

# Rehabilitation of Slum: A Case Study of West Zone of Surat City

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**Abstract** - One of the greatest challenges that India faces according to census 2011 is increasing population and urbanization. Population as per census 2011 is 1200 million making India the second most populous country of globe, after China. Rapid urbanization is direct result of rocketing population. One of the most chronic and intense problem of urban life is slums. Slums exist in almost every metropolitan city of the globe. Migration of the underprivileged, poor and unemployed from rural to urban centers and acute shortage of housing are the main attributes in the formation of slums. Slums 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. Many cities have slum population as high as 35% to 40%. The city of Surat is one of the fastest growing cities in the world. The present population of the city is 44.62 Lacs with an area of 326.52 sq. km. This paper highlights the sustainable planning for slum dwellers and their housing strategies. Slum population makes positive contribution to the city economy by active participation in productive activities. Efforts must be mobilized to control the future growth of unhygienic slums and improve living condition of the people. The physical and social well-being is also of paramount importance in the growth of the city. Many researchers have derived general housing strategies for urban dwellers, but there is no such housing strategies for provide affordable housing to the slum dwellers. Therefore the study is carried on rehabilitation of existing slum pockets of various sites of west zone of Surat city.

## I. INTRODUCTION

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 centres 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 spring 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.

### Aim & Objective

To rehabilitate the slums of west zone of surat city as well as to become a west zone slum free. The following objectives are framed for the study.

- To study the existing scenario and socio-economics of slums of west zone of city Surat.
- To recognize issues facing rehabilitation of slum in the study area.
- To evolve a suitable shelter strategy model for the rehabilitation of the slums dwellers of the Surat city in general and west zone as particular.
- To rehabilitate slums at appropriate place from municipal reserve land of west zone of Surat city and develop affordable housing proposal.

## II. STUDY AREA

The study consists with Surat City of Gujarat have population 44.62 Lacs (census 2011) and area 326.52 sq km. The map is shown in Fig. 1.1. The city is divided into seven zones and in 114 wards of the Municipal Corporation.

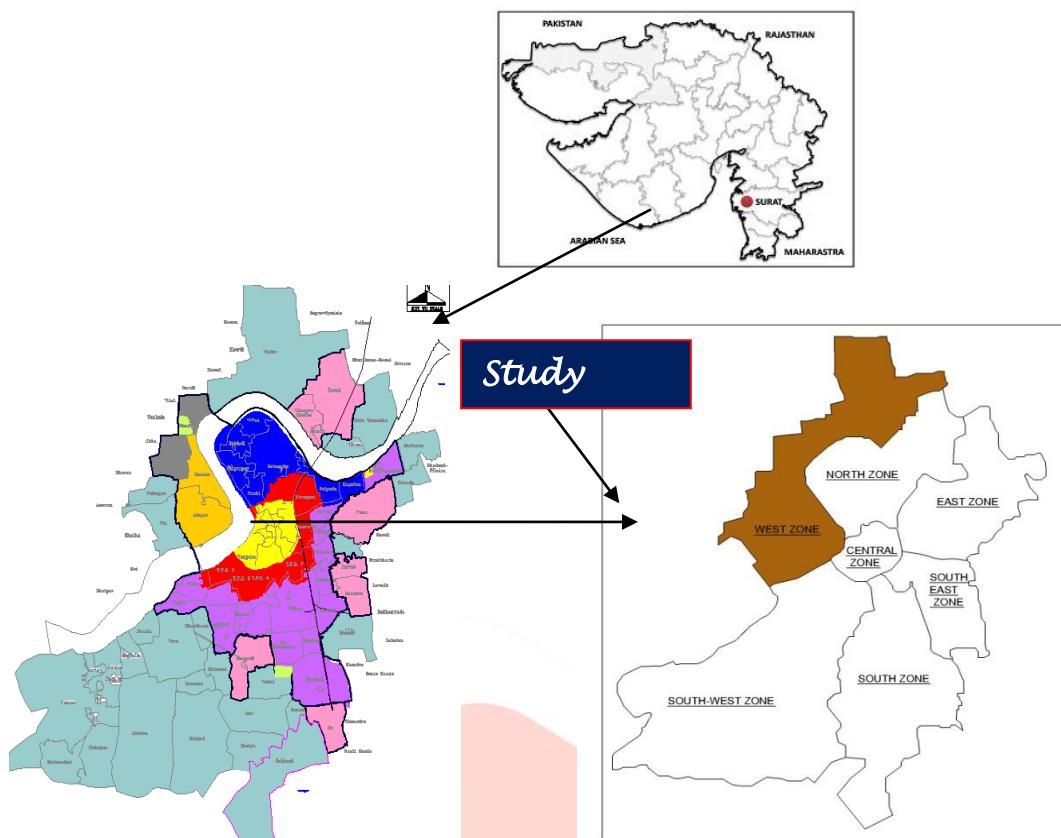


Figure III1: Study Area

### Slum Scenario of Surat city

The city of Surat in Gujarat is known for its textile trade and textile industries, diamond cutting, polishing industries, jari industries, mega fertilizer plant, petroleum and chemical engineering industries and more importantly since 1994 for the outbreak of Plague and is today known for its strength to convert its adversity into advantage. The outbreak of pneumonic plague in Surat during September 1994 created worldwide panic and severely affected the city as well as the entire nation's economy. About 60% of the population fled the city and the industry suffered an estimated loss of Rs. 12 billion. Though the disease was controlled within a week, it raised many serious issues of public health and the capacity of the local government to manage the city.

Table 1: Zone Wise Slum Pocket

Zone	No. of Slums	Slums Population (2011)	% of slum	Slums area In Hac.	% of Area	Slum Density SPPHA
<b>West</b>	<b>55</b>	<b>86775</b>	<b>13.78</b>	<b>44.28</b>	<b>14.76</b>	<b>1276</b>
<b>Central</b>	36	40415	9.02	54.44	18.15	781
<b>North</b>	61	68100	15.28	15.12	5.04	2811
<b>East</b>	59	104920	14.78	36.05	12.02	2545
<b>South</b>	98	120385	24.56	49.33	16.44	1899
<b>South-East</b>	60	202285	15.07	79.29	26.43	2490
<b>South-West</b>	30	45550	7.51	21.49	7.16	2089
<b>Total</b>	<b>399</b>	<b>668430</b>	<b>100.00</b>	<b>300 hac.</b>	<b>100</b>	<b>1897</b>



IIIFigure 2: Slum of West Zone

### **Slums survey and analysis**

The survey of the slum dwellers was conducted by considering the following important variables, such as, income, occupation, size of family, place of origin, period of stay as slum dwellers, reason for migration, agree to move , saving, remittances, total monthly expenditure, etc.

#### 1. Migration

The observation could be made from the survey is that the major reason for increasing slum population is migrated from the other states for better employment opportunities. Number of people migrated from the other states in urban area like Surat is increasing day by day. From the survey Maharashtra is having maximum percentage of migrant population around 36%. Uttar Pradesh and Orissa are also major states for creating slums in Surat city.

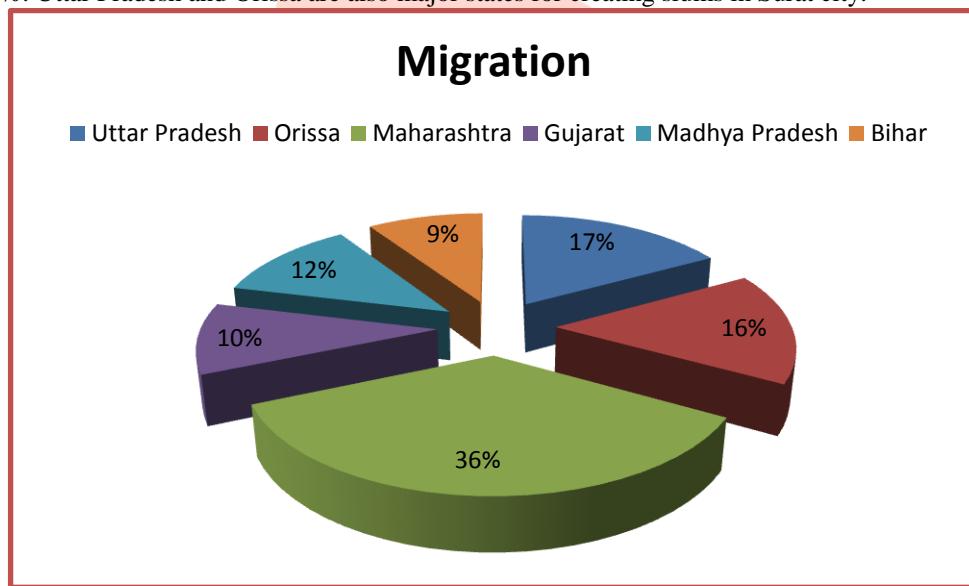


Figure 3: Migration of Surat City to Other State

## 2. Slum dweller stay period

The population explosion is rampant, and economic growth is shrinking during the last 10 years, on the other. It leads to further aggravating the existing social economic evils in the system. Moreover, the people from the most backward states of India migrated mostly to Surat city (the study area). It clearly shows that socio-economic evils pushed the people from the rural system to go out and they land up in the urban system during the last 10 years. The persons who are staying in the particular area (study area) since many years just for better employment opportunity which are nearby their home so that they can easily go there without any problem.

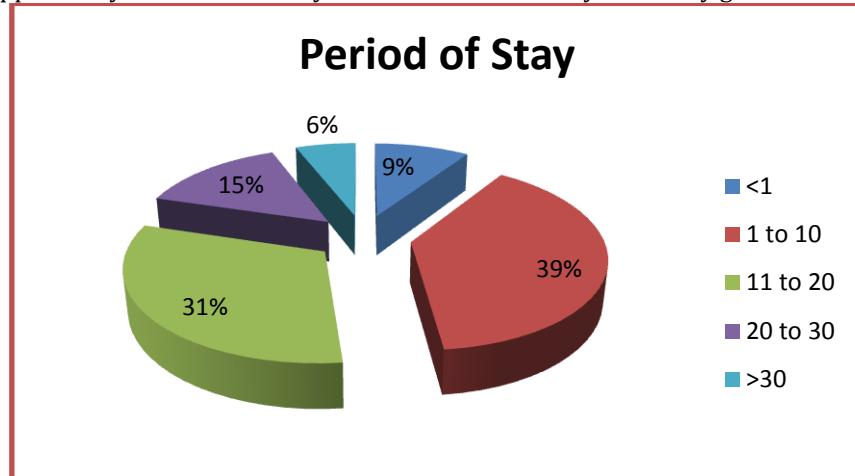


Figure II.4: Slum Dwellers Residence Period

## III. DEVELOPMENT OF PHYSICAL PLANNING SHELTER FOR THE SLUM DWELLERS

### Housing Strategies for slum Dwellers:

Building cost-effective housing is a challenging move for developers: it is a new market on which little knowledge is available, there is almost no return on experience and the only certitude is that it requires to build drastically cheaper housing units. Traditional residential real estate strategies would not work for that segment and developers have to redefine several financial and operational aspects of the industry.

There are mainly 4 housing models in its study of low-income housing solutions in India:

1. **Slum Rehabilitation:** Incremental housing in existing slums or moved to another place for better infrastructure
2. **In Situ Redevelopment:** Slum dwellers in new housing units on existing land where slum already exist
3. **New Housing:** Building of housing units affordable to low income households
4. **Renting Model (emerging):** building of housing units where a minimum of 40% will be reserved for low income households.

### Planning Proposal: A Housing for the Urban Poor

#### Low Rise Apartment

In this proposal, low rise (G+3) is provided on the S.M.C. reserve Plot for E.W.S. for different five slum pockets. Low rises are provided where the huge number of slum dwellers is living on slum pockets. Detail drawing and its specification are described which are shown in Fig.



Figure 5 Proposal Layout Low Rise App

There are total 1344 households (slum dwellers) living on the different five slum pocket. In this proposal total 42 nos of low rise buildings (G+3) are provided with public amenities, recreational area, and 9mt wide internal roads. In the public amenities, 2

number of anganwadi, one shopping complex and one police station is provided. In low rise building there are total 8 units on each floor so 32 units are in one building.

Table 2: Land Use Proposal

Particular	Area(Hac.)	Percentage
Residential	1.79	48.97
Recreational	0.47	13.10
Public amenities	0.62	17.10
Roads	0.76	20.83
<b>Total</b>	<b>3.66</b>	<b>100</b>

The following infrastructure facilities are divided into two parts one is Physical infrastructure and another one is Social infrastructure. In this proposal following physical infrastructure facilities are proposed.

1. **Drainage:** Underground R.C.C. pipe drain of 250mm diameter. Location of manholes at 30 mt distance. The connection will be made in existing SMC trunk line.
2. **Water Supply:** Underground pipe line of minimum 150 mm will be laid & connected with SMC main trunk line.
3. **Streetlight:** 6.0 mt. G.I. pipe poles at 20 mt. distance will be laid with tube light fittings.
4. **Roads:** All internal roads of 9 mt. width will be constructed with residential street type design.
5. **Pavement:** All surrounding areas will be made Pacca by paver block.
6. **Solid waste collection:** In this door to door collection of garbage will be provided for the slum dwellers.

Whereas the **Social Infrastructure** like Aaganwadis, Dispensary, Library, Vegetable Market, Hawkers Space, Children's play area, , Junction Development, Shopping Centre are provided in proposed Site. By providing this type of infrastructure and housing facilities to the slum dwellers, it will be helpful to improve their quality of life.

It will include following material which make house reasonable for those who don't pay more.

- Fly ash brick
- Earth quake proof design
- R.C.C. frame for doors
- Moizek tiles
- Kota platform
- Brick bat sitting
- Distemper white colour on walls
- Nominal plumbing
- Sand faced plaster on outer wall
- P.V.C. doors for toilets & flush doors for other
- Under Ground & Over Head tanks with pump
- Internal 12mm smooth lime plaster.

#### Total Cost

The total cost include Construction cost as well as Infrastructure cost is shown in table 3

Table 3 Total Project Cost

Particulars	Total cost (in Lacs)	Cost per unit (in Lacs)
<b>Construction cost</b>	2890	2.15
<b>Infrastructure cost</b>	322.56	0.24
<b>Total cost per unit:</b>		2.39

In the above table Physical and Social infrastructure are taken into consideration in total infrastructure cost.

#### Comparison

The comparison between this proposal to the proposal given by SMC is shown in Table 5.3

Table 4 Comparison of SMC Proposal to This Proposal

Sr. No.	Perticulars	SMC Proposal	This Proposal
1	Total Cost per one unit	2.51 lakhs	2.39 lakhs
2	Unit Area	25 Sq.mt.	23.96 Sq. mt.
3	Road width	7.5 mt	9 mt.
4	Building Structure	G + 3	G + 3
5	No. of Rooms per unit	2	1
6	No. of Units in one Building	16	32

Above table shows the total cost of one unit is 2.39 lakhs, where as in SMC proposal of providing EWS housing the cost of one unit is 2.51 lakhs which is slightly higher. So this proposal is an affordable compared to SMC proposal. Another point is in SMC proposal, 2 rooms are provided in each unit where as in this proposal, only 1 room is provided because it is sufficient for slum dwellers.

#### IV. CONCLUSION

West zone is having 55 slum pockets because it is a developed area of the city. Approximately 36% people migrated from Maharashtra state and 18% people migrated from Uttar Pradesh. Remaining from other states. West zone is highly crowded with small cape industries.

The main objective of this work is to study the existing scenario of slum dwellers and based on that provide suitable housing strategies for the slum dwellers. In this study rehabilitation of the existing slum pocket is considered as an future scope at that place and S.M.C. will get their reserve plots as well.

This study is mainly focus on the choise of slum dwellers as follow:

- House will be nearby their work place
- They will be provided transportation facilities
- EMI will be less as possible as govt can do

#### V. REFERENCE

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