



## **Urban renewal for Affordable Housing Plot-level Redevelopment and In-situ Redevelopment of squatter settlements**

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**ABSTRACT:** The problem of Urban Housing has always been an inevitable outcome of growing urbanization. In trying to cope with it cities have typically grown physically in a horizontal sprawl with largely low rise, low density urban forces necessitating extension of lines of transportation and services beyond reasonable limits or in case of developing countries have developed as high density congested areas compromising on social and physical infrastructure leading to sub-standard living conditions.

An ever growing population and increasing activities in a developing city brings about tremendous pressure on the urban land and its housing sector. As the needs and demand change with time, the existing stocks of buildings are altered to suit these changes. In this context medium to high rise, high density development options suggest themselves as a viable means of optimizing use of land & infrastructure (Need of the day is that Infrastructure in principle should promote design of higher densities). Urban Renewal option is a viable means of using full land potential and to fulfil the changing needs. We need to focus and analyze these process of transformations, stakeholders involved in the process, market forces, urban governance system and the impact on the city development.

This paper tries to focus on two types of redevelopment activities which are plot-level redevelopment and in-situ redevelopment of slums and squatters. How these redevelopment activities under proper guidelines can provide solution to housing shortage is very important. This paper also focusses on how private developers can be lured into providing affordable housing through redevelopment activities with the help of proper incentives. We need to develop a successful framework for the best use of land potential and revival of the city to overcome this problem of affordable housing and substandard living conditions through redevelopment.

**Keywords:** Affordable housing, builder floor, in-situ up gradation, plot redevelopment, slum redevelopment, Urban renewal.

### **I. INTRODUCTION**

Over half of the world's population now live in urban areas. By 2050 this will have risen to 70%. In the industrialized world, cities are bursting at the seams, struggling to meet the needs of their citizens. Creaking, outdated infrastructure, cars clogging up the roads, and buildings that are literally leaking energy are not exactly the picture of urban health. 'Decent, affordable housing is fundamental to the health and well-being of people and to the smooth functioning of economies. Yet around the world, in developing and advanced economies alike, cities are struggling to meet that need. If current trends in urbanization and income growth persist, by 2025 the number of urban households that live in substandard housing could grow to 440 million, from 330 million. This could mean that the global affordable housing gap would affect one in three urban

dwellers, about 1.6 billion people.' [1] The situation is even worse in parts of the developing world, with the poorest countries least equipped to invest in the basic urban infrastructure like "water, sanitation, housing" that is needed to cope with rapidly growing urban populations.

Unfortunately there is no simple formula for converting a sprawling, polluted, congested 20th century metropolis into a clean, free flowing, low-carbon urban utopia. Planning, together with innovation, investment and cooperation is exactly what is needed now. So how can we achieve this?

### **II. STATE OF ART**

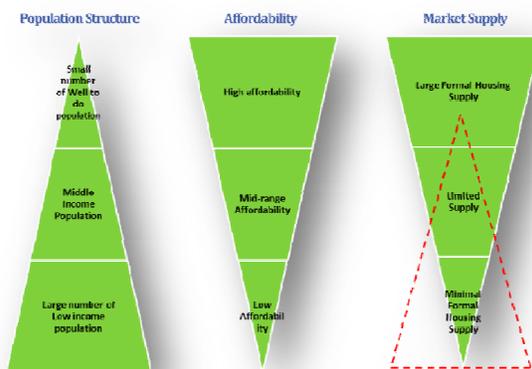
Urban centers of developing countries both big and small are beset with a number of problems, India being a developing country is no different.

The main problems, which our cities face, are housing shortage, haphazard development, over-crowding, congestions, urban poverty, slums, poor infrastructure, environmental pollution, urban governance, mismanagement of urban resources and change in the spatial pattern of land-use and activity.

Growing concentration of people in urban areas has resulted in an increase in the number of people living in slums and squatter settlements. Huge housing costs in urban areas have induced the economically weaker sections of the society to occupy the marginal lands typified by poor housing stock, congestion and obsolescence. It is apparent that substantial housing shortage looms in Urban India and a wide gap exists between the demand and supply of housing, both in terms of quantity and quality.

India's urban population has grown from 28 percent in 2001 to 31 percent in 2011 with more than 370 million people residing in cities and this share is estimated to reach 50 percent by 2050.[2] Thus, urbanization presents itself with a daunting task for the country to stimulate a sustainable and inclusive growth. As the urban population and incomes increase, demand for basic services such as water, transportation, sanitation, affordable housing will increase manifold in cities of every size and type. This has a serious consequence on the environment if it is not managed in an appropriate manner. The Ministry of Housing and Urban Poverty Alleviation (MoHUPA) estimates an urban housing shortage of nearly 18.78 million households in 2012. 97% of this housing shortage is in EWS and LIG sector. The government sponsored housing schemes have failed to meet the ever growing target to deliver housing that gives value for money. Thus, there is a need that apart from public housing, private sector also provides affordable housing to reduce the housing shortage [3].

Population structure, Affordability and Market supply for housing supply is as follows:



**Fig. 1.** Population structure, affordability and Housing supply market(source: Author).

Market supply for affordable housing is completely opposite with respect to the huge housing shortage in the lower income groups.

Old areas in the cities are congested and the inhabitants in these areas were living there since decades. Relocating this population is next to impossible. In the metropolitan areas there is always scarcity of land, people migrating from smaller cities or rural areas for better economic options often end up living in a squatter or slums nearby to their work place. Relocating them in the outskirts of the city does not provide a solution as they come back to stay in the squatters near to their work place instead of travelling so far daily which consumes both their time and money. Thus in-situ redevelopment could be the best way to deal with such situations and can help in providing affordable housing to all economic groups.

Renewal or redevelopment of an area could be of different types and at different scales for various reasons but the focus of this paper is on two types of redevelopment projects:

- Plot level redevelopment
- In-situ redevelopment for slums and squatters

That can primarily help to provide housing stock in the lower income groups without increasing the city limits over and over again.

### III. PLOT LEVEL REDEVELOPMENT

This type of redevelopment can be one option that can cater to the affordable housing needs for Middle Income Groups in large cities where availability of land is an issue. It can lead to a compact development of the city. It can provide a good quality environment to the residents and help in improving the living standard within affordable ranges.

In this type of redevelopment developers either get in partnership with the owners or they purchase the property for redevelopment. The percentage share of profit or property varies from place to place or location to location based on the land value. This trend boomed after the Government gave a nod to building third storey (in Delhi). This activity is at the smallest scale where redevelopment process is happening only of the building or the plot (in many cases plot amalgamation is also done).

#### A. Factors promoting plot level redevelopment

**Owners Desire** - Optimum use of their land and earn profit out of it.

**Increasing land Value** - Over the years, increasing land value is one of the main factor of causing apartment activity on plots because majority of people cannot afford to own a plot.

**Increasing Population of Different Economic Profiles** - With the limited high status land and increasing population high economic profile, the trend of independent floor in high status area increases.

The USP of plot level redevelopment is that it allows one to own an affordable independent dwelling unit as compared to independent house.

**B. Impact of Plot Level Redevelopment**

There are many positive and negative impacts of such redevelopment activity. On one hand when this plot level redevelopment adds to the housing stock it also adds extra pressure on the infrastructure and changes the urban fabric of the city.

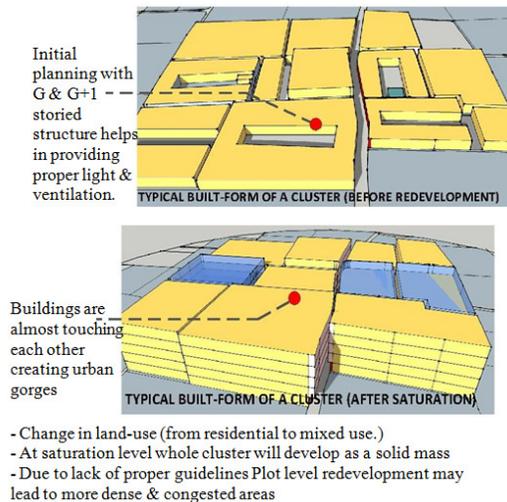
**Positive Impacts**

- Better utilization of high valued land.
- It adds to the housing stock and helps in reducing the housing shortage of the city.
- It helps in achieving the objective of re-densification
- Built-form up-gradation (the dilapidated building structure is replaced by a new durable building with better services)
- Mixed use activities for maximum returns.

**Negative impacts**

- Unaffordable to large segment of people in the city.
- Leads to very high densities
- Infrastructure - It is highly impacted in the areas having density beyond their holding capacity which leads to higher stress on Infrastructure.

The present scenario is that because of lack of proper guidelines for plot level redevelopment there is total imbalance between built-form, road widths and infrastructure facilities both social & physical. In unplanned areas the situation is even worse with more than 90% ground coverage and encroachment on roads. There is predominant change in land-use from residential to mixed-use all along the road side after redevelopment of the plot.



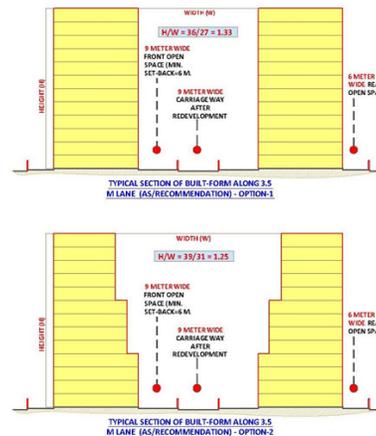
**Fig. 2.** Positive and Negative Impacts of Plot level redevelopment(source: Author).

**C. Guiding The Plot Level Redevelopment**

Controlling the plot level redevelopment through proper guidelines to negate the negative impacts of the activity is very important. It leads to congestion plus continuous transformation of plots over the years may result in the loss of authentic urban character of the city thus it is very important that such redevelopment activity is guided by byelaws that are in consent with the character of the city and built environment which is very crucial for the conservation of the urban fabric. If this means to frame flexible byelaws for the controlled urban design development of the area with respect to the city’s character, it must be done.

To counter the problem of congested built environment after redevelopment as per the current trend few options like providing higher FAR for plot amalgamation and gifting the front strip of land to the government for road widening may lead to better development.

Plot level redevelopment is a viable option for affordable housing for Middle Income Groups. If this development is controlled through proper guidelines and supported with infrastructure for higher densities it can provide a possible solution to housing shortage without compromising with the urban fabric of the city. The much-used management phrase, **“you can only manage what you can measure”**. Plot level redevelopment has the potential to control the horizontal sprawl of the city. Thus not only it can help in adding housing stock but also in preserving agricultural land and other depleting resources because of the continuous expansion of cities.



**Fig. 3.** An example of altering byelaws to reduce congestion(source: Author).

Amalgamation of plots should be encouraged. Plot amalgamation should be permitted even for just two plots. The FAR and incentives could be calculated proportionately [4].

Plot level redevelopment is already happening at various scales in different cities in different areas. It is a good option to increase housing stock for MIG's and LIG's. For the successful progress of this it is very important the redevelopment process is controlled in consent with the infrastructure facilities provided. Height limits, population densities etc. should be kept according to the holding capacity of the areas.

Identify the holding capacity of all the areas within the city and delineating them into three major categories should be as follows:

**Intensively developed** - For areas which are already under pressure.

**Moderately developed** - For areas which are likely to be under pressure due to expanding trend.

**Sparsely developed** - For areas which have potential for higher absorption.

#### Transfer of Development Rights

- Identification of Influence zone (like MRTS/Major Transport Corridor), where incentive FAR can be given for achieving maximum plot potential in such areas.
- TDR Policy should consider/include these influence zones along Major transport corridors (Transit oriented development) for the proper utilization of development rights in case of redevelopment.

TDR receiving areas should be those that have *more Holding capacity* to support more development than what is allowed by existing bylaws or Development control regulation. At settlement level the transfer of development right should be from intensely developed settlement to other areas and not vice-versa.

### III. IN-SITUREDEVELOPMENT

Squatter settlements are the most unrecognized and poorest neighborhoods with irregular settlements sited on private or government owned land. There is little or no access to services, and these are frequently located under bridges or on canal banks and railway lines.

Growing concentration of people in urban areas has resulted in an increase in the number of people living in slums and squatter settlements. These slums and squatters provide an 'affordable' house but after compromising the living standards and infrastructure facilities which ultimately leads to poor health conditions both mentally and physically. Improving the substandard housing is a priority for keeping world healthy and safe. For the same reasons there have been many policies for Slums & squatters in India be it JNNURM, RAY or recent Pradhan Mantri Awas Yojna that talks of in-situ redevelopment along with other strategies to provide affordable housing for all. A major amount of housing shortage which is mainly in EWS and LIG category can be addressed through redevelopment of squatters.

In-situ redevelopment of slums and squatters is a redevelopment activity at a bigger scale than plot level redevelopment. The main differences between these two types of redevelopment is the scale and the other is the land ownership. While one is legal ownership of land (*plot level*) the other is on illegal squatters and thus is more crucial. While one provides affordable housing to Middle Income Groups the other focusses on EWS and LIG's.

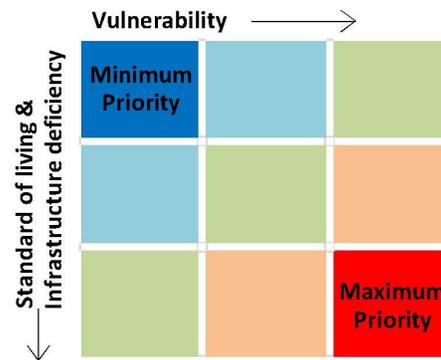


Fig. 4. Prioritization of squatter clusters based on its conditions (source: Author).

In-situ redevelopment of slums and squatters has been a much discussed topic but how to go about it for a successful result is still to be established. Just mentioning in-situ redevelopment in policies does not help, we need to have an in depth understanding of it to make it possible in practice.

#### A. Need of Grading of Settlements

Grading of settlements is necessary for two basic reasons. *Firstly*, all the settlements are not the same and they don't have equal level of services thus it is important to grade the settlements so that we know where a particular settlement stands in term of infrastructure. *Secondly*, it is important that more vulnerable settlements must be given higher attention and should be a priority for redevelopment.

Prioritization of clusters is important which should be based on the Vulnerability Index, Standard of living Index and Infrastructure deficiency.[5]The determinants of these indexes would be as following:

- Infrastructure deficiency – based on provision of physical infrastructure like water supply, drainage, toilets, garbage disposal etc.
- Standard of living Index – based on space per person, type of structure, separate kitchen/toilet, condition of structure (dampness & ventilation) etc.
- Vulnerability Index – based on their socio-economic aspects

All the above parameters should be provided with the weighing factor as per their importance for standard living condition.

Grading has to be done at 3 levels - Household level, Cluster level & socio economic level. Scores should be provided as per the existing condition of the settlements.

The total is the multiplication of the weighing factor & the score provided to the settlement. **Higher the score, worse is the condition of the settlement area.**

Another main factor is that whether the squatter settlement should be redeveloped or resettled. This should be decided on the **tenability of the slums** (as discussed in RAY if the slums are on hazardous lands or inlands which are designated as protected or forest lands and other conflicting land uses etc. the squatters should be relocated on nearby lands).

#### *B. Guiding In-situ Redevelopment of Slums*

Once the prioritization of the settlement has been finalized the second most important factor that comes into play is the implementation body for the redevelopment process.

Over the years it has been confirmed that the scale of housing shortage is huge and government alone cannot provide affordable housing. It will act as a facilitator to encourage private sectors to provide affordable housing. The only way to lure private developers into providing affordable housing through redevelopment of squatter settlements is to provide them optimum incentives in form of **sale component** with respect to the rehab component which can fulfil their profit margins.

The ratio of sale component w.r.t. rehab component for the implementing body greatly depends upon the land potential of the redeveloping site. This Distribution of incentive FAR cannot be same throughout the city instead it should be distributed on the basis of locational attributes & its land value. For example

- **Rehab. component : Sale component = 1:1** (where land value is low -majorly in unplanned area).
- **Rehab. component : Sale component = 1:0.75** (where land value is medium - majorly in planned areas).
- **Rehab. component : Sale component = 1:0.5** (where land value is very high - majorly in planned areas).

These areas should be marked in the master plan of any city for successful in-situ redevelopment of squatter settlements.

Extra FAR should be given as *TDR* that can be used in other plot or can be sold in the open market (within notified area), if the full FAR not achieved because of no clearance from AA/Fire Department and other statutory bodies. Again this *TDR* concept should be

applied on the basis of the holding capacity of the area as discussed earlier.

Another important determinant of sale component should be the type of activity allocated i.e. whether it is residential or commercial in nature. For commercial activity incentive FAR can be reduced w.r.t. rehab component as commercial activity may lead to more profits (again it will be based on the land value and locational attributes).

Next major factor that controls the in-situ redevelopment of any squatter settlement is the **ownership of land** on which the squatters exist. In most cases the squatter settlements exist on government lands in which it is easier to go for redevelopment. In case of private land owners incentives in form of additional floor area, change of land use, transferable development rights and concession in fees and charges etc. to land owners who can part with their land for slum in-situ redevelopment should be provided to encourage the activity.

Since this in-situ redevelopment majorly caters the EWS and LIG the standards of building can be altered compared to MIG/HIG housing as it is very difficult to provide similar standards at much lower costs.

**Alteration of standards** must not mean compromising with the livable conditions in any area. Urban pattern in organically grown settlements has proved to be more humane and inclusive. The redevelopment should not mimic the lifestyle and standard set by the elite but only to provide modern standards of health, safety and hygiene. The parameters followed in regulated areas cannot and should not be followed here. The bye-laws should encourage small houses and the streets should be pedestrianized.

#### *C. Community Participation*

Community development is essential for successful redevelopment project by way of sharing of costs, making decisions and in being responsible for the maintenance of the services, as well as ensuring public accountability in slums. It not only helps to overcome social exclusion of marginalized groups but also helps in bridging the gap between different income groups that has caused fragmentation in the society.

## **IV. CONCLUSION**

India's urban population has grown from 28 percent in 2001 to 31 percent in 2011 with more than 370 million people residing in cities and this share is estimated to reach 50 percent by 2050.[6] This would potentially redefine India's image from a country considered, till recently, to be living in its villages to a country that will reside in its cities. It is envisaged that this urban transition would bring in both opportunities and threats simultaneously and is expected to play an enormous role in bringing in economic mobility and fuel social

transformation. Transformation is the single most consistent factor in the life of a city. **How to control or direct that transformation to get the best combination of benefits from renewal and redevelopment is perpetual for the planner** [7].

Cities are centers for economic and cultural growth. Quality of the built environment is a crucial factor in cities ability to compete internationally. The concept of compact cities i.e., High rise, high density development is a good option if supported by adequate infrastructure and regulated environmental provisions. Redevelopment is a process that can have a major impact on many urban landscapes, and can play an important role in the development of cities around the world improving their attractiveness and the quality of life of their inhabitants.

It not only can help to cope up with the problem of affordable housing but also can help in changing the overall urban fabric of the depleting city (conserving the urban and social character).

In most countries, affordable housing is a kind of housing that provides the minimal amount of dwelling space per person with all the basic facilities, as well as access to employment and social services. Most cities that are successful in their housing policies choose not to expand their borders and focus instead on the development of the existing districts.

Redevelopment at different scales can not only help to overcome the gap between housing demand but also result in inclusive development by incorporating people of different economic strata in a compact plan. Achieving this alone is impossible for the government as the scale of housing shortage is huge thus it is very important that these redevelopment projects are

developed as PPP projects and more and more private developers are encouraged to participate in redevelopment projects for affordable housing.

*Urban renewal programmes must always involve the public, private and non-profit sectors and put local communities at the heart of those partnerships.[8]*

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