

Sustainable Slum Development Converting the Slum as Housing Stock: A Case study of Surat, Gujarat, India

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Abstract - Housing refers to the domestic environment including houses, basic Infrastructure and services required by the residents of the houses. The rapid pace of urbanization, increasing migration from rural to urban areas in search of livelihood has created a massive mismatch between housing demand and Supply. As per the estimates of the planning commission of India, total requirement of urban housing during the 11th five year plan period (2007-12) is worked out to be 26.53 million dwelling units in 2007 and numbers of urban household will be 66.3million. As per Planning Commission estimation 67.1million urban population in 1999-2000 live below poverty line. In this paper attempt has been made to analyze the issue of land, land provided to urban poor under various residential scheme. As Inclusive Sustainable Planning it means a self-sustainable development.

Index Terms - Slum, Housing Stock, Urban Poor, Surat.

I. INTRODUCTION

“...Slum and urban poverty are not just a manifestation of a population explosion and demographic change... slums must be seen as the result of failure of housing policies, laws and delivery systems, as well as of national and urban policies”.

The word “slum” is often used to describe informal settlements within cities that have inadequate housing and nasty, miserable living conditions. They are often overcrowded, with many people crammed into very small living spaces.

Slum constitutes the most important and persistent problem of urban life. They exist almost in all metropolitan cities of the world. Rapid urbanization, migration of the underprivileged from rural areas to urban centers and acute shortage of housing are the main attributes, in the formation of slums. They are observed in different patterns, forms as well as shapes, occupied in urban vacant land wherever available and possible to put up the shanty shelter. Squatting and pavement dwelling is another form and is common phenomenon in the metropolitan areas. Slums springs up and grow on both public and private land. The irresistible desire for a shelter makes the poor to encroach on any vacant land.

Surat, the second largest city in Gujarat state has a dominant role in the sphere of economic and industrial activities in South Gujarat region. Rapid urbanization has been observed in last three decades and many industrial set-ups have been surfaced in a big way in/and around city resulting in population growth increases in alarming way. The problem has been accentuated by continuous migration of the rural population in search of better working opportunities in the city. The slum pocket is increasing with the time. The poor affordability and even increasing cost of housing in the city have degraded the housing conditions as a result slum growth take place.

II. SURAT CITY PROFILE

The city is located on the River Tapi and has about 6 km long coastal belt along the Arabian Sea. Due to these reasons, the city emerged as an important trade Centre and enjoyed prosperity through sea trade in the 16th, 17th and 18th centuries.

III. CITY GROWTH

Prior to 1961, Surat's area was only 8.12 sq. km., while in 2009 it had expanded to 326.5 sq. km. In subsequent years, Since the 1990s, most of the new development including the most desirable locations for the city's burgeoning middle and upper class has been the land between the Athwa lines and Arabian Sea. Since the establishment of Surat Urban Development Authority (SUDA) in the late 70s, the city has been growing at a rapid pace; though the development in the peripheral areas was not that rapid until 2001.

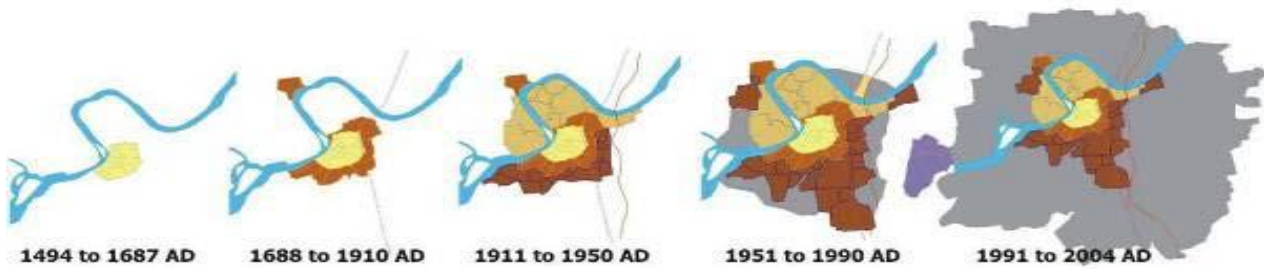


Image 1 Surat City Growth

IV. AREA AND ADMINISTRATIVE DIVISIONS

There are three main governing bodies Surat, namely Surat Municipal Corporation (SMC), Surat urban Development Authorities (SUDA) and Hazira Development Authority (HADA) governing the industrial Hub of Hazira.

Approximately 334 Sq. km of the city comes under the jurisdiction of SMC with an estimated population of four million. SUDA covers the SMC and an additional 722 sq. km area of 148 villeages.

Table 1 Statistics for Surat Municipal Corporation

Statistics for Surat Municipal Corporation	
	Surat City
Oldest Municipality	1852 AD.
Area	326.515 sq.km.
Population	1634605 (1991) 2876374 (2001) 4462002(2011)
Density	8812 Persons/Sq. km
Zones	7
Sex Ratio	764/1000 Male
Crude Birth Rate/ Death Rate	18.25 /4.37
Literacy Rate	82.91%
Male/Female	88.12% - 76.00%
Decadal Growth Rate	76.02%

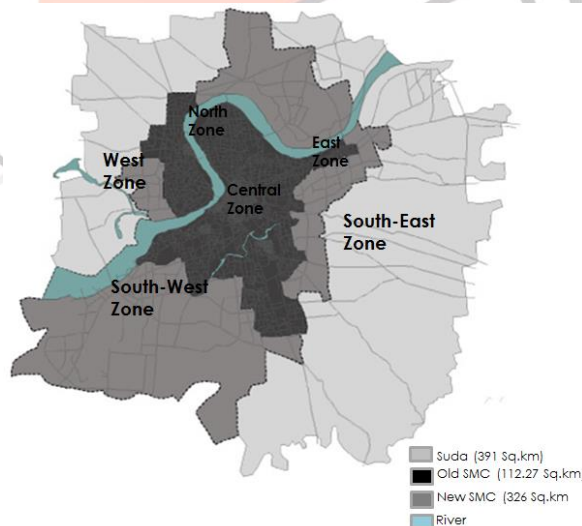


Image 2 Boundary of various zones

V. AREA AND ADMINISTRATIVE DIVISIONS

The residential development in the city which is near about 57% of the total urbanized area. The growth in the city is taking place in the city southern and north-eastern direction with major development of planned and unplanned colonies. Area under residential use has increased drastically, from 2695.6 Hectares in 1978 to 9806.18 Hectares in 2004, indicating the extent of the sprawl of the city. The percentage distribution of residential area is 57.54% in 2004, which is on a slightly higher side then prescribed standards, which range from 40% to 45%. Areas under slums cover 1.8% of total area of Surat Municipal Corporation in 2007.

VI. HOUSING STOCK

As per census 2001, the Surat city comprises population of 28.76 laces, with total number of 752,441 of census houses. There are 63.46% of houses which are used for wholly residential use and 15.58% of houses are lying vacant in the city. The maximum Population density (50,901 Person per sq.km.) is in Central zone in mere 8.18 sq.km area. As discussed above the central zone provided maximum employment opportunities and formation of squatter settlements, which are the root cause of its densification.

Table 2 Total Housing stock

Zone	Area sq.km.	pop	Density (person per sq.km.)	wholly residential	vacant houses	total no of houses
Central	8.18	416,370	50,901	69,487	28,717	145,008
Southwest	14.96	711,516	47,561	40,406	17,926	70,028
South	26	287,144	11,044	70,417	17,323	108,538
South east	9.11	407,980	44,784	66,403	12,822	100,853
East	13.86	242,466	17,494	117,548	16,599	166,969
North	20.54	397,257	19,341	63,929	8,614	87,633
West	19.63	413,641	21,072	49,318	15,235	73,412
Total	112.28	28,76,374		477,508	117,236	752,441

VII. HOUSING NEED

The housing sector needs to be catered for meeting the existing backlog as well as to meet the future demands of the expansion happening in the city. The present deficiency of housing is computed as below, assuming an optimum household size of 5 for the city, over the Census 2001 population data and future housing projections. The table below shows the total shortfall in number of Houses required for the population as per zones in the Surat city:

Table 3 Housing Shortage existing in the Year census 2001

Zones	2001			
	Population	Total Houses	Average Household	Shortfall
North	416,370	63,929	6.5	19,345
East	711,516	117,548	6.1	24,755
West	287,144	49,318	5.8	8,111
South	407,980	70,417	5.8	11,179
South west	242,466	40,406	6.0	8,087
South east	397,257	66,403	6.0	13,048
Central	413,641	69,487	6.0	13,241
TOTAL	2,876,374	477,508	6.0	97,767

The deficiency in the census year 2001 is based on the optimum household size (5 person per dwelling units) thus is 97,767 household (dwelling units). The average household size is 6 people per household which is higher than the prescribed household size (5 person per Dwelling Units) for any city.

The table below shows the total shortfall in the number of housing units for the total population in Surat city in coming years.

Table 4 Derived from Census Information

	1991	2001	2009	2012	2017	2022
Population.	1,499,560	2,876,374	3,884,599	4,363,913	5,210,969	6,196,870
Total No. Of houses	681,750	752,441	814,236	838,696	881,106	925,661
Total Houses – Resid.Use	436,744	477,508	512,842	526,756	550,791	575,922

Total Houses	Vacant	99,267	117,236	133,926	140,781	152,993	166,264
Housing Requirement		299,912	575,275	776,920	872,783	1,042,194	1,239,374
Shortfall			97,767	264,078	346,026	491,403	663,452

VIII. GROWTH AND POPULATION

Owing to rapid industrialization in and around the city, a large influx of migrants has been observed, which has resulted in the formation of slums. The city presents a wide range of activities in various industrial and commercial sectors. Growth in such activities, possibilities of absorption in industrial, allied as well as service sectors, scope of employment in trade and business activities, hawking, retailing, carting and other such possibilities have attracted rural poor to the city.

Table 5 Growth Trends in slum Population

Growth Trends	1983	1992	2001	2005
Total City Population(Lakhs)	9.2	15.7	24.34	28.00
Annual Growth Rate %	8.2	7.8	6.24	1.41
Total slum Population(Lakhs)	1.87	4.34	4.91	5.69
Annual growth rate %	21.4	14.6	1.46	1.49
Slum Population as % of total population	20.3	27.5	20.14	19.24

There are a total 312 slums in the city of surat in which 19.24% of the total population the city lives. This figure was 27.5% of the city's population during 1992. Growth of the slum population has also decreased considerably from an annual average of 14.6% in 1992 to an annual average of 1.46% in 2001.

Table 6 Growth in the Numbers of slums

Period	No of Slums	Cumulative total
Up to 1960	79	79
1961- 66	54	133
1966- 72	46	179
1973- 78	41	220
1979- 84	50	270
1985- 90	24	294
1991- 95	0	294
1996- 98	-5	289
1999- 01	18	307
2005- 06	5	312

During 1996-98, five slums were relocated and in 1999, those settlements, which were not considered earlier as slums, were also added along with new slums that developed. The total number of slums thus stands at 312 at present.

Sixty four percent of public land has been encroached upon by slums in the city, with 44 and 20 percent respectively belonging to the corporation and the government. Encroachments on private land have been cleared off in certain areas, bringing down its share 37% in 1992 to 26% in 2000. This also could be reason behind the addition of new slum pockets in the city.

Table 7 Status of land of slum Settlement

Ownership of land	1973	1992	2001
Private	43.7	37.3	26.30
Government	4.7	13.3	20.10
Municipality	42.2	41.0	43.73
Others	9.4	8.4	9.87

Table 8 Location of slums in the city.

Location	Number	Percent
Within the City wall	92	30.0
Outskirts of city wall	32	10.4
Along Transport Corridors	85	27.7
Along or near River Banks	19	6.2
Near Old Settlement	28	9.1
Interior areas of wards	51	16.6

IX. DEFINING SLUMS IN INDIA

In terms of the commonly adopted approach of Social- Economic-Physical planning; Slums have been defined as a cluster of hutments with dilapidated and infirm structures with/ without Toilet facilities, suffering from lack of basic amenities, inadequate drainage and disposal of solid wastes.

Under Section- 3 of the 'Slums Area Improvements and Clearance Act of India,(1956), slums have been defined as those residential area, where dwelling are in any respect unfit for human habitation by reasons of dilapidation, overcrowding, faulty arrangements and designs of pucca or semi- pucca building, narrow streets, lack of ventilation, light or sanitation facilities or any combination of those factors which are detrimental to safety, health, fire and morals.

In Census of India-2001, for the purpose of census enumeration, slums have been defined as compact areas of at least 300population Or about 60-70 households of poorly built congested tenements in unhygienic environment usually with inadequate Infrastructure and lacking in proper sanitary and drinking water facilities.

X. CLASSIFICATION AND SPATIAL DISTRIBUTION

According to Surat Revised development Plan (2008-2013), it indicates that there are 312 Slum Settlements in the City. It also specifies some categories which are as Follows:

Categories of slums

Authorized settlement are those where there is Security of tenure with the Cluster being an outcome of a government resettlement Programme or being either located own land.

(Authorized slums in Surat may be broadly categorized as following:

- Very old type of slums which exist from the 1960s.P{These are built by the non-land owners and where the migrants managed to have had accommodation in huts without most of the basic amenities of living}
- Slums where the dwellers constructed their houses on parcels of land on fixed rent like Sachin& Bhatar area slums.
- Slums where dwellers are accommodated in house built by landlords.
- Authorised slums in Surat are characterised by over- crowding, pressure on the available amenities, un-planned layout, use of poor-quality building materials, lack of maintenance, non-affordability for better house, etc.



Image 2 Condition of the Slum

Unauthorized settlement are those that have emerged on available vacant plots mainly Railway land or on encroached areas on the Riverbanks or a Drains as unauthorized.



Image 3 Condition of unauthorized slum Pockets.

XI. RECOMMNDATION

The need for developing the slums had been realized from the very beginning of urban development interventions in Surat, and it started with Slum Improvement Programme, prepared by Surat Municipal Corporation. A number of Slum Improvement Plans, under various urban developments' Programme, with alternative methodologies, have been prepared and implemented, from time to time. The broadly grouped as following.

Module 1- Slum Relocation

Under the model of slum relocation, slums were removed from the existing land and relocated at a site away from the present one and provided with improved on site services, as well as, small multipurpose tenements.

The model based on relocation approach did not find favors with the slum dwellers themselves, as most of their employment opportunities were located around the place from where they were moved away.

The shifting had adversely affected their income and employment opportunities and as such they had resisted the same.

Module 2- in- Situ Rehabilitation:

It shall be Applicable to Slums on Lands with Multiple Ownership and The Disputed lands.

- The work shall start with the Most Disadvantage Pocket in the Settlement, Like Slum having least Services, Highest Density.
- The Dwelling shall be in the name of the lady of the House or Jointly with the Husband.
- The proposal for Development shall be as under:-Slum to be Rehabilitated (By Private Developer) in 1/3rd Areas. Rest 2/3rd shall be the Sale Component or Profit share for the Developer.
- Livelihood shall be secured in Such Redevelopment.
- Area & Floors to be decided on the Basis of the Occupation of the People Living there.
- The Committee which will look after the Infrastructure Improvement works shall have a Majority of Female Concerns.
- Subsequently the Residents would be made aware of the Program like SJSRY.
- After Improvement the Settlement shall be De-Notified and the Residents would be entitled to pay Taxes.
- Slum Dwellers can themselves be involved in the Process of Constructing Houses. This shall provide them with both JOB & SHELTER.

Module 3 - For Inner City:

- Land Pooling Model can be taken up for improving the slum Settlement in the Inner City.
- Several Small Households shall be Clubbed Together and Renewal shall be done.
- Government shall intervene in case of Disputes.
- Use of GIS Techniques should be made for the Renewal of the Inner city Slums.
- Using GIS Detailed plans: an Action plans for any Slum Pocket Needs to be Prepares. (Approach could be scaled up if the Project shows a fair Degree of Success.) (Private Sector could be used for the Implementation of Projects.)
- Individual Rebuilding shall no more be allowed Incentives, Like Collective Subsidies, Financial Assistance should be given on Group Rebuilding thus Discouraging Individual.
- Decongesting the Highly Congested wards and to Link Inner- city Decongestion with the New Development of Sub-City Centers,
- Infrastructure shall be Provide by SMC in Consultation with DUDA.
- Livelihood shall be given Importance in Such Redevelopment.
- Community Participation in making Inner city Renewal Strategies Successful has to acknowledge. Thus bringing more Active Community Participation.

Module 4- For Urban Villages:

- Development Authority shall frame Special Bye-Laws for Urban Village to Control the Haphazard Growth of these Areas.
- The Proposal for Redevelopment shall be as under: - Slum to be rehabilitated by any Agency or Private Developers.
- Incentives to be given like Additional FSI on the Outskirts of the city.
- Maximum Utilization of Land is Possible.
- NGOs could participate in Socio- Economic Inputs of the Projects.
- A Committee shall be Formed which will look after the Infrastructure Improvement Works.

XII. CONCLUSION

Slums are in a way the product of housing shortage, and provide inadequate shelters to the section of population who are not economically capable to afford adequate house by themselves. A sustainable slum development Programme is required at any cost, which will provide the slum dwellers, the urban poor, an adequate housing with the concept of increasing the housing stock so that they are not pushed out of the housing market.

- Slum Improvement Programme as a housing programme to Increase housing stock.
- Participation of non-government organizations, private agencies and slum dwellers in the activities.
- Unauthorized slums to be provided with basic services, amenities and authorized.
- Identification of various locations in the urban areas for providing housing facilities to urban poor.
- Identification and reservation of plots, schemes for housing for the urban poor during proposal and development of new Settlements.
- Open space to be protected from any squatter activities.
- Special relaxations in building bye-laws- development norms for existing Authorised slum locations may be zoning regulations.
- Slum Improvement to be considered as part of overall urban development in an integrated manner.

REFERENCES

1. "Rajiv Awas Yojana: Guidelines for Slum-free City Planning", Ministry of Housing & Urban Poverty Alleviation, Government of India.
2. "Guidelines for Preparation of a Slum Free City Plan of Action", Rajiv Awas Yojana, Ministry of Housing and Urban Poverty Alleviation, Government of India.
3. "Slum Upgradation", Social Welfare Departments, Surat Municipal Corporation.
4. "Gujarat Slums Rehabilitation and Redevelopment Policy, 2010"; Government Of Gujarat.
5. "Slum Areas (Improvement and Clearance) Act, 1956"; Government of India.
6. Patel Achal Padhya Himanshu." Rehabilitation of Slum: A Case Study of West Zone of Surat City." International Journal of Engineering Development and Research, 2014 IJEDR | Volume 2, Issue 3 | ISSN: 2321-9939.
7. "Mandal, Nikhil R, ABCUS, A-Bi Annual Internationally referred Journal on Architecture, Conservation and Urban studies, SPRING 2010, Volume. 5 -No.1/ISSN: 0973-8339 ABACUS.
8. "Surat Revised Development Plan 2008-2013)."
9. "City Development Plan 2006, Surat Municipal Corporation."

