Transforming Attitude to Slum Rehab - Need for a Paradigm Shift

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Abstract: *Apart from food and clothes, housing is the basic necessity of humans, which not only protects them from the surrounding adverse conditions but also gives a sense of well-being and courage to develop further. The issue of providing housing for slum dwellers is not a challenge in the Indian context but throughout the world. Moreover, recent developments on the industrial and economic fronts have augmented the rates of migration. Besides, this migration is unidirectional, wherein people move from rural to urban areas. In the last few decades, this movement has always seen an upward trend adding enormous pressure on the receiving community as well as the governing bodies in the urban areas. Often, it has been witnessed that the people, especially belonging to the weaker sections end up in slums. However, the regular addition of people in the slums makes their life miserable. Since these people are part of society so they must be required to rehabilitate. Slum plays an important role in the metropolitan cities, they provide essential services to the urban system and much needed a labour force to fuel urban dynamism and they improve their chances of survival by whatever meagre income they receive in return. Needless to say that slums and the rest of the city has a symbiotic relationship. Recognizing this fact, slums are viewed as housing in improvement. It is indeed the issues of control, professional methods, attitudes and responsibilities that are most precisely debated among housing theorists and practitioners particularly in the case of complex social economic and political networks of informal settlement. Having known that there is a fundamental change of attitude that is an acceptance of the informal settlement as an inevitable feature of the process of city-building. So as a result slum rehabilitation becomes an important part of urban development. In metropolitan cities, there is a need to change the attitude of slum rehabilitation in the context of land scarcity. The research work recognizes that there is a need to transforming attitude to slum rehabilitation from Low-rise low-density to high-rise high-density buildings to uplift the quality of life of slum dwellers. The present study investigates the basic understanding of slum rehab, why it is needed and the main problem faced by them, understand the various gap at the various level that what the user requires and what the slum rehab development provides, the present scenario of slum rehabilitation. Finally, a set of plausible recommendations is formulated to transform the attitude of slum rehab which is needed for a paradigm shift.*

1. Introduction

In 2011, 377 million individuals (31% of the total population) in India lived in urban communities, yet of these, 65 million (27% of the urban population) lived in extreme shelter poverty in zones called slums. This challenge isn't special to India; 863 million individuals around the globe live in comparable squatter settlements. India and China have the highest number of slum dwellers, with 50 million-plus inhabitants living in acute shelter poverty. The world today is rapidly progressing through the process of globalization and integration of markets into a new reality – as a "global village". In recent times, cities have emerged as an engine of growth. In the 21st century, cities of developing countries are witnessing housing shortage as the most pressing problem. More than one billion of the world's city residents live in inadequate housing, mostly in the sprawling slums and squatter settlements, especially in the developing countries and India is no exception to it.

Almost all the India cities are struggling to cope up with the increasing demand for infrastructure services; the additional migrant's further causing tension in using the existing scarce infrastructure services. In the housing front, the Indian cities are an acute shortage, and the in migrants further cause tension on it, which results in the formation of slums or squatter settlements or an increase in the number of pavement dwellers in the urban system.

"The growth of cities is a natural part of nation-building". As such, the movement towards the urban system is an inherent part of development. Since the urban system depends on a migrant from the rural areas for the energy that fuels urban dynamism, there must be natural provisions for cheap and efficient housing of such migrants. As there is no mechanism to predict the number of migrants that arrive in a given city, it is impossible to estimate accurately the incoming migration in a particular city. Hence, the growth of slums and squatters areas is only a normal manifestation of urbanization over the years. Having known that there is a fundamental change of attitude that is an acceptance of the informal settlement as an inevitable feature of the process of city-building. So as a result slum rehabilitation becomes an important part of urban development. In metropolitan cities, there is a need to change the attitude of slum rehabilitation in the context of land scarcity.

1.1. Aim

This study aims to identify the present scenario of slum rehabilitation in India. As well as point out the perceived ambiguity behind the present understanding and evolution of slum rehabilitation. It aims at answering the question -

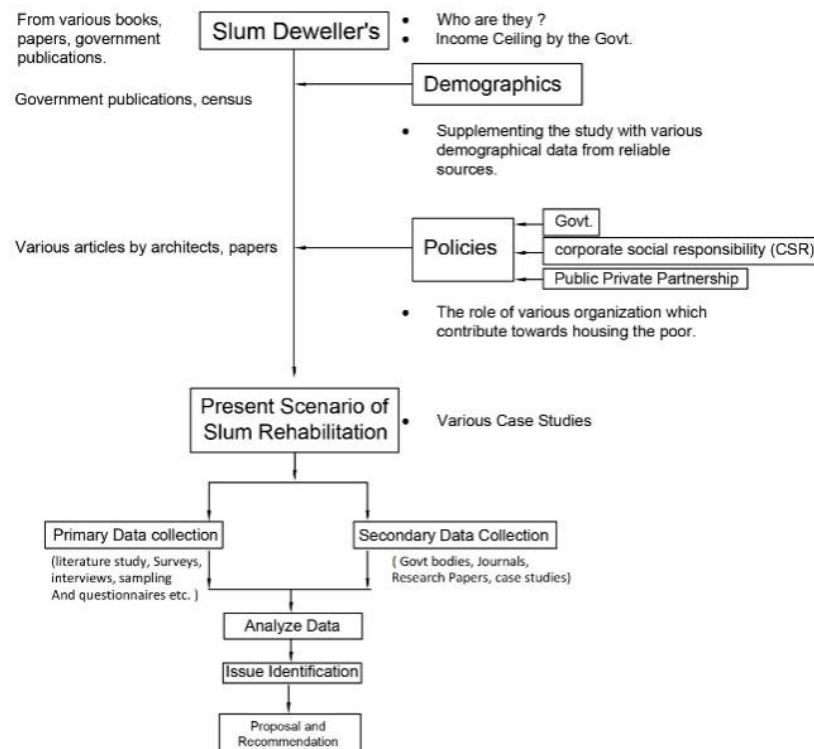How far does slum rehabilitation fulfill the needs of slum dwellers?

1.2. Objectives

- To study the evolution of slums in metropolitan cities of India and to understand its characteristics.
- To understand the slum rehabilitation concept and principle of it.
- To analyse the slum rehabilitation planning and design process in the urban context of metropolitan cities of India.
- To identify reasons that not fulfil the requirement of slum dwellers in transforming the attitude of slum rehabilitation this is needed for a paradigm shift.
- To propose a comprehensible slum rehabilitation planning principle and strategies that can fulfil the need for slum dwellers.

1.3. Research Question

- Can Slum rehabilitation be a high rise development to accommodate and fulfil the requirement of slum dwellers?

1.4. Scope

- The study will explore the Slum rehabilitation development which is implemented in the different contexts of metropolitan cities in India.
- A basic understanding of Slum Rehab, why it is needed and the main problem faced by this field would be discussed.
- Understanding the gap at the various levels, that is, the design proposals and their implementation would be discussed.
- Identifying the gap in what the end-user requires and what the slum rehab development provides. Thus, the evolution of the housing spaces over the years, to fulfil or suit the lifestyle of the resident.
- The study will include a basic understanding of the services and amenities provided along with the housing, as it is a very important aspect when it comes to housing the poor.

1.5. Limitations

- The study is limited to some metropolitan cities in India are Mumbai, Delhi, Bangalore.
- The study will focus on the Slum Rehab Housings, Built under government schemes designed by Architects.

1.6. Methodology

1.7. Need of Study

- It is of common knowledge that the number of slum dwellers increases every year at an alarming rate. Thus, for rehabilitating such people, the government has come up with various schemes where housing with basic services is provided to the poor. These facilities are given

on the basis of the income level of the people, in most cases through a process of subsidy.
- What is quite intriguing to know is the fact that the basic fundamental necessity of every human being „Shelter" is categorized on the basis of income. As a result of this, the people in the lower-income strata are left with dwellings that are not satisfying on humanistic grounds.

Hence in a lot of cases, the weaker section housings provided to the poor are abandoned.

- Thus, comes the role of an architect to understand the lifestyle of the people belonging to the slum dwellers and designing spaces accordingly for them. The whole issue of slum dwellers housing does not end at providing a single room for the people but designing it in such a way that it cares about their needs so that they can live and prosper in the same.

- This study attempts at evaluating a few slum rehab housings and provide critical analysis of whether they have been successful or not. Therefore, drawing conclusions on the lessons for the future so that there can be ample development in this field as-is justified. Then design a proposal and recommendation for transforming attitude to slum rehabilitation need for a paradigm shift.

2. Literature Study

The word "slum" is often used to describe informal settlements within cities that have inadequate housing and miserable living conditions. They are regularly stuffed, with numerous individuals packed into extremely little living spaces. Slums are not a new phenomenon. They have been a piece of the historical backdrop of practically all urban communities, especially during the period of urbanization and industrialization. Slums are commonly the main kind of settlement moderate and open to the poor in urban communities, where rivalry for land and benefits is extreme. The main reason for slum proliferation is rapid and non-inclusive patterns of Urbanisation catalyzed by increasing rural migration to urban areas.

2.1. Definition of Slum

A review of the definitions used by national and local governments, statistical offices, institutions involved in slum issues and public perceptions reveals the following attributes of slums.

2.2. Lack of basic services

The absence of essential administrations is one of the most every now and again referenced attributes of slum definitions around the world. Absence of access to improved sanitation offices and improved water sources is the most significant component, now and again enhanced by the nonappearance of waste collection systems, electricity supply, surfaced roads and footpaths, street lighting and rainwater drainage.

2.3. Substandard housing or illegal and inadequate building structures

Numerous urban communities have building guidelines that set at least necessities for private structures. Ghetto zones are related to a high number of inadequate lodging structures, regularly worked with non-perpetual materials unsatisfactory for lodging given neighbourhood states of atmosphere and area. Elements adding to a structure being viewed as unacceptable are, for instance, earthen floors, mud-and-wattle dividers or straw rooftops. Different space

and abiding arrangements local laws may moreover be broadly ignored.

2.3.1. Overcrowding and high density

Congestion is related to a low space per person, high occupancy rates, cohabitation by different families and a high number of single-room units. Many slum staying units are overcrowded, with five and more individuals sharing a one-room unit used for cooking, resting, and living.

2.3.2. Unhealthy living conditions and hazardous locations

Undesirable living conditions are the after effect of a lack of basic services, with visible, open sewers, lack of pathways, uncontrolled dumping of waste, contaminated situations, and so on. Houses may be built on hazardous locations or land unsuitable for settlement, such as floodplains, in proximity to industrial plants with toxic emissions or waste disposal sites, and on areas subject to a landslip. The layout of the settlement might be perilous on account of an absence of access ways and high densities of dilapidated structures.

2.3.3. Insecure tenure; irregular or informal settlements

Various definitions think about the absence of security of residency as a focal attribute of slums and respect absence of any proper report qualifying the tenant for involving the land or structure as by all appearances proof of lawlessness and slum occupation. Casual or spontaneous settlements are regularly viewed as synonymous with slums. Many definitions emphasize both the informality of occupation and the non-compliance of settlements with land-use plans. The primary components adding to non-compliance are settlements based ashore saved for non-private purposes, or which are attacks of non-urban land.

2.3.4. Poverty and social exclusion

Income or capability poverty is considered, with certain special cases, as a central characteristic of slum areas. It isn't viewed as an inherent characteristic of slums, however as a reason (and, to a huge degree, an outcome) of slum conditions. Slum conditions are physical and statutory signs that make obstructions to human and social development. Moreover, slums are an area of social avoidance that is regularly seen to have significant levels of crime and other measures of social dislocation. In certain definitions, such areas are related to certain vulnerable groups of the population, for example, recent immigrants, internally displaced persons or ethnic minorities.

2.3.5. Minimum settlement size

Many slums definitions additionally require some minimum settlement size for a territory to be viewed as a slum, so the slum comprises a particular area and is certainly not a solitary dwelling. Models are the municipal slum definition of Kolkata that requires a minimum of 700 square meters to be occupied by huts, or the definition of the Indian statistics, which requires at least 300 population or 60 households living in a settlement cluster.

2.4. Slum Definitions in India

In India, the definition of slums is brought out by the Census and the NSSO and also every state in India has a unique definition of slums in keeping with the distinctive socio-economic characteristics of the region, its terrain, and slum housing conditions.

2.4.1. Census 2011 definition
Definition of Slums as per Census 2011 –
- All notified areas in a town or city notified as 'Slum' by State, UT Administration or Local Government, Housing and Slum Boards, etc. under any Statute including a 'Slum Act' are considered as Notified Slum.
- All areas recognized as 'Slum' by State/Local Government, UT Administration, Housing and Slum Boards, etc., which may have not been formally notified as slum under any statute are categorized as Recognized Slum.
- A compact area of at least 300 populations or about 60-70 households of poorly built congested tenements, in an unhygienic environment usually with inadequate infrastructure and lacking in proper sanitary and drinking water facilities in the State/UT are categorized as Identified Slums.

In Census 2011, all the three type of slums i.e. notified, recognized and identified slums as per the definition

2.4.2. National Sample Survey Office (NSSO) definition
NSSO attempted to define slums in its surveys conducted in 1976-77, 1993, 2002, 2008-09 and 2012. While the 1976-77 survey had two major categories -- Declared and Undeclared slums -- 1993, 2002, 2008- 09 and 2012 surveys defined slums as notified and non-notified. The definitions of declared and notified were similar, as being "those areas notified by the respective municipalities, corporations, local bodies or development authorities".

Undeclared slums were defined in the 1976-77 survey as a cluster of 25 kutcha structures with inadequate access to sanitation and water. In the surveys conducted during 1993-2012, however, the non-notified slums were defined as a cluster of 20 households with pre-defining criteria as crowding, inadequate access to sanitation and drinking water and unhygienic conditions.

a) **Operational definition of slum in the 69th Round survey:**
- Areas notified as slums by the concerned municipalities, corporations, local bodies or development authorities were termed notified slums.
- Also, any compact settlement with a collection of poorly built tenements, mostly of temporary nature, crowded together, usually with inadequate sanitary and drinking water facilities in unhygienic conditions, was considered a slum by the survey, provided at least 20 households lived there. Such a settlement, if not a notified slum, was called a non-notified slum.
- Slums: The word "slum" covered both notified slums and non-notified slums.

2.5. Evolution of national schemes in India over time for slums

2.5.1. National Slum Development Programme (NSDP)
The 1996 slum up-gradation initiative, National Slum Development Programme (NSDP), started with the aim to upgrade 47,124 slums throughout India. It identified a target slum in each city which is planned to develop as a "model" slum. In this scheme, improvements in physical amenities - such as water supply, storm water drains, community baths and latrines, wider paved lanes, sewers, streetlights, etc. - are provided to the entire slum community. NSDP provided both loans and subsidies to states for slum rehabilitation projects on the basis of their urban slum population. Beneficiaries were provided loans to make improvements to housing while governments invested in providing community amenities. In the implementation of this scheme, however, NSDP was only able to disburse about 70% of its allocated funds, indicating difficulties in the administrative process. The performance of the program varied by state, yet overall, projects often lacked proper monitoring and supervision, resulting in a trend of time-delays and misused funds. NSDP spent approximately 30.9 billion and affected 45,786,396 people.

2.5.2. Basic Services to Urban Poor (BSUP)
BSUP was started as a part of a larger scheme called JNNURM, a large scale urban renewal program for urban India. BSUP aimed to provide basic services to urban poor in 63 of the largest cities in India by population. While the original intent of this program was to provide security of tenure at affordable prices and improved housing, water supply, and sanitation, it ultimately became a housing construction program subsidized and implemented by the government.

Government agencies estimated the housing unit cost as 3,00,000 and decided to provide a housing subsidy of approximately 88%, with the remaining 12% contributed from the end beneficiary. BSUP failed to take into account the limited capacity of the government for the implementation of such a project. Limited local government capacity resulted in poor monitoring during the construction process leading to poor quality housing. In the case of Bhopal, the housing was so poorly constructed, with dark alleys and leaking pipes that slum residents refused to move in, and in this case, overall take-up rates by original inhabitants were less than 30%.

BSUP has underperformed due to poor quality housing and a lack of transparency of costs in the implementation of the scheme. Project delays and poor bidding specifications resulted in an escalation of the costs, as the projects progressed and total costs far-exceeding initial estimates by the government. For example, in Shabari Nagar Bhopal the initial cost of a beneficiary share was estimated to be 35,000 but by the time construction was completed, the cost had escalated to 57,000. As a result, these housing units became unaffordable for most beneficiaries, and the intended target populations were not reached. BSUP spent 268 billion to construct 1,028,503 housing units.

2.5.3. Housing for All

In June 2015, the Cabinet of India approved the Housing for All scheme, with the goal to provide housing to every Indian household by 2022. It plans to include 300 major cities in India in its first two phases by 2019. After 2019, it plans to extend this scheme to the remaining cities in India. One of the major components of the program is to utilize in-situ slum rehabilitation, through which the government has devised a strategy to incentivize private developers to use the land as a resource. The policy also includes a small slum up-gradation component to involve beneficiary-led individual housing construction.

Four main components of the *Housing for All* policy:
- Slum rehabilitation will use land as a resource to involve private developers
- Public-Private Partnerships to create affordable housing
- Affordable housing through the Credit Linked Interest Subsidy
- Beneficiary-led individual house construction or enhancement.

For slums that are tenable – able to be maintained and not at high risk – the government recommends an in-situ redevelopment policy irrespective of the tenure status of the slums. It plans to operationalize this policy through private-sector partnerships. State or urban local bodies will provide slum areas with additional floor space index which will result in verticalization of the sprawl. The opened up the land region from the verticalization can be utilized by private designers for business resale. This will allow private builders to construct houses for eligible slum dwellers free of cost. In places where such cross-subsidization is beyond the realm of imagination, the government will share the money related weight through feasibility hole financing (60-75%). The procedure will include a transparent bidding process from private developers.

The success of slum redevelopment policies is measured by three key outcomes: identification of beneficiaries, timely construction, and quality of housing. As the policy had just been enacted, it isn't possible to measure its performance; rather, we can examine its features to determine if the administrative design was intended to ensure these three outcomes. By linking private sector Transfer of Development Rights (TDR) incentives with the number of beneficiaries who are provided with housing, the program has ensured that targeting is done in a better manner. Choosing private developers through a straightforward offering procedure may guarantee better quality housing. Finally, to ensure timely construction, the Ministry of Urban Development 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.

National policies in India have moved from slum up-gradation to ex-situ slum redevelopment, to in-situ redevelopment in a short, twenty-year span. In-situ redevelopment promises to fulfil the aspirations of the new urban India through better quality housing, faster construction, and enhanced beneficiary identification.

2.6. U.S. Housing Act of 1949

Today, squatting is a problem seen largely in the developing world. However, a simple 70 years prior, modern London and New York City were mixed with squatter settlements. In fact, New York's Chinatown was one of the first slums in the United States[22]. The goals of the United States' Housing Act of 1949, has parallels with the goals Housing for All policy enacted by the Government of India in 2015. Recent evaluation studies of policy interventions from the 1960's in developed countries' can provide a window for policymakers in developing countries to find a solution to the challenge of slum settlements. It aimed to provide a decent home to every American family by 1955 by redeveloping slum areas and construct 810,000 units of public housing. The federal government incentivized local government to use their powers of eminent domain to clear and then sell parcels of land in blighted urban areas for either public housing projects or for urban redevelopment. It likewise gave government awards and advances to create public housing with low rental rates and construction cost caps. These two features of the scheme were most controversial; because of the social cost it caused (racial segregation and large scale relocation of 300,000 families). All of this led to a substantial delay in the achievement of the goal, and it took 20 years to complete the construction of all housing units.

2.6.1. Achievements of the program
- Effective land use: 57,000 acres of land (90 square miles) of pure residential area was redeveloped to make public amenities and places for commercial use. 35 % was used for residential redevelopment, 27 % was used for streets and public rights-of-way, 15 % was used for industrial purposes, 13 % was used for commercial purposes, and 11 % was used for public or "semi-public" spaces.
- Economic Growth: Recent studies have shown a strong positive correlation between economic outcomes and years of participation in the program, in any given region. For example, 5 years of participation in the program is associated with 1% higher family income. A $100 per capita difference in grant funding was associated with a 2.6 percent difference in the 1980 median income and a 7.7 percent difference in 1980 median property value. Thus, mandatory investment in urban redevelopment along with the construction of housing can lead to overall investment in the built environment and improved quality of life for slum residents.

2.6.2. Lessons from United States Housing Act of 1949:
- Provide spaces for Livelihood: High-rise public housing buildings were criticized by multiple scholars for turning horizontal slums into vertical slums and were chided for offering a spatial solution for a social problem.
- Construction of quality housing units by effective agencies: Local governments did experiment with getting private sector companies to build social housing, but the quality was not up-to-par with public housing buildings.

Government agencies which faced more public scrutiny tend to deliver higher quality results.

- In-Situ Redevelopment will minimize relocation: While, slum clearance did result in large scale relocation, it also focused on using the cleared-up-land for building more public housing in the area. In that way, the government tried to minimize relocation. The strategy for clearing and redeveloping the land mass had positive correlations with overall economic development of the area. However, such calculations do not consider the social cost of relocation, which is why the future slum interventions around the world aimed at minimizing this.

3. Parameter of Data Collections

The parameter of data collection on two basis are qualitative parameters of slum rehabilitation and quantitative parameters of slum rehabilitation which are as follows-

3.1. Qualitative parameters of slum rehabilitation

- Location of Space
- Neighbourhood Relationship
- Environmental Relationship
- Green Spaces
- Spaces for social Interaction
- Safety Measures
- Aesthetic Quality

3.2. Quantitative parameters of slum rehabilitation

a) Quantity of spaces
b) Population
c) Social Infrastructure
d) Physical Infrastructure
  - Electricity
  - Water supply
  - Waste Disposal
  - Sewerage
e) Area of Dwelling Unit
f) Green Spaces

4. Conclusion

Today, the land has become a very scarce commodity. With soaring real estate prices, it is extremely difficult to get land for housing the lower income. In such cases, to house a colossal number it gets important to manufacture a high-rise structure with a high FSI. But, the people coming from the poorer sections, having stayed in slums, have adapted to life in a low rise structure. In such situations when an elevated structure is accommodated individuals originating from the slums, what at last outcomes is a vertical slums?

Providing a High-rise high-density structure to house the slum dwellers would mean a low site area, and it is possible to finance such large tracts of land with the extremely high land values in the metro cities. Therefore what is required is a High rise high-density structure, which does not take up large areas of land. Finally, these high rise towers look like vertical slums. This scenario can be changed as follows-

- In Situ-Slum rehabilitation
- Development should be done as land as a resource.
- Nearness to the employment generating centres, mass transport facilities, and a habitable healthy environment are the major locational aspects for any slum dwellers, but all these parameters are not taken into consideration in the above case studies.
- In many cases, it's seen that the dwellers add on a room or an area in their house and by doing so they cut off the light and ventilation quality of their house. Therefore, the design should be such that the people do not need to make such amendments in their house in the future.
- The government should take steps to command developers to invest in the commercial development in which some amount of space is handed over to the government which generate revenue that is used as maintenance cost of Slum Rehabilitation building.
- The people residing in the slum area mainly consist of skilled and unskilled labourers who are daily earners. For these sections, there are no specific travelling or conveyance issues, there is issue of commercial spaces that can provide a great job opportunity to them which helps them to uplift the quality of life.
- In many cases, it's seen that the slum dwellers are shifted in vertical towers but some services are missing which are measures issues for slum dwellers for example - Waste disposals, places for interaction at each floor, provision for face to face interaction.
- The government even needs to readdress its methodology of "One size fits all". Every family, irrespective of the number of family members is entitled to get a 25sqm dwelling unit. In the weaker section areas, the family measures shift enormously. Furnishing every family with one dwelling unit, now and again prompts a very congested atmosphere. Clearly the individuals would be increasingly happy with a "Size that fits" instead of a "Size which is a maverick".

Maximising Involvement
- Role of an Architect
- Community Participation
- Collaboration of private and public sectors

5. Recommendations

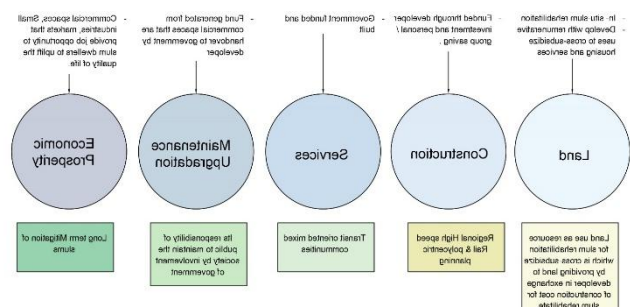- Planning framework and standards must result in sustainable slum rehabilitation housing

Figure 1: Planning framework for slum rehabilitation housing

- The relocated slum rehabilitation households move back into slum accommodation due to the outskirts urban areas. So In situ-slum rehabilitation is happily accepted by slum dwellers.
- The government should take steps to command developers to invest in the commercial development in which some amount of space is handed over to the government which generate revenue that is used as maintenance cost of Slum Rehabilitation building.
- Avoid creating large concentration of low income social 'slums' ; Integrate weaker section group within larger mixed-income mixed-use communities. It also avoid perpetuation of mono functional activities and crimes.
- The layout of the site should be done which can integrate the weaker section group and larger mixed-income communities that increase the chances of job opportunity for slum dwellers.
- Shared public spaces, social amenities and physical infrastructure allows social interaction of different income groups in common public spaces and helps reduce mutual apathy, generates social ties and reduces crime, thus increasing social security.
- On the concept of eyes on the street, the layout of the window openings should be done which faces the street to make a secure environment.
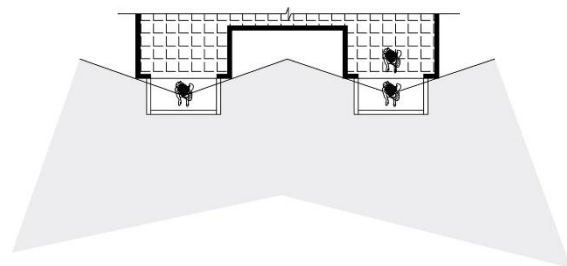

Figure 2: Showing Vision on street which make street safer

- Clear hierarchy of streets with well-defined and legible zones for pedestrians, bicycle, buses and cars – would reduce accidents and create safety.
- The partition of areas should be done by transparent walls which make the street safe and secure for communities.
- Green Spaces should be surrounded by pedestrian pathways that are direct links with building structures so vehicular and pedestrian movement is never intersected which should be safer for children and older persons.
- Markets and daily use product shops should be directly attached to building so easily accessible for children and slum dwellers.
- Not a single provision should be done for the incrementally of space in the dwelling units.
- The cluster of units should be designed to minimize the circulation corridor and provide a space for social interactions between slum dwellers (like 'Bethak' outside the slum unit).
- Keeping in mind about the slum dweller professions market should be designed for their informal employments
- A slum dwelling unit is used most of the time by women and children show that the layout of the unit should be focused on the living area of the residence. The living room should have a large opening which encourages face to face social interaction at the time of doing household activities.
- A balcony should be designed for face to face interaction to encourage the social interaction between slum dwellers. It also reduces storage view which gives a bad impact in the communities seen in case studies.
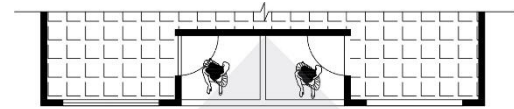
Figure 3: Combine balcony encourages social interaction between slum dwellers

- A provision of garbage chute system and garbage dumping Dhalao.

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