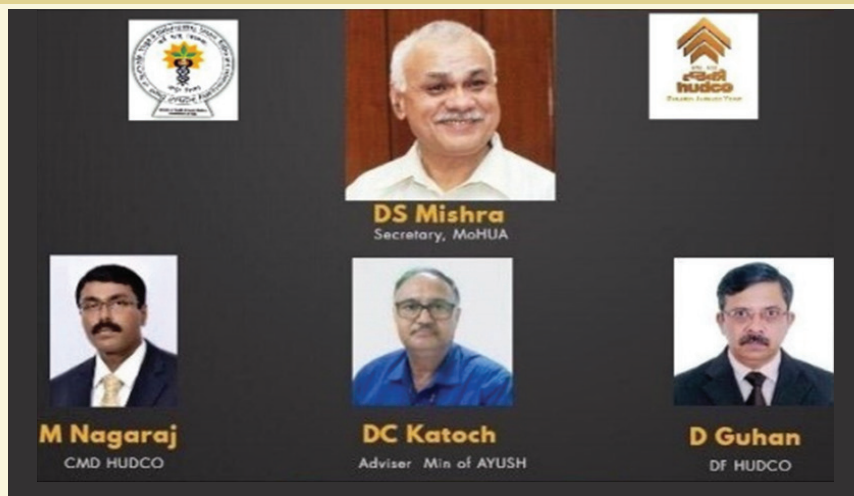
This research has thrown light on the merits and demerits of the co-living spaces as a new format of rental housing from the demand and supply mechanism perspective. This study demonstrates that despite small market presence these formats are quite effective in outreach, risk management, and yield, especially in the context of the cities under study. Further, the working model of these formats can also be studied in the context of other metro cities witnessing high rental demand. It is shown that though the Co-living rental startups have started their journey with great ideas to solve the rental housing crisis for the millennials, huge demand in the market has created more chaos. In absence of rental housing policy support, this segment remains unregulated by the government. For further research, these formats and their effectiveness can be studied across all major metro cities in India like Bengaluru, Pune, Hyderabad, Mumbai, which in turn will result into a better understanding of the bigger picture of their working model and its success and failure at the national level. Further research can focus on how urban planning framework and regulations can facilitate rental housing in general and such business models in particular, to offer an efficient and effective solution

to the ongoing housing crisis for 'generation rent'. The global phenomenon in these formats can be studied and analyzed to understand how these formats can shape in the future in the context of Indian cities and the migrating youth. For now, these new rental formats have started their journey in an unorganized rental market of Delhi and if bolstered by policy and regulations it has the potential to solve this crisis quite effectively.

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## HUDCO ORGANIZED WEBINAR TO MARK 6TH INTERNATIONAL YOGA DAY



HUDCO Ltd. organized a Webinar on 'AYUSH for Holistic Healthcare during COVID Outbreak', to mark the 6th International Yoga Day, where the Chief Guest was Shri Durga Shanker Mishra Secretary, MOHUA, GoI. Shri M. Nagaraj, CMD HUDCO and Shri D. Guhan, DF HUDCO were also present. The key speaker, Dr. D.C. Katoch, Joint Advisor, Department of AYUSH, provided tips on self-care protocol for holistic and healthy living, especially during the current pandemic COVID-19.



# CRITICAL ANALYSIS OF DELHI'S IN SITU-SLUM REHABILITATION POLICY ON PPP MODEL

## -A Study of Slums of Shalimar Bagh

MS. AAKRITI SINGHAI  
MS. BHAVYA MATHUR

**The success of slum redevelopment policies can be measured by three key outcomes: identification of beneficiaries, timely construction, and quality of housing, along with making the project financially viable for the developer.**

*Keywords: Urban Slums, housing, urban policies, In-situ rehabilitation, public-private partnership, Delhi*

Ms. Aakriti Singhai (asinghai123@outlook.com) is B. E (Civil), M. Plan (Housing) & Sr. Affordable Housing Analyst, CRP Affordable Housing, San Diego CA; and Ms. Bhavya Mathur(bhavyamathur2205@gmail.com) is an Architect, M. Plan (Housing) School of Planning and Architecture, New Delhi.

*In-situ slum rehabilitation (ISSR) is one of the four verticals of Pradhan Mantri Awas Yojana (PMAY)-Housing for All (Urban) under which those living in informal urban settlements will be provided with modern dwellings without being displaced using land as a resource. These in-situ slum development projects are intended to be developed on a PPP basis where the private developer will construct multi-storeyed housing facility for slum dwellers along with a commercial component on the land where the slum exists at a 60%-40% ratio respectively. Even though the policy has been framed and demand is humongous, there are multiple concerns owing to which developers are hesitant to enter into this segment. This paper aims to critically analyse the In-situ Slum Redevelopment policy of Delhi Development Authority (DDA) at a policy level, highlighting the challenges faced by various stakeholders, viz DDA, Private developers, slum dwellers etc. The Study reveals the possible issues and challenges related to project execution. The outcome of the Study is to suggest suitable recommendations to make projects lucrative for the developers with stakeholder participation that ultimately benefit government as well as end user.*

### INTRODUCTION

In today's world where urban centres serve as a hub for employment opportunities,

there is a rapid migration to metropolitan cities. Migration to urban areas continues to be a strong phenomenon led by demographic expansion and poverty induced rural-urban movement. Like any other developing country, India too is presently passing through a phase of acute housing shortage. Housing in India varies greatly and reflects the socio-economic mix of its vast population. Internal migration is a driver of growth and development, particularly in an economy like India's where a large chunk of the rural population is seasonally employed in agriculture. Moreover, urban India's growth is built on the back of cheap labour in everything from construction to domestic work. Various combinations of rent control, opaque and distorted land markets, low floor space indexes have resulted in a severe lack of affordable housing in India's premier cities. Slums are the natural outcome. A Slum has been defined as a residential area where dwellings are unfit for human habitation due to reasons of dilapidation, overcrowding, faulty arrangements and design of such buildings, narrowness

or faulty arrangement of streets, lack of ventilation, light, or sanitation facilities or any combination of these factors which are detrimental to the safety and health (Census of India, 2011).

Since independence in 1947, the Government of India has devised several housing policies that address the Economically Weaker Section (EWS) and the Lower Income Group (LIG). The response of the government to tackle the issues of informal settlements have evolved over time, from slum Clearance and improvement, to slum up gradation and relocation, to slum rehabilitation. By involving the private sector and using real-estate as a financing tool, this policy marks a stark departure from the previous policies which focused on piecemeal upgradation efforts in slums (National Slum Development Program) or used government machinery to create poor quality public housing (Basic Services to Urban Poor).

Delhi has around 900 slum clusters housing almost a fifth of its population. The Delhi government is now trying to redevelop about 30 slum clusters in two phases with the involvement of private developers. Despite governments efforts to incentivise the in-situ slum rehabilitation scheme, slum rehabilitation projects are generally stuck up at design,

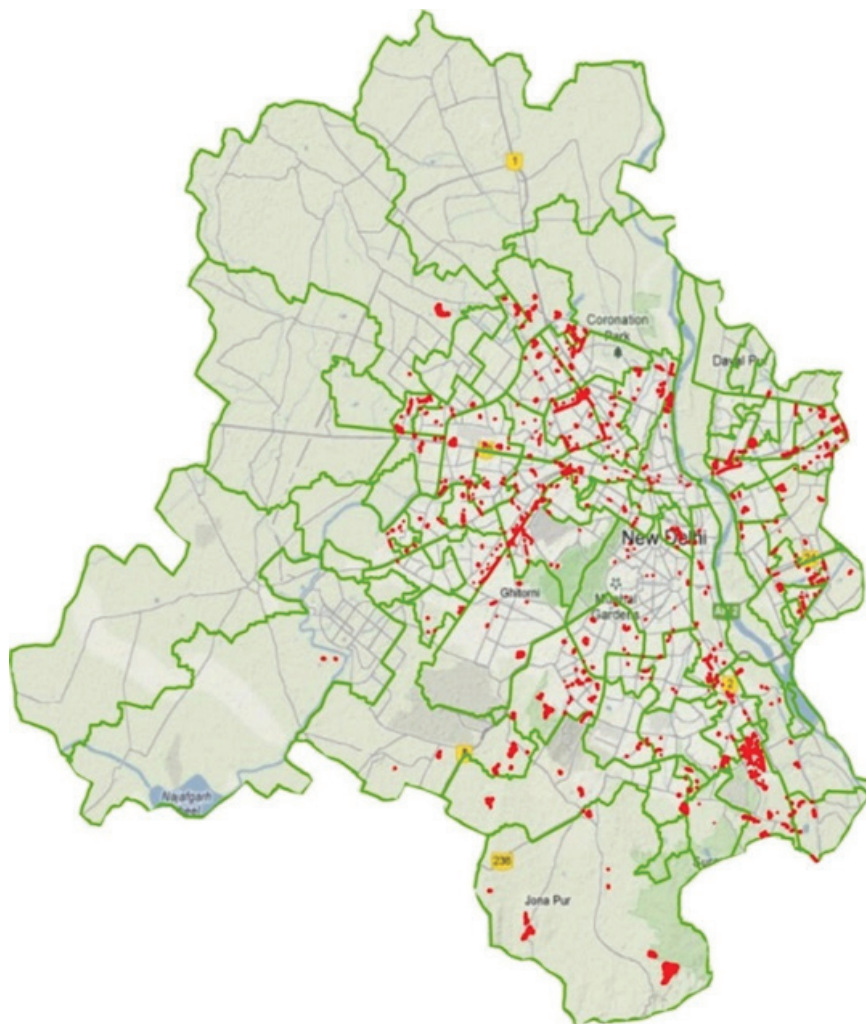
conceptualization and initial stages and do not pick up the way they should. On the face of it, it should be something that developers should die for and vie for as in a slum rehabilitation project, the biggest cost head, land, comes free. A developer is expected to build houses for the slum dwellers and in return get a portion of the total space for development which it can sell at market rates. The developer gets higher floor area ratio (FAR),

that is permission to build more floor area on a piece of land in a slum redevelopment project, and thus books higher margins in these projects. However, there are many challenges which are explored in the paper which make it difficult for the developer to take up such projects.

## SLUMS SCENARIO IN DELHI

Delhi, the capital of India is spread across 1,483 sq. km with

*Figure 1- Location of Slums in Delhi. One can see that the slums are located all across the city. (Source DDA)*



a population of 18.5 million people. The Economic Survey of Delhi, 2007-08 estimated that 47 per cent of the city's population lives in Jhuggi-Jhopri (JJ) clusters, slum designated areas and relocation colonies. In 2005, only 30 percent of the population had formal rights over the land they lived on, while the unorganised sector accounted for 66.7 percent of total employment in Delhi. Around 1.7 million people reside in slums covering an area of about 805 hectares in 675 slum clusters located in various different locations spread all across the city as seen in Figure 1. The land on which these slum dwellers reside is mostly government land owned by over 30 agencies (more than 50% on DDA land). These slum clusters are home to approximately 3,08,735 households (Refer Table 1). Over 80% of these slum dwellers have migrated from other states over the years in an attempt to seek employment opportunities (formal and informal sector) and earn their own living. Most of them support and contribute majorly to the industrial sector, construction sector, small business and service organizations in Delhi. The cheap labour they provide, the large number of domestic help and service personnel they consist of, and the sizable informal functions they perform, make them an essential part in the city's life, functionality and existence, which especially

Table 1: Details of Slums as per Land owning Agency in Delhi

Land Owning Agency	No. of JJ clusters	No. of Households	Area under JJ clusters
			Acres
<b>DDA</b>	<b>335</b>	<b>153349</b>	<b>849</b>
Central Govt.	155	83520	672
Others i/c private	11	2811	26
MCD	38	9526	66
DUSIB	99	46212	227
Agencies of Delhi Govt.	37	12957	150
<b>Grand Total</b>	<b>675</b>	<b>3,08,375</b>	<b>1990</b>

(Source DDA)

has been observed during the current Covid-19 times.

But, on the contrary, even after being such an essential part of the city, the conditions that they live in, the basic facilities that they are deprived of – proper shelter and basic infrastructure in terms of water and sanitation, is a major concern towards their health and well-being as well as the unhygienic environment in and around these clusters is an alarming threat for the city's habitable conditions in future.

### Impact of Covid-19

A huge quantum of the population of Delhi resides in informal settlements, slums, which are highly congested and with poor infrastructure. The containment zone maps show increasing clusters of infections that overlaps with slums and other neighbourhoods that are inhabited by the poor and minority communities, majorly along the periphery of Delhi in the suburbs or NCR towns.

The urban poor have the most fragmented and poorly regulated healthcare system. Urban India has a high concentration of the doctors and hospitals in the country with nearly 60% of all health workers working where only 30% of the population resides. A high density of population, lack of public health-related infrastructures like sewerage systems or piped water adds additional layers of risk to infection. The impact can be particularly severe where prevention requires physical distancing and frequent washing of hands with soap and water. The COVID-19 pandemic has clearly highlighted the plight of the slum dwellers and need for an urgent intervention to upgrade the slum pockets. The redevelopment norms for slums may have to be modified keeping in view the impact of pandemic and a need for an integrated and mixed-use community redevelopment.



## PMAY: IN – SITU SLUM REHABILITATION SCHEME

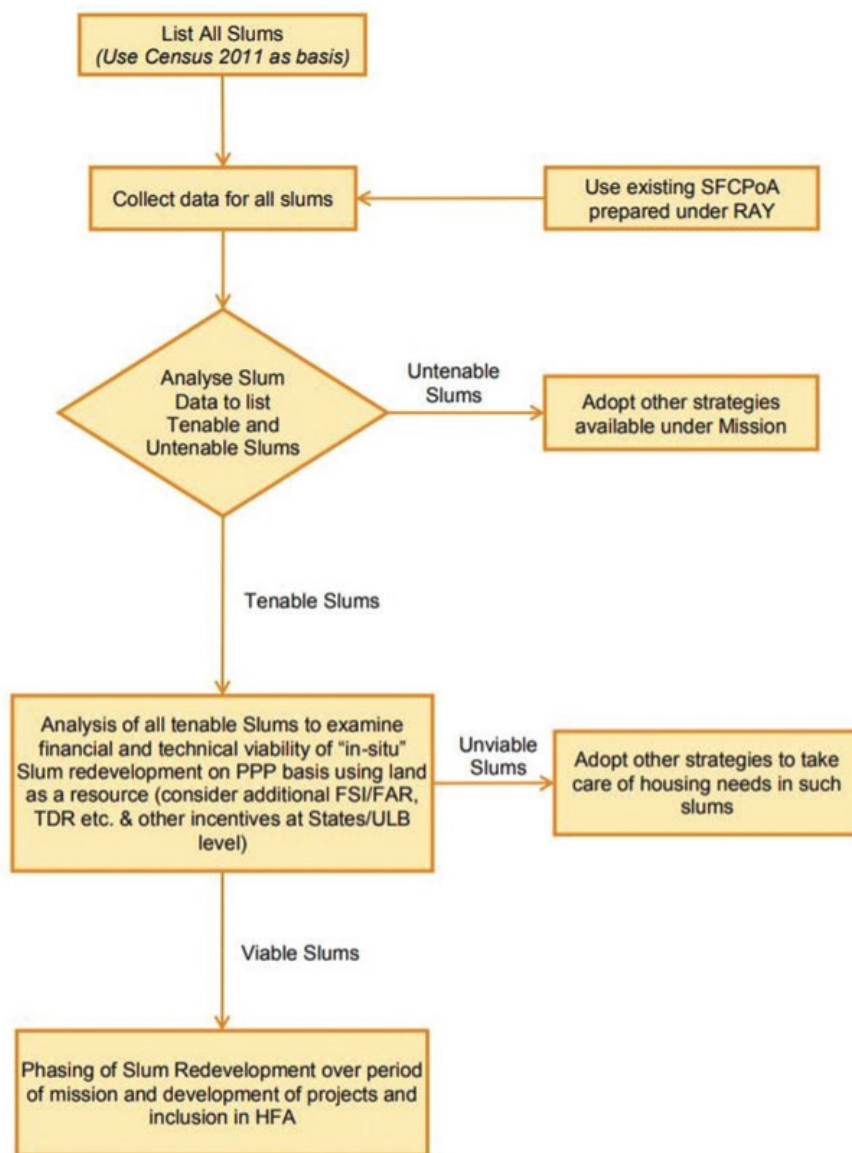
The Government of India, Ministry for Housing and Urban Poverty Alleviation devised a scheme in 2015, Pradhan Mantri Awas Yojana (PMAY), with a mission statement that said, “Housing for All (Urban).” This aimed to provide a “pucca” house with water connection, toilet facilities, and 24/7 electricity supply and access. The Mission seeks to address the housing requirement of urban poor including slum dwellers. The Master Plan for Delhi 2021 also provides for the housing for urban poor and rehabilitation/relocation of slums and JJ clusters. The concept of land as a resource is adopted to develop projects on Public-Private Partnership (PPP) Model, attracting private investments by public private partnership for this purpose, creating planned development/redevelopment of these colonies, proper utilization of vacant/encroached land parcels of DDA/central government agencies and reclaiming the encroached government lands to the possible extent and using it optimally for creating maximum affordable housing facilities.

The “in-situ” slum rehabilitation approach aims to leverage the locked potential of land under slums to provide houses to eligible slum dwellers to bring them into the formal urban

settlement. Under this scheme, slums which are located on central government land, state government land, ULB land, or private land are permissible for “in-situ” redevelopment. The In-situ Slum Rehabilitation Scheme under PMAY (U) aims to benefit the slum dwellers by giving the slums a facelift with multi-storey

apartments having all the basic amenities. The DDA engages a private developer who acts as a facilitator and constructs houses for the slum dwellers on the land owned by DDA. The In-situ slum rehabilitation component to be provided on a minimum 60% of the site area and the developer shall use the

Figure 2-Strategy for “in-situ” Slum Redevelopment using Land as a Resource



Source: PMAY guidelines, MoHUA, (2015)

remaining 40% of the area as the remunerative component. In this scheme, mixed land use or commercial component up to 10 percent of permissible FAR in the residential component of the land is allowed. Private partners for slum redevelopment are selected through an open bidding process. State governments and cities, if required, provide additional floor area ratio (FAR)/floor space index (FSI)/transferable development rights (TDR) for making slum redevelopment projects financially viable. A slum rehabilitation grant of Rs. 1 lakh per house, on average, would be admissible for all houses built for eligible slum dwellers in all such projects

For in situ slum redevelopment (Figure 2), the relevant and extant planning norms and development controls are applicable as per – Master Plan of Delhi. The DDA, beneficiaries, slum dwellers and the developer play different roles at different stages in these projects for proper development and execution of the projects.

The role of Delhi Development Authority –

- The DDA acts as a regulator, mediator and enabler which sets up various committees for formulation and implementation of the policy and the action plan as per PMAY guidelines.

- The DDA prepares the lists of beneficiaries based on surveys conducted. The beneficiaries must be citizens of India and must reside in the JJ clusters over a minimum of 18 years.
- It selects the private developer with an open and transparent bidding process.
- It provides external trunk infrastructure facilities for basic civic amenities to the slum dwellers in the project.
- DDA ensures by periodic inspections that the beneficiaries are residing in the alternative transit accommodations or rented houses provided by the developer. In case if not, their right of alternative allotment in lieu of Jhuggi will be forfeited.
- The DDA supervises/allots houses constructed under the slum rehabilitation projects under a transparent computerized draw system.

The role of beneficiaries –

- To pay the cost fixed by the government within prescribed time limits to the DDA. If the beneficiary fails to do so, they have to pay a penalty on delayed payment as per DDA's rules. The beneficiaries are liable to pay water, electricity and maintenance charges in time.
- To provide a structured interface between the slum dwellers, DDA and the

developers, they are required to form an RWA (Residents Welfare Association) under the society's registration act, 1860. The eligibility shall be determined on the basis of a survey conducted by the DUSIB.

- They have to get themselves duly identified / jhuggis photographed and video graphed as a proof of their living and duly vacate / facilitate land development and construction in a time bound manner. They should not sell their DU's and squat again in any other place.

The role of developers –

- The developer gets the slums cleared and shifts the beneficiaries within 5 kilometres of the radius in a transit camp or in rented accommodations as per the cost of EWS flats prevailing in that area. Further, it also obtains the required statutory approvals from the prescribed authorities for the slum rehabilitation scheme.
- The developer is liable to provide basic infrastructure (water, electricity, sanitation facilities) at the alternative transit accommodation sites at his own cost and also these facilities provided at the transit locations would be checked by the DDA to ensure proper up-keep of the facilities and hygiene at the transit sites.

- They prepare the detailed architectural and structural drawings including the project implementation framework and also manage the finances through its own funds or arranging funds by foreign direct investments or domestic funds through international lenders.
- The developer also assists the beneficiaries in forming an association / RWA of the beneficiaries for the purpose of operation and maintenance for a period of 5 years.
- The sale of remunerative components by the developer will only be possible after the completion and handover of the completed EWS residential components to DDA.
- The developer shall mandatorily provide all the basic amenities/infrastructure (water, electricity, sanitation facilities) under the rehabilitation scheme besides providing houses to the beneficiaries.

## Factors imperative to make in-situ redevelopment successful -

Following are the main attributes of the slum rehabilitation model which enable in-situ redevelopment scheme to work well:

1. *Land Scarcity*: Land scarcity in the strategic locations near to major economic centres.

2. *High slum population and land coverage*: Growing populations and urban migration have resulted in occupation of large percentages of the city by squatter settlements.

3. *Real Estate Cost*: The land transferred from the government to the developers replaces the need for a government subsidy; in fact, the government gains from the 25% premium paid by developers and leverages the capacity and expertise of the private sector in real estate development.

However, a major challenge faced by developer are as follows.

1. *Slum Clearance* – The developer does not want to get involved in slum clearance and government intervention is sought to be suitable. Vacation of Site should be done by DDA in line with Kathputli colony development and vacant site should be provided to the developer
2. *EWS Component handover*- Developer should be allowed to take up construction of rehabilitation and remunerative component simultaneously, sales of remunerative component can be allowed, however possession should be allowed only after handover of EWS component.

3. *Land for Transit Accommodations* – Use of Alternate vacant land for transit accommodation by developer is not financially viable, however an alternative government land for transit accommodation on rent is a more viable (on the lines of DMRC Projects).

4. *FAR*–Project should be treated as one entity and Unused FAR from Rehabilitation part should be allowed to be used in remunerative component, and incentive of 1.5\*FAR in remunerative component should be given as it's a redevelopment project.

5. *Density* -900 DU per Ha. is insufficient to accommodate population in some slum pockets, hence it requires relaxation.

## CASE STUDY

About 14 JJ (Jhuggi Jhopri) clusters covered in 7 projects having approximately 20677 households are being taken up across Delhi in Phase 1 of redevelopment. This paper analyses a case from the perspective of providing affordable housing to urban poor under In Situ Slum Rehabilitation PMAY (U) in slums of Shalimar Bagh and Pitampura in Delhi. The study of slum has been conducted at settlement level and dwelling unit level and highlights the current situation of slum and



expectations of residents with respect to redevelopment.

## Background

DDA has selected 14 slum clusters across 7 locations out of 32 clusters for the In-situ slum rehabilitation pilot project Phase 1, affecting a total population of 4.47 Lacs (Table 2). Slum cluster of Shalimar Bagh and Pitampura has been selected for the primary survey with the objective of assessing the quality of life and analysis of current housing situation. DDA has conducted baseline survey of JJ dwellers of both the sites and DPR is under preparation (Source: DDA, Dec 2019).

Shalimar Bagh and Pitampura are located in North West Delhi in zone H as per Delhi Master Plan 2021 in Residential Land-use with 275 and 500

Table 2: Seven Slum locations selected for the pilot project

S. no	Slum location	No. of HHs	Area (Ha)	Current Density (DU/Ha)	Density required in Rehab @60%
1	Dilshad Garden	3914	6.57	595	992
2	Kirti Nagar	2794	4.34	644	1106
3	Rohini sector 18	700	2.2	318	530
4	Badli village, Rohini sector 19	879	2.0	440	733
5	Pitampura & Shalimar bagh	775	1.06	731	1218
6	Vasant vihar	4909	17.32	284	474
7	Kalkaji Extension	6706	13.90	483	805
	TOTAL	20677			

•Above table shows that Density norms as per DDA policy (@900 DU/Ha on 60% of rehabilitation land component) do not suffice in 2 slums out of 7 slum Clusters

households respectively. These settlements were formed in 1989 with Migration of Labour class from UP and Bihar in search of employment opportunities in Shalimar Bagh and Wazirpur Industrial Area. The Catchment area near the sites is mostly

Residential and Industrial. We examined aspects like physical infrastructure such as shelter, sanitation, water and transport, Social aspects such as health, education and community ties, Economic opportunities etc.

Figure 3: Location of Study Area (Shalimar Bagh and Pitampura JJ Clusters)

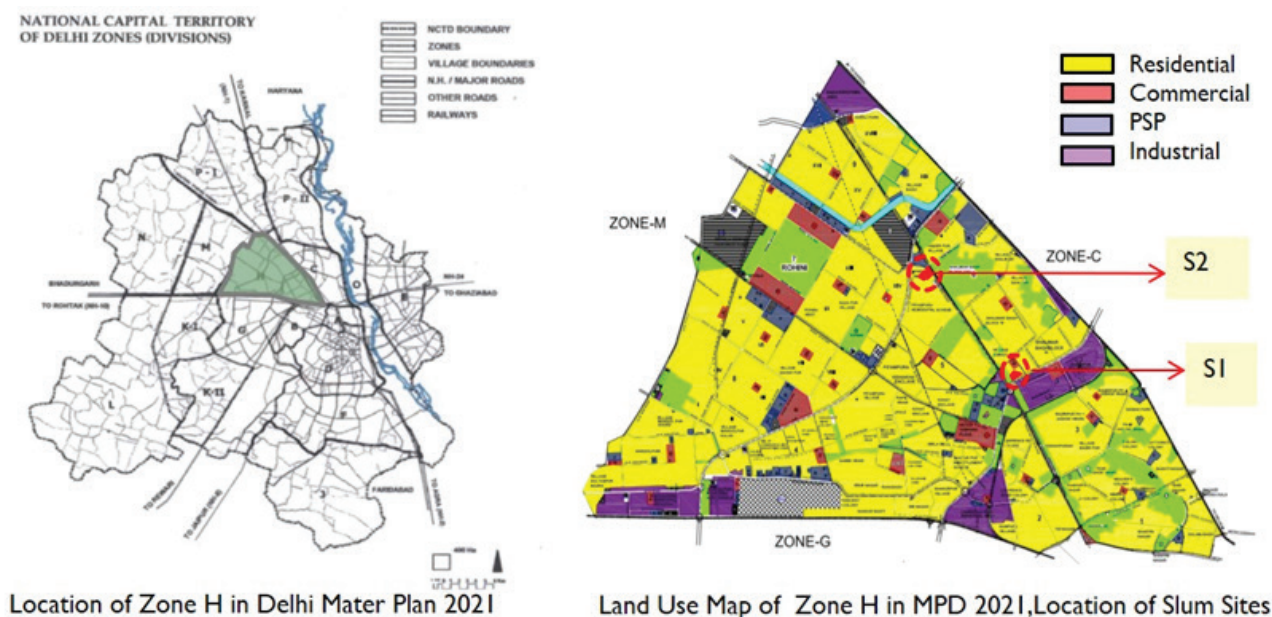
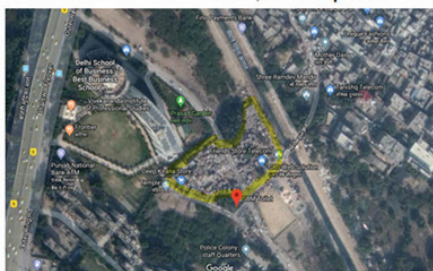


Figure 4: Slum Characteristics

JJ cluster – AU Block, Pitampura



JJ cluster – AO Block, Shalimar Bagh



Table 3: Settlement Details

	Shalimar Bagh	Pithampura
Land Area	4860 sqm	6990 sqm
No. of HH	275	500
Population	1500	2550
DU Density	644 DU/ha	781 DU/ha
Pop Density	3125 PPH	3260 PPH
Age	35+ Years	40+ Years

### Current Situation

The observations after the detailed study with the characteristics of the slum at settlement level, infrastructure and safety and security in that locality. Talking about the settlement level, a population of 1500 people live in 0.48Ha of land area in Shalimar Bagh and 2250 people live in 0.69Ha of land area in Pitampura. (Table 3) About 90 percent of structures are G+1 storey with plot sizes ranging from 10-18sqm. The land use is mixed use with small shops or confectionary stores on ground floor and residential on the upper floors. There are no internal staircases and access to the upper floors

are through narrow wooden or iron ladders from outside. There are more than 50 percent rental accommodations in this area.

If we look at the built open relationship in the settlement,

we find that above 80% of the area is built (Figure 5). There are narrow congested lanes, over the drains which can hardly be considered as open. Amenities like public toilets, anganwadi etc make up to 1% of the built-up space. Commercial spaces, like shops and mixed use on the periphery of the slum etc spring up on a need basis to cater to daily needs of the people and also as employment generation to the residents. If we compare this to the planned EWS housing as per norms where a minimum of 10% greens, 15% roads and 5% amenity spaces are provided, we see that the existing condition of living in the slum is poor. Lack of open spaces affect the social well-being of the slum dwellers and habitation in such environments is questionable.

The residents are mostly industrial workers from Bihar, Orissa and UP. Majority of people are staying in the slum for 10-20 years, and have built

Figure 5- Settlement level pictures of Slum



G+1 STRUCTURES

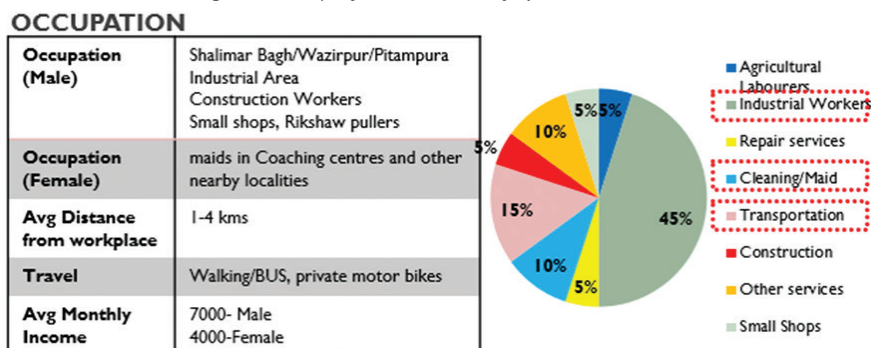


NO WINDOWS ON THE FIRST FLOOR ROOMS

Source: Author



Figure 6- Employment Summary of Slum Dwellers



SOURCE 1- Primary Survey by Author

pucca house in the jhuggi with hard earned money (Figure 6)

### Physical Infrastructure

The slums are characterized by extreme lack of basic physical infrastructure, very narrow access lanes (2-3 ft width) and poor condition of public toilets (Figure 7).

The living conditions are insanitary and unhealthy with Open drains which flood during rainy season causing diseases.

The DUSIB Sulabh toilets are non-functional and inaccessible at night. Furthermore, they are so dirty that some of our female respondents reported that they use the fields. Often, women face violence when they go out to relieve themselves, particularly at night. The problem is even more acute for adolescent girls. This is a violation of their dignity and privacy. The Liquor shop within the slum also creates a security concern.

Figure 7- Congested houses, Narrow Pathways – A living condition borne out of poverty and helplessness



SOURCE2- Author

Figure 8- The Sanitation Issue of Shalimar Bagh coverage in newspapers



### Dwelling Unit Level

Several household level case studies have been done in order to understand the current situation, views on slum rehabilitation schemes and expectations of slum dwellers from the scheme. Random sampling in order to include various housing typologies, social groups and vulnerable group of people (Old age, single women, extremely poor household).

Both the bastis are extremely congested with an average plot area of 10-15 sqm and only 2-3 sqm area per person. There is no light and ventilation in the rooms, no windows and no internal access stairs, only wooden/iron ladders from outside to access upper floors. Assets like TV, fridge, cooler is present in some jhuggi. Some typical floor plans of the jhuggis illustrate the condition of living. Vertical extension of housing units to facilitate rental housing is observed in almost all jhuggis and about 60% of Slum dwellers are living on rent (Figure 9).



Figure 9- Typical Dwelling Unit Layout

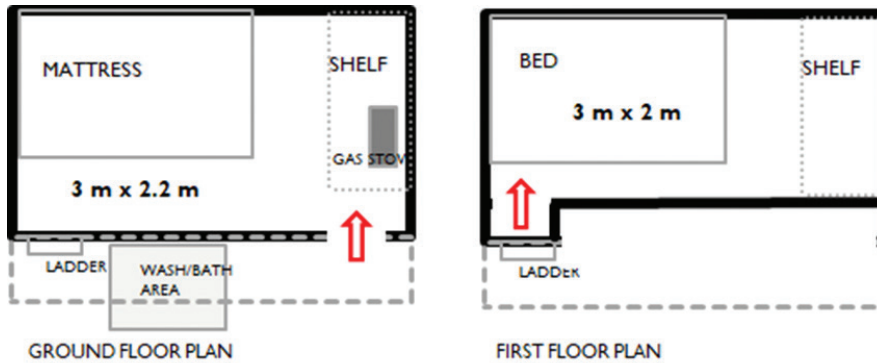
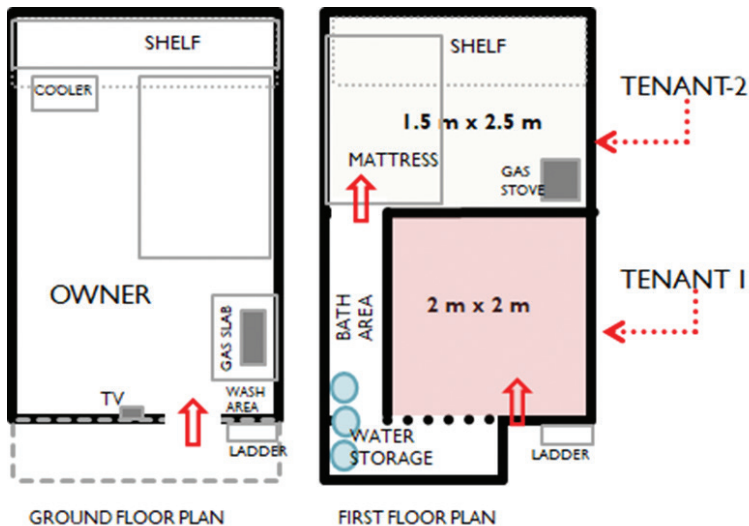


Figure 10- Typical Dwelling Unit Layout of a Rented Unit



SOURCE - Authors

With respect to the ISSR policy in this selected site, slum dwellers have very little or no clarity in the policy and eligibility. Lack of knowledge of the scheme and financial conditionality and the occupancy status of the eligible households in the flats has led to fear and confusion with respect to the possibility of permanent eviction from a settlement that its residents have built over the course of the last 40 years. However, many are optimistic and ready to upgrade and manage in high rise apartments in a hope to provide a better standard of living to future generations.

## EXPECTED BENEFITS TO SLUM DWELLERS

The sorry state of slum needs an urgent intervention and the slum dwellers would benefit in numerous ways under this policy as they would get pucca habitable houses having carpet area up to 30 square meter with two rooms, kitchen, bathroom, balcony and WC against payment of prevalent cost as approved by the government from time to time. The beneficiaries will be provided basic civic facilities like safe drinking water, sewerage line and electrical connections. Facilities of Anganwadi, health centres and other social infrastructure as per provision of Master Plan of Delhi will be provided in the area. The beneficiaries will be allotted EWS flats on a leasehold

basis with a lock in period of 10 years. Thereafter, ownership will be transferred in the name of beneficiary or his legatee subject to payment of all dues, utility bills, property tax etc. Qualitative improvement in socio-economic and environmental conditions of the surrounding areas will be seen too. However, there is no provision for livelihood opportunities, or shop construction within the establishment. The projects do not incorporate Art/ Culture/ Tradition/ Local Artisan to make them self-sufficient within development. We recommend prioritizing community space and spaces for micro-entrepreneurship within building design to increase social and business opportunities and maintain the social, semi-public, entrepreneurial atmosphere of the streets in newly developed dense vertical redevelopments.

The aspect of community participation is missing as of now. However, it is an established fact that by organizing the community may result in keeping good quality control and costs low. This also gives the community a sense of ownership, makes them agents of change instead of being at the receiving end.

Concerns and demands of the slum dwellers are as follows:

- All the families should be transferred altogether to the transit camp, and not in two

or three shifts (as they fear that some sections might be eventually excluded from the rehabilitation project).

- An official written guarantee such as an allotment letter for a flat in the housing project should be given to each family before they vacate the settlement as many fear that they might be resettled elsewhere, or that, if relocated on a transit site, they would not be allowed to move back to their initial location and get a flat.
- Government should also consider in-situ rehabilitation of shop owners by construction of dedicated small market with shop sizes 10 m<sup>2</sup> – 15 m<sup>2</sup> within the establishment.
- The pradhans have frequent internal meetings, and they interact directly with the DDA.
- Clarity in the financial contribution by slum households and Formal Loan facilities.
- Details of Maintenance cost of High-Rise Apartments to be borne by the residents.

## CONCLUSION AND RECOMMENDATIONS

The unparalleled growth of slums in urban centres reflects both on the poor housing conditions of a large section of the society and the massive

shortfall of affordable homes near economic clusters. National policies in India have moved from slum upgradation, to slum redevelopment, to in-situ redevelopment in a short span. In-situ redevelopment promises to fulfil the aspirations of the new urban India through better quality housing, faster construction, and enhanced beneficiary identification. Efficient implementation will require strong partnerships between governments, investors, and private developers to affect the quality of life of slum dwellers. The success of slum redevelopment policies can be measured by three key outcomes: identification of beneficiaries, timely construction, and quality of housing, along with making the project financially viable for the developer. With no projects currently completed, it isn't possible to measure the performance of the policy, rather, its features are examined to determine if administrative design was intended to ensure these three outcomes. By various private sector incentives, the policy has aimed to attract more and more development and revamp in the strategic economic hubs within the city. To ensure timely construction, the Ministry of Housing and Urban Affairs has launched the Technology Sub-Mission which recognizes and implements modern, innovative, and green technologies and building

materials for faster construction of quality houses. Such industrial construction practices are 30% cheaper and 40% faster than conventional construction methods, and the construction cost savings can be passed on to the beneficiary. The PPP Model can be used effectively to tap this compelling opportunity as it creates a huge pool of resources and other economic and social benefits. It should also be recognized that Beneficiaries need to play a larger role in the planning and implementation of development efforts that will reshape their lives.

One of the biggest hurdles with in-situ slum redevelopment is the acquisition of land from current slum dwellers. Currently most developers are shying away from in-situ slum redevelopment as the land acquisition is cumbersome and not their main expertise. If the government could help in slum clearance, and provide them with temporary government housing it would pique interest within the real-estate developers to come in and develop the project. This would also allow the government to reduce the current subsidy and incentives given to developers as projects would naturally meet the required hurdle rate, or may charge the rents from the developer for transit accommodation and associated costs. Digitalization of the approvals at various stages of development could

also help in making the system efficient and holding officials accountable. Promoting non-profit organizations to undertake in-situ redevelopment could also help counteract the lack of adequate housing in urban areas. There is an urgent need to explore alternative options such as social rental housing. Although the emphasis was on the construction of houses under PMAY(U), other potential housing solutions such as rental housing have not been included. In today's times, with high rates of migration to urban areas for work, the concept of large-scale rental housing equipped with basic amenities can come to the rescue. Additionally, this also suits the income volatility and high-risk profile of low-income households working in the informal sector. The efficient and successful delivery of projects and programmes in the redevelopment space is critical to the future of affordable housing in India

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# ASHA CHADHI PARWAN – DREAM COMES TRUE

-A Model Project under PMAY at Rajnandgaon, Chhattisgarh

MR. CHAHAT SHAH

MR. DEBESH CHAKRABORTY

MR. SOHAN GUPTA

**This project has easy transferability, any project which focuses on addressing the housing needs of a particular group/faction/gender residing in the same locality can be implemented by following what has been successfully executed in this project. By selecting such group of individuals as beneficiary in the PMAY and converging the benefits of multiple scheme, aided by holistic planning of project implementation can yield far-fetched results**

*Key Words: PMAY, Rehabilitation, Asha Chadhi Parwan, Convergence*

*Mr. Chahat Shah (chahatsshah@gmail.com) is Team Leader, PMU – UADD, Chhattisgarh. Mr. Debesh Chakraborty (c\_debesh@hudco.org) is JGM (Projects), HUDCO. Mr. Sohan Gupta (gupta.sohan945@gmail.com) is Deputy Project Manager – PMAY, Chhattisgarh.*

*In Rajnandgaon, Chhattisgarh 61 families suffering from leprosy, resided in a precarious conditions in a locality named Asha Nagar. Under Pradhan Mantri Awas Yojana (PMAY-U), they were selected as beneficiaries and through convergence with multiple government schemes, process of constructing all weather houses was initiated, to raise their socio-economic standard, inculcate faith in government policies and to provide livelihood. Enhanced access to state-sponsored nutrition programs have improved food security and health among the community, resulting in no new leprosy case. More children attend school, while women hold leadership positions within the community and have been supported to become self-sufficient. Due to livelihood options, family income has quadrupled; societal acceptance has increased; resulting in higher happiness-index. Through its community-led approach, the project empowers the marginalized groups to resist oppressive practices and access their basic human rights, restoring their dignity and transforming their lives for generations to come.*

## INTRODUCTION

Millions of people live in

slums across India and have been subjected to wide-scale demolition along with lack of government recognition. Leprosy is a disease which incapacitates a person, and when one has a community affected by it, rehabilitation of them is in itself a challenge. In Rajnandgaon town, Chhattisgarh there were 61 families suffering from leprosy, unable to arrange meals to eat, thinking about house was a distant dream while residing in precarious conditions in a locality named Asha Nagar. Though they were given shelters to reside in 1984, by the then collector, physical ailments and financial incapability made it impossible for them to maintain the housing; with passage of time they were treated as ghetto's, excluded and ostracized from the society. Every year in inclement weather conditions they faced extreme inconveniences, and without a permanent source

This community had been subjected to land expulsions, and in 1984 were shunted to the edge of the city resulting in few livelihood opportunities and was suffering from malnutrition, which forced them to resort to begging for livelihood.

of income they lived accursed life in precarious conditions. Hence, under Pradhan Mantri Awas Yojana (PMAY), they were selected as beneficiaries and through convergence with multiple state & central government schemes the process of constructing Pucca houses was initiated. They were selected not only to provide an all-weather house but also to bring them to mainstream, raise their socio-economic standard, inculcate faith in government policies & provide livelihood.

The primary focus of the project is to support leprosy affected communities in accessing government schemes to which they are entitled to. Under the initiative, secured land rights have been granted to build homes, which have acted as a foundation and have been a catalyst in rebuilding their lives. Enhanced access to state-sponsored nutrition programmes has improved food security and health among the community. More children attend school and have access to scholarships, while women hold leadership positions within the community and have been supported to become self-sufficient. Through its community-led approach, the project empowers the ostracized community to resist tyrannical practices and access their basic human rights, restoring their dignity and transforming their lives for generations to come.

Figure 1: Photograph showing the location and the Access Road - Asha Nagar



Lack of land rights has detrimental impacts on the residents, such as no security of tenure, unable to enroll children in school, excluded from basic services, not allowed to open a bank account or access government benefits. In this project of “Asha Chadhi Parwan” community mapping and survey of slum was performed by bringing together the use of drone and mobile based technology and

community participation. This information played vital role and was utilized to assign land rights to eligible residents – followed by up-gradation of the physical infrastructure like roads, drains, street-lights, community park, sanitation and clean water supply.

## AIMS AND OBJECTIVES

“Asha Chadhi Parwan” - “Dream Comes True” was the motto

while implementing this project. Respectable life, with self-earning, education to children, meals without pleadings and an all-weather House which was the wildest dream of Leprosy affected community in Asha Nagar, had to be successfully converted into reality. While making housing as a driving force, benefits of varied Central and State Government schemes had to be provided to the destitutes residing in this locality through convergence.

The primary aim of the project was to provide housing, with an objective to upgrade the habitat of these people along with socio-economic upliftment, to make the project self-sustainable and achieve the relevant targets set by the Sustainable Development Goals, New Urban Agenda and WHO's "Global leprosy strategy 2016–2020". This project demonstrates how upgrading slums via converging multiple government schemes is a viable development process and a model project. The objective of the project was to enable a critical mass of poor and marginalized people to empower themselves to achieve a better quality of life characterized by:

- land rights and safe housing;
- food security and access to secured livelihood opportunities;
- assured access to basic education and adequate health services;

- sustainable use and management of natural resources;
- options for appropriate family and community infrastructure and sources of energy;
- strong self-governing people's institutions (SHG) with equal participation of men and women;
- increased self-reliance, self-esteem and political awareness.

### **PMAY–NODAL / IMPLEMENTING AGENCY**

Urbanization is the process by which cities and towns grow and develop, it has provoked its fair share of 'by-products'. One of the most 'persistent' among them happens to be the pockets of poverty and neighbourhood decay, famously known as 'slums'. (GB). The 11th Sustainable Development Goal (SDG) focuses on mitigating the challenges in urbanization and aims to 'make cities and human settlements inclusive, safe, resilient, and sustainable', wherein its first target aims to 'ensure access for all, to adequate, safe and affordable housing and basic services and upgrade slums'.

Hence, the time was ripe when the government decided to focus on addressing issues of urban poor and slum dwellers and find options which

works in improving the living conditions without hampering their livelihood. State Urban Development Agency (SUDA) and Municipal Corporation Rajnandgaon (RMC) had together taken steps to address need of the hour of providing the sustainable housing for the leprosy affected community residing in the Ashanagar area in Rajnandgaon, Chhattisgarh.

RMC had the responsibility of acting as approving authority for the works being implemented, fund disbursement, overall planning and monitoring of the activities. While SUDA being the State level nodal agency was responsible for approval of the project at State and Central government level, monitoring of the work and providing appropriate funding.

### **Conceptualisation of project for leprosy affected people's Rehabilitation**

Leprosy, one of the Neglected tropical diseases, is generally associated with poverty, overcrowding thereby affecting the most underserved population of the country. The visible deformities of hand and foot and the accompanying sensory loss contribute significantly to the stigma faced by leprosy patients. This stigma and ostracization of patients severely affects social existence of the patients (affecting marriage, employment, etc.) and contributes to the spread of disease away from public



glare by reducing health-seeking behavior among the community for leprosy. (Abhiruchi Galhotra, 2019)

In India, total number of new cases diagnosed in 2017 were 1,26,164 (approximately 60% of the world's new leprosy cases). The highest prevalence of leprosy was seen in Chhattisgarh (2.25/10,000 population)

The WHO launched a 5-year “**Global leprosy strategy 2016– 2020**” in April 2016 titled ‘**accelerating towards a leprosy-free world**’. The global prevalence of leprosy according to Global leprosy Update 2017 is 0.25 per 10,000 population. South East Asia Region (SEAR) contributes about 73% of the global leprosy burden with the highest prevalence i.e. 0.6 per 10,000 population. India contributes the highest number of leprosy patients to the burden of leprosy all over the world (Abhiruchi Galhotra, 2019).

The spread of leprosy in a population is highly dependent on the variation in susceptibility of individuals and the intensity of contact with other individuals. Therefore, the main principles of leprosy control also include early detection of leprosy cases, as Leprosy can only be acquired by susceptible individuals. The new case detection rates in Chhattisgarh are 2–7 times higher than the national rates,

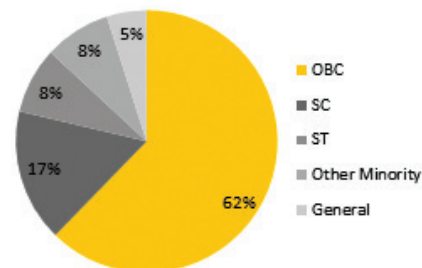
and in 2020, the predicted new case detection rates are 16.2 per 100,000 population in Chhattisgarh. As per the various estimates elimination in these regions will not be established before 2026 (Abhiruchi Galhotra, 2019).

Ashanagar is encompassing an area of approx. 1.46 hectare in ward 22 of Rajnandgaon Municipal Corporation, Chhattisgarh. A total of 61 families suffering from leprosy and physical disabilities were staying in this area since 1984, with a total population of 289 members, which includes 91 males, 110 females and 88 children. Most of them would beg for their daily needs, some did casual labor work while a few ferried commuters on a bicycle rickshaw. Social stigma associated with the disease left them with no permanent source of income. Unable to afford regular meals, thinking about owning a house was a distant dream for these residents.

Though this leprosy affected vulnerable people are entitled for various government-sponsored schemes, resulting due to lack of awareness of their rights and the ingrained inferiority felt by the community, it meant they were not accessing these privileges. This community had been subjected to land expulsions, and in 1984 were shunted to the edge of the city resulting in few livelihood opportunities and

was suffering from malnutrition, forcing them to resort to begging.

Figure 2: Socio-morphological bifurcation of the community: Proportion of marginalized communities in the Project



For reversing the systemic injustices and stigma faced by the leprosy affected community, Municipal Corporation Rajnandgaon designed a project “Asha Chadhi Parwan” that focused on supporting the community and bringing in paradigm shift by providing access to their fundamental rights to land, housing, education, health and dignity – while keeping gender equality as a central component.

#### **Project Costing, source of fund, Project Particulars, Infrastructures**

Major funding for the project has been provided by Central and State Governments via various schemes, out of which the Pradhan Mantri Awas Yojana-Housing for all (PMAY-HFA) Mission has played the pivotal role.

Till date approx. Rs. 1.37 Crore has been utilized in the implementation of the project which has been funded via PMAY-HFA Mission, while

from the Swacch Bharat Mission (Urban) & Municipal Corporation, this project has received funding to the tune of Rs. 28 Lakhs for construction of Toilets.

For minimizing the beneficiary share, various initiatives had been taken, like reusing of the dismantled material, construction in pairs, convergence with multiple schemes, livelihood options, resulting to which the houses were constructed with practically no beneficiary share, making it financially sustainable. Also, the beneficiaries have been provided with the employment opportunities making them self-reliant, hence through this

Figure 3: Floor Plan of individual Dwelling Unit

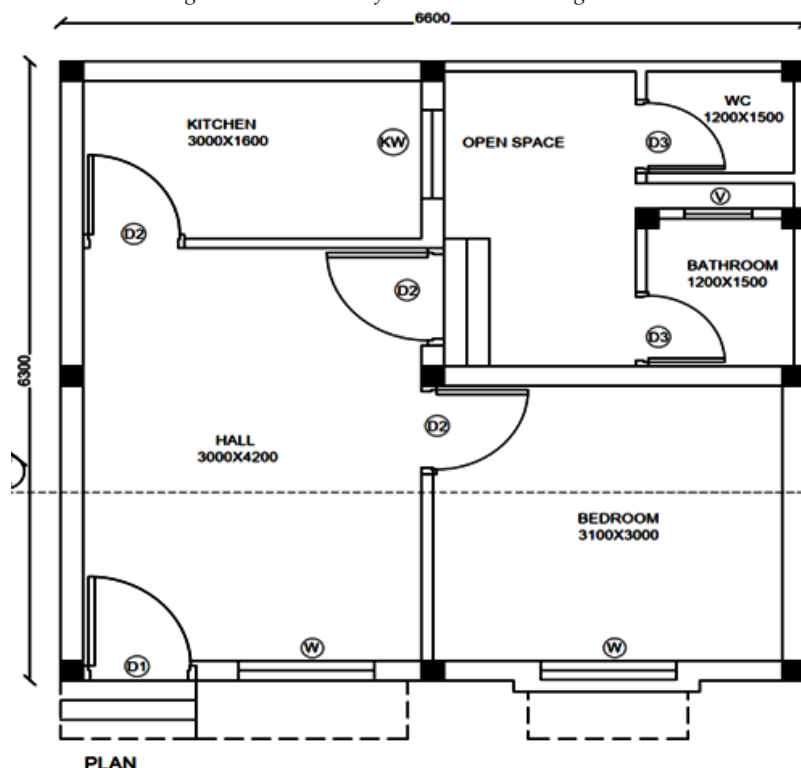


Table 1: Project Insights

Sr. No	Parameter	Value
1	Secured Land Right Area	92.9 SQMT
2	Built Up Area/Unit	34.7 SQMT
3	Open Area/Unit	58.2 SQMT
4	Individual Dwelling Unit Size	29.0 SQMT
5	Hall	12.6 SQMT
6	Bedroom	9.3 SQMT
7	Kitchen	4.8 SQMT
8	WC And Bathroom	2.8 SQMT
9	Cost of Individual Unit	Rs. 3.045 Lakhs
10	Grade of Concrete Used	M20
11	Concrete Quantity/Unit	17.61 CUM
12	Reinforcement/Unit	874.6 KG
13	Central Share/Unit	1.5 Lakhs
14	State Share/Unit	0.76 Lakhs
15	Funding via PMAY - U	137.25Lakhs
16	Central Share	91.5Lakhs
17	State Share	45.75 Lakhs

project the financial needs for future repairs, maintenance of the project is also catered to.

For overall implementation of the Pradhan Mantri Awas Yojana - Housing For All (PMAY- HFA) mission in the State of which this particular project is also a part the State Government has raised funds from the Nationalized Bank, State Bank of India amounting to Rs. 825 Crore as state share to mitigate the funding requirement in the implementation process.

## CONVERGENCE AND BENEFITS

To achieve the aim of Pradhan Mantri Awaas Yojana of providing Housing for All, State Government of Chhattisgarh

Table 2: Details of benefits of various government schemes provided via convergence to the beneficiaries of Ashanagar.

Sr. No	Name of Scheme	Service/ Infrastructure Provided	Socio-Economic Benefits/ Impacts
1	Amrut Mission – Central Funded, Bhagirathi Nal Jal Yojana - State Funded	Water Supply, Potable Water Tap	Better Health, Time Saving
2	Swachh Bharat Mission – Central Funded	Toilet	Cleanliness, Sanitation
3	Saubhagya Yojna – Central Funded`	Electricity	Improved Quality Of Life
4	Ujjawala Yojana – Central Funded	Gas Connection	Better Health, Time Saving, Reduced Indoor Air Pollution
5	Pushp Vatika Yojana - State Funded	Garden	Good Environment, Clean Air, Environmental Up-Gradation
6	Training Via NULM And Employment in Khadya Gram Udyog And Chhattisgarh State Skill Development Authority (CSSDA) - State Funded	Handloom Business	Employment, Empowerment, Economic Up-Gradation
7	Aanganwadi - State Funded	Free Education and Medicinal Facilities	Better Health, Nutrition, Education, Improved Quality of Life
8	Jan Dhan Yojana – Central Funded	Bank Account	Direct Benefit Transfer (DBT) in beneficiary account.
9	Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) – Central Funded	Government-Backed Life Insurance Scheme	
10	Pradhan Mantri Suraksha Bima Yojana (PMSBY) – Central Funded	Government-Backed Accident Insurance Scheme	
11	Social Security Pension Scheme – Central Funded	Rs. 350 Per Month (State Scheme)	To Assure a Respectful Life, Financial Assistance Are Provided To The BPL, PWD's (Persons With Disabilities) And The Dwarf Persons.
12	Atal Pension Yojna – Central Funded		Old Age Income Security
13	Indra Gandhi National Widow Pension – Central Funded	Rs. 350 Per Month (Central Contribution - Rs. 300, State Contribution - Rs. 50)	To Assure a Respectful Life, Financial Assistance Are Provided to The Widows Living Below Poverty Line (BPL).
14	Indira Gandhi National Disabled Pension – Central Funded	Rs. 500 Per Month (Central Contribution - Rs. 300, State Contribution - Rs. 200)	To Assure a Respectful Life Financial Assistance Are Provided to Severe and Multi-Disabled Persons Who Are Living Below Poverty Line.
15	Rashtriya Poshan Mission – Central Funded		Improve Nutritional Status of Children Up To 6 Years, Adolescent Girls, Pregnant Women and Lactating Mothers
16	Indira Gandhi National Old Age Pension – Central Funded	# Age Group 60 To 79 Year - Rs. 350 Per Month (Central Contribution - Rs. 200, State Contribution - Rs. 150)  # Age Group 80 Years Or Above - Rs. 650 Per Month (Central Contribution - Rs. 500, State Contribution - Rs. 150)	To assure a respectful life, financial assistance are provided to the BPL aged persons.
17	Mukhya Mantri Cycle Sahayta Yojna - State Funded		Distribution of Free Cycle/Tricycle



took various measures for these neglected people and provided financial assistance to the urban poor families living in dilapidated and thatched roof (Kutchra) houses for construction of a house and also provided land to the landless poor along with various other services via convergence of several Central & State Sponsored schemes as mentioned below: -

### INNOVATIVE – BEST PRACTICE ADOPTED

The project is innovative in three ways:

- the way in which it was developed and implemented through convergence of schemes,
- the socio-economic impact on communities suffering from communicable disease like Leprosy and
- the formalization of informal settlement and uplifting the skillsets of the women.

Implementing the housing scheme in convergence with multiple government sponsored schemes has been the innovative approach adopted while implementation of this project. Also, designing a house which is differently-able friendly friendly, semi-detached house style has resulted in lower cost of construction with practically no beneficiary share. As, this project focused on upliftment of socio-economic standards and providing safe, sustainable,

resilient and hygienic habitat; the employment opportunity, education, health services, has resulted in no new cases of Leprosy in the community, also the patients with grade 2 deformation (G2D) has also not increased, hence this approach of treating the leprosy/ Hansen's Disease is also an innovative model for replication in high-endemic regions.

The focus on women in informal settlements in this project is another innovative factor. Providing better homes,

the key workplace for many women, empowers them to earn increased incomes. As conditions in their homes are improved and comfort is increased throughout the day and night, women are also given more control over the type and amount of work they do. The focus on women in informal employment, within initial informal settlements is also innovative, wherein they are provided with training in Handloom & Silkworm Breeding (Sericulture).

### Timelines

Table 3: Project Timelines

Sr No	DATES	Significance/Achievement
1	25/02/2018	Conceptualization
2	27/02/2018	First community meeting with beneficiaries
3	03/03/2018	Survey & measurement of the Dilapidated (Kacha) House for DPR preparation.
4	20/03/2018	Applying for Land Record (Patta) renewal for DPR preparation
5	27/03/2018	Approval for temporary Land Record (Patta) & distribution of copy of temporary Patta for DPR preparation
6	30/06/2018	DPR sanction by GOI and subsequent disbursement of funds
7	04/08/2018	Distribution of Permanent Land Record (Patta) by Hon. Chief Minister of Chhattisgarh, State
8	15 /08/2018	First Foundation Geo-tagged in Asha Nagar
9	31/01/2019	First house completion
10	11/09/2019	50% houses are completed & Occupied in Asha Nagar
11	23/10/2019	Community Garden completion
12	20/03/2020	100% houses are completed & Occupied in Asha Nagar

## ACHIEVEMENTS – SDGS, SUSTAINABILITY, TRANSFERABILITY

The Asha Nagar project is not only addressing the needs of the hour but is also focusing in making the development sustainable by achieving the targets as set by the Sustainable Development Goals (SDGs), New Urban Agenda (NUA), along with it, this project is also addressing the target set by WHO in ‘Global leprosy strategy 2016– 2020’.

Asha ChadhiParwan Project fulfils various targets of 10 out of 17 United Nations Sustainable Development Goals 2030.

Providing housing in a self-sustainable model with minimum beneficiary share has been the key feature of this project. However, in this project emphasis was also given on upgrading the community’s socio-economic standards and was focused on supporting the community to access their rights to land and housing, education, health and dignity – with gender equality as a central component. Implementation of the project through convergence of numerous Central and State Government sponsored schemes has been a major feature of this project which has resulted in overall upliftment of the community by providing a safe,

environmentally sustainable, Clean and hygienic habitat.

Table 4: List of targets as set by United Nations Sustainable Goals which are being achieved by the Asha Nagar Project

Sr No	Goal	Targets Achieved
1	Goal 1: No poverty - “End poverty in all its forms everywhere.”	Achieved targets 1.1, 1.2, 1.4 & 1.5 by providing livelihood opportunities to both males and females, built resilience of the poor and vulnerable.
2	Goal 2: Zero hunger - “End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.”	Achieved targets 2.1 & 2.2 by specifically developing the Aanganwadi along with Primary Health Centre, which increased the nutritional value of food being consumed by the vulnerable people.
3	Goal 3: Good health and well-being for people – “Ensure healthy lives and promote well-being for all at all ages.”	Achieved target 3.3 by treating the patients suffering from Leprosy a tropical and communicable disease, reduction in further deformations.
4	Goal 4: Quality education - “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.”	Achieved targets 4.1 & 4.2 by specifically developing the Aanganwadi and a Pre-Primary school in the vicinity.
5	Goal 5: Gender equality - “Achieve gender equality and empower all women and girls.”	Achieved targets 5.1 & 5.a by providing employment opportunity in Handloom and Sericulture.
6	Goal 6: Clean water and sanitation - “Ensure availability and sustainable management of water and sanitation for all.	Achieved targets 6.1 & 6.2 by providing Tap water under Bhagirathi Nal Jal Yojana and an Individual toilet under Swachh Bharat Mission.
7	Goal 8: Decent work and economic growth - “Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.”	Achieved target 8.5 by providing employment opportunity in Handloom and Sericulture and getting paid based on Collectorate Man-Day Rate.
8	Goal 10: Reducing inequalities - “Reduce income inequality within and among countries.”	Achieved target 10.2 by providing secured land right, house and employment opportunities.
9	Goal 11: Sustainable cities and communities - “Make cities and human settlements inclusive, safe, resilient, and sustainable.”	Achieved target 11.1, 11.3 & 11.7 by providing access to adequate, safe and affordable housing and basic services and upgrading slum, provided universal access to safe, inclusive and accessible, green and public spaces to all, and developing inclusive and sustainable settlement.
10	Goal 16: Peace, justice and strong institutions - “Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.”	Achieved targets 16.6 & 16.7 by developing transparent system and participatory decision-making during implementation of the project.

(United Nations, 2020)

## Sustainability

*Financial-* For minimizing the beneficiary share various initiatives had been taken, like reusing of the dismantled material, construction in pairs, convergence with multiple schemes, livelihood options, which resulted in houses being constructed with practically no beneficiary share, making it financially sustainable. Furthermore, due to the convergence-based development model, beneficiary share was reduced due to Bhagirathi Nal Jal Yojana, Swachh Bharat Mission, Saubhagya Yojana to the tune of approx. Rs. 5,000, Rs. 11,000 and Rs. 1,500 respectively.

*Social & Economic-* With the help of Khadya Gram Udyog and Chhattisgarh State Skill Development Authority (CSSDA) a Government Handloom business has been setup for the leprosy affected families, for residents who have lost body parts and cannot do laborious works, Silk & Forest Department has allotted 10 Acres of land for Kosa Silk Worm Breeding and according to the Collectorate Man-Day Rate the workers are provided a daily wage of Rs. 341 and all such activities have been taken care by the Self-Help Group (SHG) of that area. At least one member from each household, preferably a woman, has been brought under this Self-Help Group network.

This group serves, as a support system to meet their financial and social needs. As a result of these activities the average income/family has increased manifold and have uplifted the socio-economic standards of this family along with acceptability in the society.

*Cultural-* Leprosy had not only impacted the physical strength of these people but had tattered their will and zeal to survive. Fights they had to put up against all odds, for their daily needs was harsh and cumbersome. With this project of Ashanagar there has been a paradigm shift in the way these people now lead their life, resulting in bringing back the cultural, emotional and social values in their life. This project has made immense impact in the behavioral patterns of its residents and has resulted in bringing smile, enthusiasm and excitement back in their life.

*Environmental-* For construction of the houses, materials required were purchased in bulk, raw material received after dismantling the rag houses were reused for construction of new house, the houses were constructed in pairs so that a common wall can be used between two beneficiaries which could again reduce the cost. With these measures taken the project is in a way 'Existenzminimum' wherein the design approach aimed at maximizing both

quality and functionality of the residential layout, while minimizing its dimensions, resulting in minimal impact on the environment.

*Institutional-* The practices followed during implementation of this project can be replicated at various levels wherein the projects focusing on a particular group/faction/gender can be implemented by utilizing the benefits available under multiple government schemes.

## Transferability

This project has easy transferability, any project which focuses on addressing the housing needs of a particular group/faction/gender residing in the same locality can be implemented by following what has been successfully executed in this project. By selecting such group of individuals as beneficiaries in the PMAY and converging the benefits of multiple scheme, aided by holistic planning of project implementation can yield far-fetched results which are beneficial not only for the citizens, but also for the implementing agencies and the society at large.

Multiple projects in similar line are being implemented in the State of Chhattisgarh in similar fashion as follows: -



Table 5: Other Community Based Projects in State.

Sr No	Location	Community Benefitted
1	Gandai, Chhattisgarh	Rehabilitation of Commercial Sex workers Community.
2	Kanker, Chhattisgarh	Rehabilitation of Community affected by Left Wing Extremism.
3	Bodla, Chhattisgarh	Rehabilitation of Baiga an Indigenous (Tribal) Community facing extinction of their culture and tradition.

## RECOGNITIONS

The Ashanagar project has bagged following recognitions during and after its implementation: -

- SKOCH Award - Top Ranking Housing Project in India- Under Category of "Slum Redevelopment".
- Nominated by State Government for HUDCO Awards – Housing, Urban Poverty and Infrastructure – "Community Partnerships & Community based capacity building/ livelihood generationsolutions" & "Slum and Settlement upgrading and Improvement", result waited.

- Nominated by State Government for PMAY awards in Convergence Projects, result waited.
- Nominated by Rajnandgaon Municipal Corporation for a State Government Award, result waited.
- Various State and National level delegations have visited the project site for understanding the implementation framework and benefits of this project.

## WAY FORWARD

The current project has been successfully completed. Based on the success of the current project and its learnings, this model of implementing project through convergence of numerous central and state government sponsored scheme is successfully being replicated in 827 projects of the state benefitting 40,036 families, with variations in implementing methodology and extent of convergence of government programs as per the requirement at local ground level requirements and available resources.

## CONCLUSION

The project has been seen as a major force of imbibing self-respect, socio-economic upliftment and other benefits amongst beneficiaries. On evaluating the outcome of the project, following are the benefits of the project implemented:

- With this project, aim to convert a slum into a society with all facilities is being fulfilled.
- People of Asha Nagar are excited, as before this project they were living their life in a slum and now they are going to live rest of their life in a clean society.
- People have got a respectable job in handloom industry, Silkworm Breeding (Sericulture) and have a permanent source of income.
- Through education and medical facilities available in aanganwadi the children, are learning new things along with being disease free.
- The special emphasis on women, children, and those with disabilities is expected to flush out more hidden leprosy cases.

Key benefits, which the community has achieved, based on the study by Administrative Staff College of India (ASCI) an independent agency ((ASCI), 2020),

- Number of patients with Grade 2 Deformation (G2D) has not increased,
- No New cases both in children and adults,
- Family income has quadrupled, (Previous – INR 3000/ Month, Current – INR 8000/ Month)

- Societal acceptance has increased,
- Conversion from being beggars to bread earners,
- Increase in happiness index,
- Improved nutrition, food security and access to secured livelihood opportunities;
- assured access to basic education and adequate health services;
- increased self-reliance, self-esteem and political awareness.
- Slum up-gradation with improved environment, socio-economic condition, beneficiary owned house with legal land right.

Figure 4: Drone image Original Condition of Asha Nagar



Figure 5: Original Condition of Asha Nagar



Figure 6: Original Hutment in Asha Nagar

Figure 7: Drone image Present Condition of Asha Nagar

Figure 8: Present Condition of Asha Nagar



Figure 9: Present Semi-detached house in Asha Nagar



Figure 10: Completed House under the PMAY Project







Figure 11: Education, Employment Programmes etc



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## CITYNET INDIA NATIONAL CHAPTER AT HUDCO ORGANIZED WEBINAR ON 'AFFORDABLE RENTAL HOUSING FOR MIGRANT WORKFORCE IN POST COVID19 ERA'

CITYNET India National Chapter at HUDCO, New Delhi organized Webinar on 'Affordable Rental Housing for Migrant Workforce in Post Covid19 Era' on 27TH August 2020 in which 160+ delegates from Abroad and India participated. The delegates from India were from various Urban Local Bodies and State Governments. Mr. Amrit Abhijhat, Joint Secretary & Mission Director (PMAY – HFA), Ministry of Housing & Urban Affairs, Govt. of India was the Key Speaker.



*Mr. Amrit Abhijhat, JS & MD (PMAY-HFA) giving the keynote address ( top right in the picture). Also seen are Dr. S.K. Gupta, EDT; & Dr. A.K. Sen, Fellow, HUDCO's HSMI*

Other Speakers were Ms. Anaclaudia Rossbach, of Cities Alliance, Brazil; Prof. Piyush Tiwari, of University of Melbourne, Australia; Dr. S.K. Gupta & Dr. A.K. Sen of HUDCO's HSMI; and Dr. Vijay Jaganathan, Secretary General CITYNET. The Webinar discussed various rental housing options for migrant workers and urban poor from different countries including the recently launched Government of India's Affordable Rental Housing Complexes (ARHCs) Scheme; and rental housing models in Sao Paulo, Brazil and Australia. One of the rental housing models of HUDCO's HSMI Research Study on 'Viable Rental Housing Model for Promotion of Rental Housing in India', i.e. rental housing for migrant workers was also presented in the Webinar.



*Clock-wise from bottom right: Ms. Anaclaudia Rossbach, Dr. Vijay Jaganathan, Prof. Piyush Tiwari, & Dr. A.K. Sen,*

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