

**HOUSING STUDY FOR
PUNE MUNICIPAL
CORPORATION**

2009 - 2010

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City Engineer : Mr. Prashant Waghmare

Dy. City Engineer : Mr. Aniruddha Pawaskar, Mr. Rajendra Raut

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Mr. Sharad Mahajan, Architect Planner

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PREFACE

MASHAL – Maharashtra Social Housing and Action League is an NGO registered in 1985. It has prepared six out of eleven ESRs for Pune City. MAHSAL is on forefront of slum, housing and thematic mapping. Sharad Mahajan, its active member is a qualified architect – planner, who is practicing architect and has worked in a capacity of senior planner with a team that prepared draft Development Plan for newly added villages. He has wide experience of working on housing, slum rehabilitation and township projects. MASHAL is working on 'Utthan'- an urban community development project jointly implemented with UCD of PMC. This project is funded by Bill Gates Foundation. Experience and expertise of years and existing network with housing experts makes MAHSAL right organization to undertake housing study that may help the policy makers and urban planners to modify existing Development Plan of old PMC area. This study is expected to help PMC for addressing housing issues in the city as a whole.

The economy of the Pune city has been transformed. The technologies have changed. PMC's budget has multiplied many folds. Per capita income of the citizen, their expenditure pattern and life style have seen sea change in last few decades. Mindsets of people including that of the policy makers have changed. Development of the City is now considered as joint exercise where expertise, technological edge and financial involvement of the private sector are encouraged in the interest of development of the city. To make Pune more functionally efficient it is necessary to widen its roads, to redesign its residential areas by removing insanitary conditions and decongesting some of the old wards. For sound planning of the congested parts of the city it is necessary to know the magnitude of congestion besides locating the pockets of congestion. In other words, it is necessary to know the ages of all structures in different wards and to know the extent of mixed uses of housing in a ward. It is also necessary to know per capita availability of living space and the extent to which facilities like bathroom, latrine, direct municipal tap etc. are available to the residential areas in different wards in order to plan for their improvement. This information which is essential for social planning of the city can be known only through a well designed and comprehensive sample survey studying the housing conditions.

Pune Municipal Corporation executes Development Plan for old PMC which was sanctioned by the State Govt. in 1987. The Corporation's boundaries were extended in 1997 when 23 fringe villages were added to the existing corporation limit. Draft D.P. prepared for newly added villages was published and is now partly sanctioned. PMC is working on modifying Development Plan of the old PMC area as it has lived its life of 20 years. Since last D.P. exercise that was done during 1982 to 1987, PUNE is a different city as compared to what it was earlier. It is now proposed to study and review in depth, housing scenario to help the planners, City Managers, elected representative and peoples Associations to shape future of PUNE city area for next twenty years. The proposed D.P. is expected to address various issues including housing for poor and migrants.

With these intentions MASHAL has now prepared report on housing Scenario for PMC area that will help initiation of appropriate housing policies and implementation strategies to enable housing satisfaction for PMC area over next 20 years.

To assess and understand housing scenario, a sample survey was conducted covering old limits of PUNE Municipal Cooperation spread over an area of 145.92 sq.km. with population of 21, 63,066¹. The whole area is divided into the 14 Administrative wards as per PMC and the primary survey is done on the basis of the number of households in each individual ward. Primary survey covered a 01% sample of total households, to represent the entire current housing scenario in old limit of PUNE Municipal Corporation. Sample represents different household typologies randomly selected and surveyed in each administrative ward. Sample will cover all typologies i.e. Wada's, Chawls, Public housing, Apartments, Bungalows, co-op societies and Slums.

¹ Demographic Projections for Pune Municipal Corporation, Gokhale Institute of Economics and Political Science, Pune 2007-2027

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ACRONYM

BSUP	: Basic Services for Urban Poor
DP	: Development Plan
DCR	: Development Control Regulations
EWS	: Economically Weaker Section
HH	: House hold
INR	: Indian Rupees
JNNURM	: Jawaharlal Nehru National Urban Renewal Mission
LIG	: Low Income Group
MASHAL	: Maharashtra Social Housing & Action League
MCGM	: Municipal Corporation of Greater Mumbai
MHADA	: Maharashtra Housing & Area Development Authority
NGO	: Non Governmental Organisation
PMC	: Pune Municipal Corporation
PPHA	: Person per Hectare
SRA	: Slum Redevelopment Authority
SRD	: Slum Redevelopment Scheme
SRS	: Slum Rehabilitation Scheme
TDR	: Transfer of Development Right
TP scheme	: Town planning scheme

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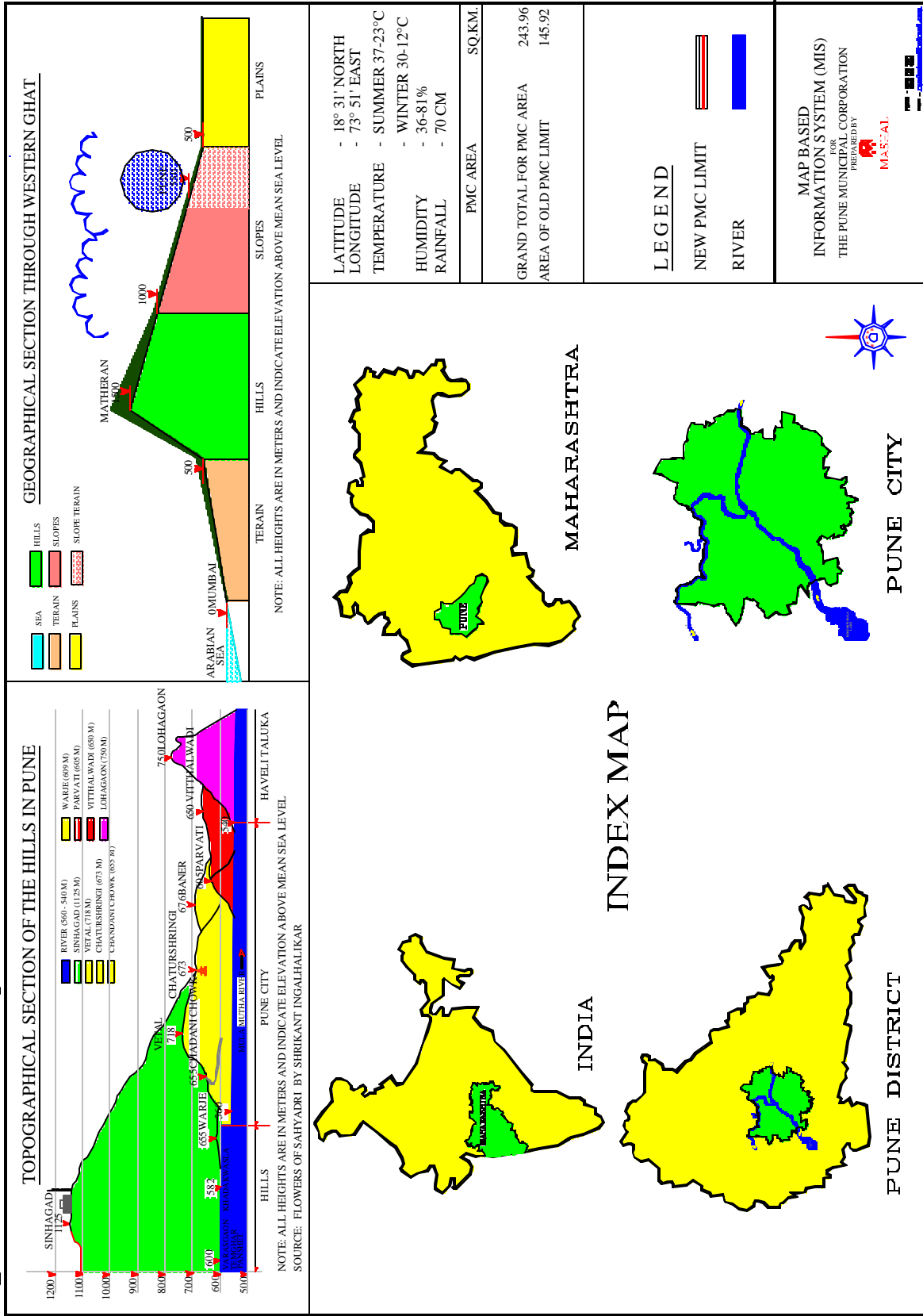
1. INTRODUCTION

1.1 HISTORICAL PERSPECTIVE OF PUNE CITY

Pune City is not an exception to the phenomena of growth of a traditional city into a prosperous Metropolis city was ruled by many dynasties in past centuries. The earliest evidence found in copper plates of 758 A.D. and of 768 A.D. reveals that the *Rashtrakootas* ruled this region then. At that time, Pune was referred to as *Punaka Vishya* and *Punya Vishaya*. Copper plates of 960 A.D. refer to it as *Punaka Wadi* and *Punaka Desha*. Here *Vishaya* means region. The Pune Gazetteer explains the term Pune as *Punya* – a holy place. In Hindu tradition, a confluence of two rivers is sacred. Hence, this city where there is a confluence of two rivers is *Punyanagari*.

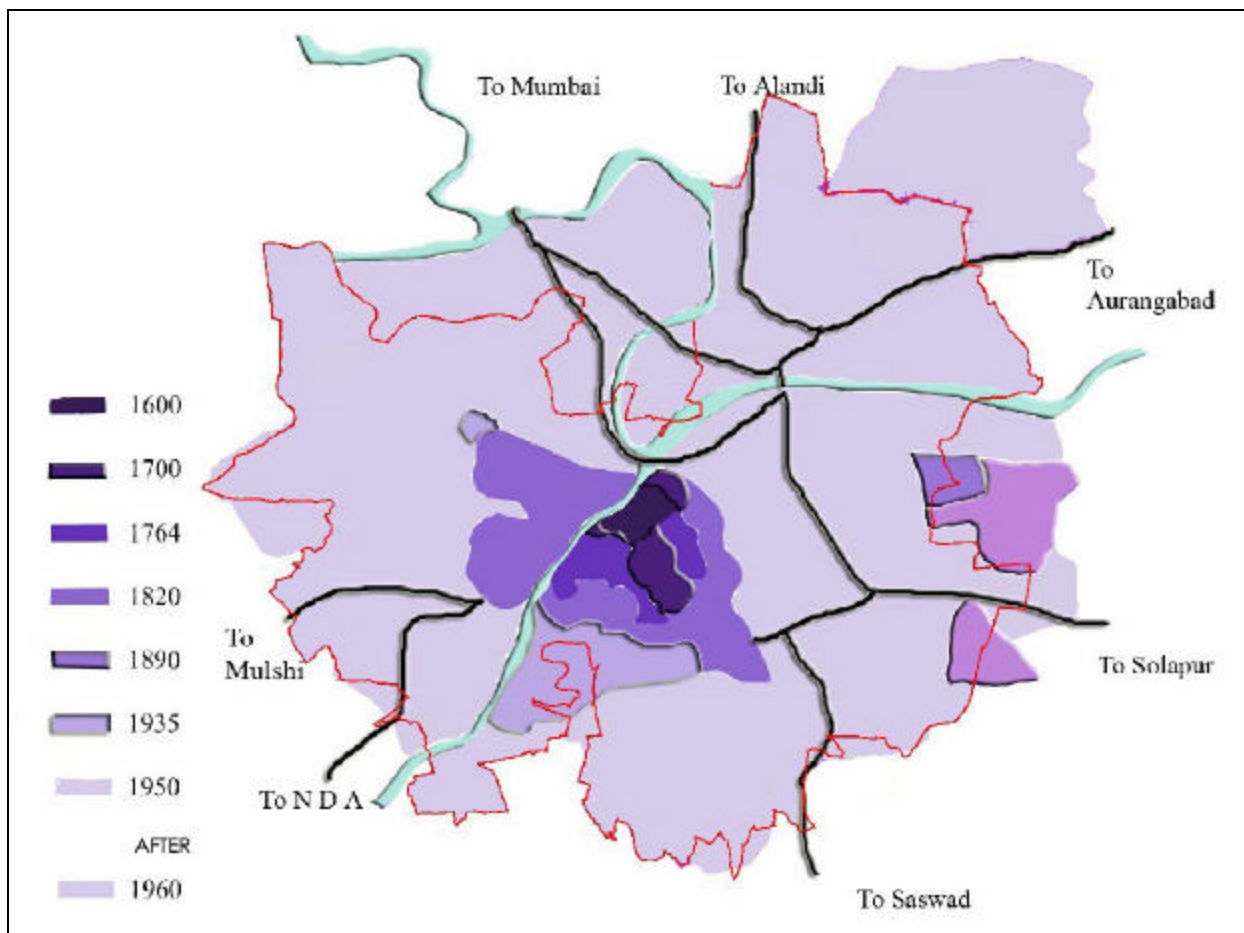
Looking into the history of Pune city it was found that Pune was originally a small village situated on a raised plateau slightly away from the Mutha River. This oldest part of Pune or the original nucleus of the city corresponds to the southern part of the previous Kasaba ward (now it is added into Bhavani Peth, Ghole patil and Vishram baag ward) which could be indicated by the position of temples of Ganapati and Kedareshwar. The sites of the original houses of all the oldest families in Pune lie in the neighbourhood of these two temples. It is said that the old Pune Town was fortified under Mohammedans (i.e. before 1637) and that the army and its followers with a few Mohammedan villagers were alone allowed to live within the wall whereas the traders, Brahmins, Hindu cultivators and others with village officers lived outside the wall. In 1637 when the town came into the final possession of Shahaji the town consisted of only four areas namely Kasaba, the original town within the fortified walls, the present Raviwar peth (or then the Murtazabad founded by Malik Amber), the present Somwar peth (or the then Shahapur) and the present Shaniwar peth. The present Mangalwar peth was founded by Shaistakhan in 1663 when he captured Pune. The present Budhwar peth was founded in 1703 by Aurazeb. Further development of the towns was witnessed after 1720 i.e. when Bajirao-I made it the capital of the Maratha realm. In 1730 Bajirao-I built Shaniwar wada for himself.

Figure 1.1: Index Map of Pune



He founded the present Shukrawar peth in 1734. The third Peshwa, Balaji Bajirao added four new areas namely the Guruwar peth, Nagesh, Ganesh and Narayan Peth during the period from 1750 to 1755. The main shrine of the Parvati hills was built in 1749 and the Lakadi bridge (the present Sambhaji bridge) was built in 1761. The present Bhawani and Sadashiv peths were added in 1767 and in 1769 respectively during the reign of Madhavrao Peshwa. The present Rasta, Nana and Ghorpade peths were added during the region of Sawai Madhavrao Peshwa i.e. during 1781 to 1789.

Figure 1.2: Growth of Pune since 16th Century.



Source: MASHAL 2009

The ward Bhamburda i.e. present Shivajinagar rose to importance in the post 1911 period. The period between 1891 and 1911 was a disturbed period in respect of public health in Pune and no increase in the population took place during this period. Water supply to town was brought from the Katraj aqueduct built in 1750. Parvati lake was

built in 1755 at the southwest corner of the town by Balaji Bajirao as a feeder to the Katraj aqueduct. Ambil Odha stream was dammed and diverted (with sluices provided in the dam) to fill the lake from the floods of the stream. In 1782 the city was provided with drainage. For the City's water supply two more aqueducts were built one in 1778 by Sardar Rastee at Kondhawa and another in 1790 by Nana Fadanawis at Narhe Ambegaon to the south of Pune.

1.2 DEVELOPMENT OF NEIGHBOURHOODS IN PUNE

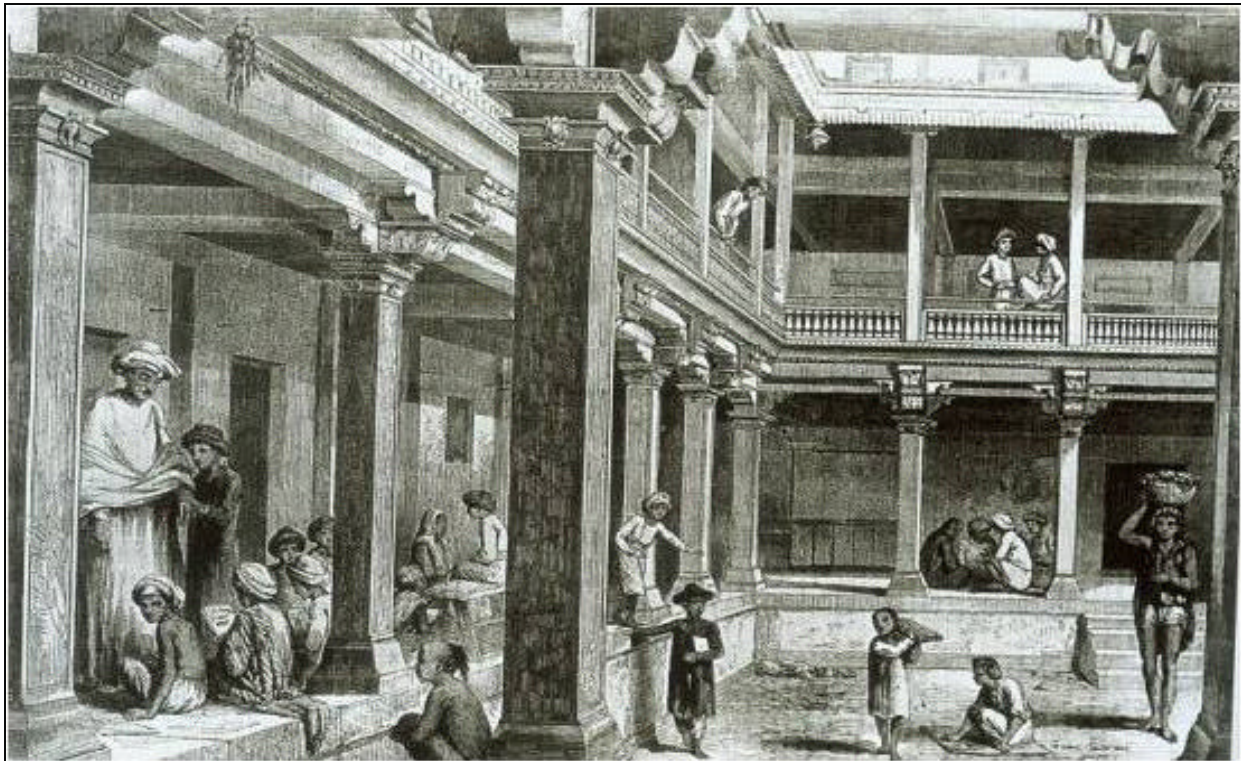
As is revealed by the Historical records the oldest part of Pune city or the original nucleus town was located in the former fortified Kasaba ward where only the Mohammedan army and a few Mohammedan villagers were allowed to stay. This old fortification was later razed and leveled in 1725 by Bajirao-I and the site was given to the various sardars (Lords) for house building. Therefore, the inhabitants of this ward would be of the old Sardar families and of those who then rendered services to the Mohammedan army prior to the razing of the fortified wall and to the Sardar families after 1728. Raviwar and Budhwar peths were then inhabited by the trading community. These two wards have been the Central trading area of the city even prior to 1637. Raviwar peth also contained artisan activity like carpentry, leather making, basket making, potteries making etc. and hence this ward was inhabited by the trading community and by the artisans. The small cultivators and the depressed class settled in Mangalwar peth. The Brahmins and the village officers settled in Shaniwar and Somwar peths respectively. Shukrawar mostly contained floating population of military personnel. The labourers and artisans who migrated to the growing Pune city settled in Guruwar and other peths adjacent to the Central trading area of the city. Nana and Bhavani peths were later inhabited by the communities low in economic and social scale and who were engaged in the movement of marketable goods for the trading community. The economically better class among the Brahmins from Shaniwar peth later shifted to Sadashiv and Narayan peths. Ghorpade peth was formed as a result of rapid increase in the population of artisans' petty business men and casual labourers. Rasta peth rose to importance only after the formation of Pune Cantonment in 1818. Persons who rendered civil services to the English army in the Cantonment settled in the

Rasta ward. The population in Rasta ward was mostly migrants. The rich class of population from the various areas of Pune shifted to the Bhamburda ward which is the present Shivaji Nagar during the period of 1911 to 1935. Later some more villages were added to the Pune city. They are Hadapsar, Mundhava, Bibwewadi, Bopodi, Aundh-Pashan, Kothrud, etc.

1.3 PATTERN OF HOUSING

The pattern of housing also differed from ward to ward depending on the section and class of people living in them. The formation of neighbourhoods by Brahmin community settled in the areas of Shaniwar, Narayan and Sadashiv peth areas whereas the small cultivators and socially depressed class of people lived in Mangalwar, Nana peths. Also, those who lived in Budhawar were traders whereas those who lived in Raviwar, Guruwar and Shukravar areas were artisans, small business men and Casual labourers. Those who lived in Shivaji Nagar and some parts of Sadashiv peth were the richer class.

Figure 1.3: Showing picture of a typical Wada structure from inside



Pattern of housing changes with the choice of people with their ability to pay and it shows the impact of the culture of the inhabitants residing in the respective area. The houses of the trading community had the entrance directly on the main roads whereas those of the Brahmins had compound walls around the "Wada's" and several houses within a "Wada" had their access through an open varandah leading to the main gate of the compound walls. The houses of the artisans, labourers and of the socially depressed were often huts or structures of improper sizes and heights and were located in cramped insanitary surroundings.

1.4 REJUVENATION OF PUNE

History states that Pune was raised and burnt more than once in the past. The wards to suffer most heavily during invasions were Budhwar and Raviwar peth areas, they being the central trading areas. After every attack the houses were again built and the areas were redeveloped. A study of the development of various wards in Pune would indicate that except for the annexation of Bhamburda and other wards to the north of Kasaba peth during the post 1911 period, the city mostly grew and developed to the south of Kasaba peth. This is probably because the attacks of Pune were mostly from its north and the attacker's raised and burnt wards upto Raviwar and Budhwar peth after their entry into the city gates through Kasaba. The attacks and the natural calamities which destroy the cities give opportunities to the planners to rebuild the cities in a planned manner. The city planners of Pune got such an opportunity in 1961 when the unprecedented floods of the Mutha river consequent upon the bursting of Panshet and Khadakwasla Dams washed away most of the old structures in Pune from old Kasaba, Mangalwar, Shaniwar, Narayan and Bhamburda wards. Of the 5292 buildings affected by the floods in the city about 3900 were from the above mentioned old wards. Thereafter the modern multi storied buildings have been constructed in these wards or on entirely new sites such as the Lokmayanagar, Maharshinagar, Parvati Darshan, Ashoknagar etc. and orderly planning in that affected wards has been enforced by the City Planners in Pune. The old look of the city of Pune is now fast disappearing in the wake of rebuilding it into a metropolitan city.

Pune Municipal Corporation executes Development Plan for old PMC area (138.85 sq. km.)² which was sanctioned by the State Govt. in 1987. The Corporation's boundaries were extended in 1997 when 23 fringe villages were added to the existing corporation limit. Draft D.P. prepared for newly added villages was published and is now partly sanctioned. (97.84 sq. km.)³ PMC is in working on revision of D.P. of the old PMC area as it has lived its life of 20 years. Since last D.P. exercise that was done during 1982 to 1987, Pune is a different city as compared to what it was earlier.

1.5 SUB OBJECTIVES

- 1) Study various Housing Systems and subsystems in Pune city
- 2) Study of the Central and State Housing Policies
- 3) Studying the housing pattern (as per age of houses, construction material, FSI, density, rental housing, carpet area etc) in all type of housing in the city
- 4) Study of the existing housing options in Pune city under the formal and informal sectors including public and private housing (condition in slums, Wada's etc.)
- 5) Comparing and analyzing different housing options in city
- 6) Studying Real estate scenario and urban land markets in the city
- 7) Studying the impact of new housing development in and around the city on the existing housing systems
- 8) Studying the role of MHADA, SRA schemes, housing under JNNURM etc on housing delivery
- 9) Working out the existing housing need, stock and shortages in the city
- 10) Scenario generation for housing satisfaction (do nothing scenario and consideration of Metro and BRT proposals)

1.6 THE SAMPLE SURVEY OF HOUSING

There are various methods of assessing the housing scenario of city, characteristics of tenants and housing. Based on questionnaire survey data, two general methods are used to derive the demand assessment. They are Revealed preference and Stated

² CDP, Pune

³ CDP, Pune

preference methods. Revealed preference method use the existing housing conditions where each scenario is evaluated by individuals in relation to their existing conditions. A set of questionnaire given in the appendix to the report designed to collect information on : year of construction, type of ownership, material used for construction, area of plot, built up area, location in respect of availability of sanitary facilities in respect of selected buildings and to collect information indicating availability of amenities such as a direct municipal tap, & bathroom, a latrine in respect of houses within the buildings and indicating income groups, occupancy ratio in terms of living space per person, current rent for residential areas, and use of other facilities like solar energy and rain water harvesting. Stated preference methods make use of hypothetical scenarios with various housing options.

1.7 SAMPLE SELECTION

Table 1.1: Showing sample selection

Sr. no	Administrative block	Area of old limit (sq.km)	Population of old limit	No of HH old limit	SLUM SAMPLES	OTHER SAMPLES	1% SAMPLES /WARD
1	Sangamwadi	12.61	98088	21797	139	79	218
2	Yerwada	16.62	79535	17675	53	123	177
3	Ghole Road	12.78	238098	52911	152	377	529
4	Karve Road	6.54	74495	16554	63	103	166
5	Varje-Karvenagar	7.24	117025	26006	130	130	260
6	Dhole Patil Road	8.48	275055	61123	443	168	611
7	Kasaba Peth/Vishrambagh	5.64	244622	54360	299	244	544
8	Hadapsar	16.79	57207	12713	55	72	127
9	Bibvewadi	12.06	101044	22454	71	153	225
10	Bhavani Peth	2.82	191698	42600	132	294	426
11	Sahakar Nagar	9.92	237356	52746	199	329	527
12	Tilak Road	2.35	29004	6445	32	32	64
13	Dhanakwadi	3.79	260024	57783	36	542	578
14	Aundh	28.31	134992	29998	97	203	300
	Total	145.95	2138243⁴	475165	1902	2850	4752

Source: MASHAL, 2009

⁴ Demographic Projections for Pune Municipal Corporation, Gokhale Institute of Economics and Political Science, Pune 2007-2027

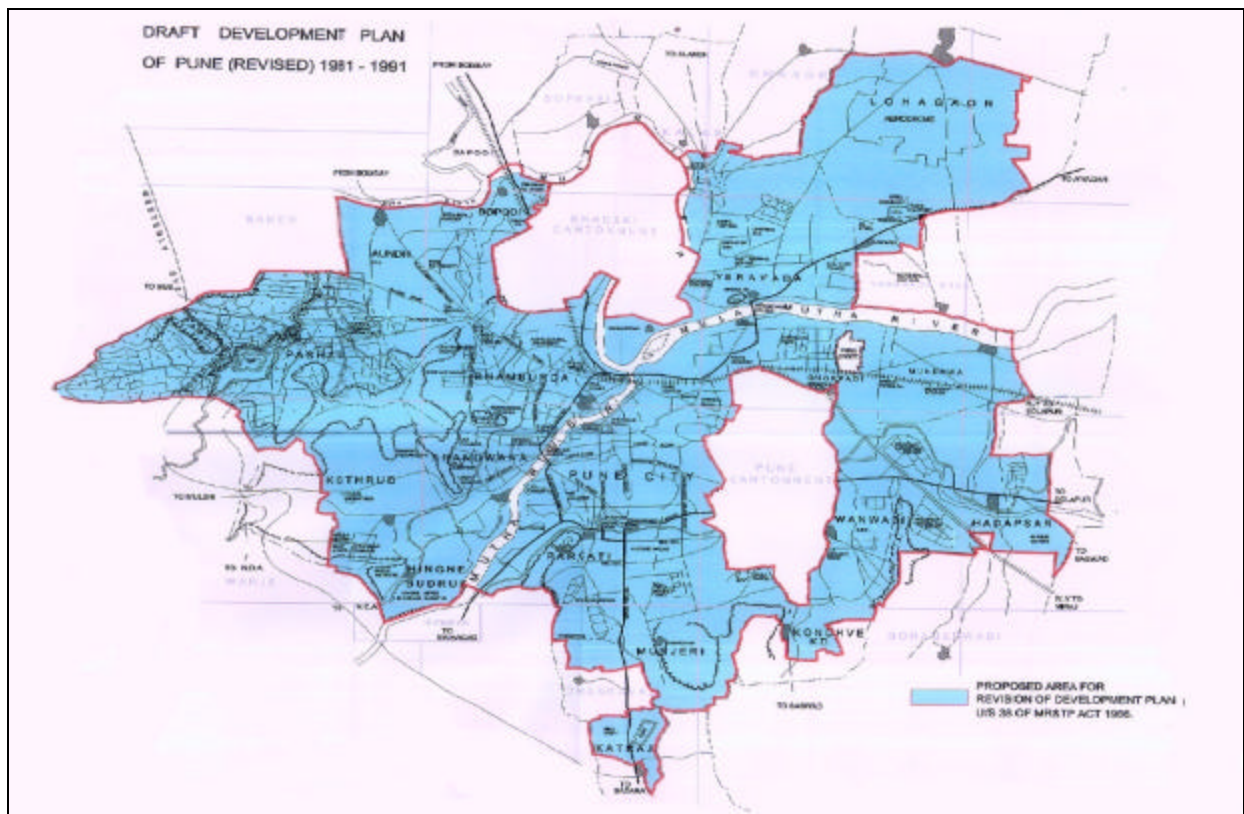
Each scenario is then evaluated by individuals stating their preference. This method is used for the analysis of different case studies which are selected all over the city. The sample survey of housing and case studies of different housing typologies from different part of city are selected to integrate a variety of housing issues from different parts of city the results of which have been described in this report. Study was conducted in Pune city during the first two quarters of 2009.

2. REVIEW OF HOUSING CONDITIONS

2.1 AS PER CENSUS OF INDIA 2001

The Old city areas of Pune have housing in the form of Wada's as these are the areas where settlements began. These parts even today are mainly residential areas in old city which now a day going through a process of redevelopment. The city is a host to many renowned educational institutes and is growing in importance as an IT hub. This has led to an increase in demand for housing for all sections of society. The demand by higher income group is normally being met by the private builders. As housing for the lower income is not met sufficiently, slums have come up all over the city.

Figure 2.1: Map showing area under new development plan



Source: PMC. Pune

The prominent residential areas in East Pune include Koregaon Park, Hadapsar, Kalyani Nagar and Viman Nagar. Koregaon Park is the most popular up market residential area of Pune having excellent infrastructure of retail outlets, hotels, etc. in the vicinity. This area boasts of some excellent quality constructions of apartments and row houses. Aundh to the west of Pune is mainly a new good emerging residential area. At one time, Aundh was considered the fastest growing locality in the entire Asian continent. Once a dense forest, this area now comprises of some excellent housing complexes with ample retail shops and the requisite infrastructure to service the area. Pashan is another residential area with schools, banks hospitals and some educational institutes. The prominent areas in South Pune include Fatima Nagar, Kothrud, Wanowrie and Bibwewadi. Kothrud has many residential complexes along with a few educational institutes and commercial establishment of Kirloskar Cummins. Bibwewadi is another area having a higher density of residential complexes. The dynamics of housing situation are reflected in the flow of services which accrue from a given housing stock and its temporal changes. These could be with respect of quality of shelter, size, amenities, and tenure. The chapter review of present housing condition in Pune based on available information that is Census on Houses and Household amenities and assets. The analysis is based on 2001 data.

2.1.1 HOUSING SITUATION KEY PARAMETERS AS PER CENSUS 2001

As per Census of India 2001 total population of Pune was 25, 38,473 accommodated in total 5, 55, 771 Households resulting into a household size of 4.57 throughout the city.

Table 2.1: Existing Housing scenario

Population	2,538,473
Households	555,771
Households Size	4.57

Source: Household assets and amenities, H – Series tables, Census of India 2001

2.1.2 HOUSES DISTRIBUTION BY OCCUPANCY

Though on one hand an acute residential housing stock shortage observed throughout the city, on the other hand there is high vacancy rate of 18% which is much higher than

state average of 12%. This could be attributed to the restrictive Rent control Act provisions as well as the property tax assessment system for rental properties which discourage the owners from letting their properties for rental purpose. But due to property tax revisions in recent years more of the housing stock can be expected to be released in the rental market which in turn may narrow the present housing stock.

Table 2.2: Housing occupancy

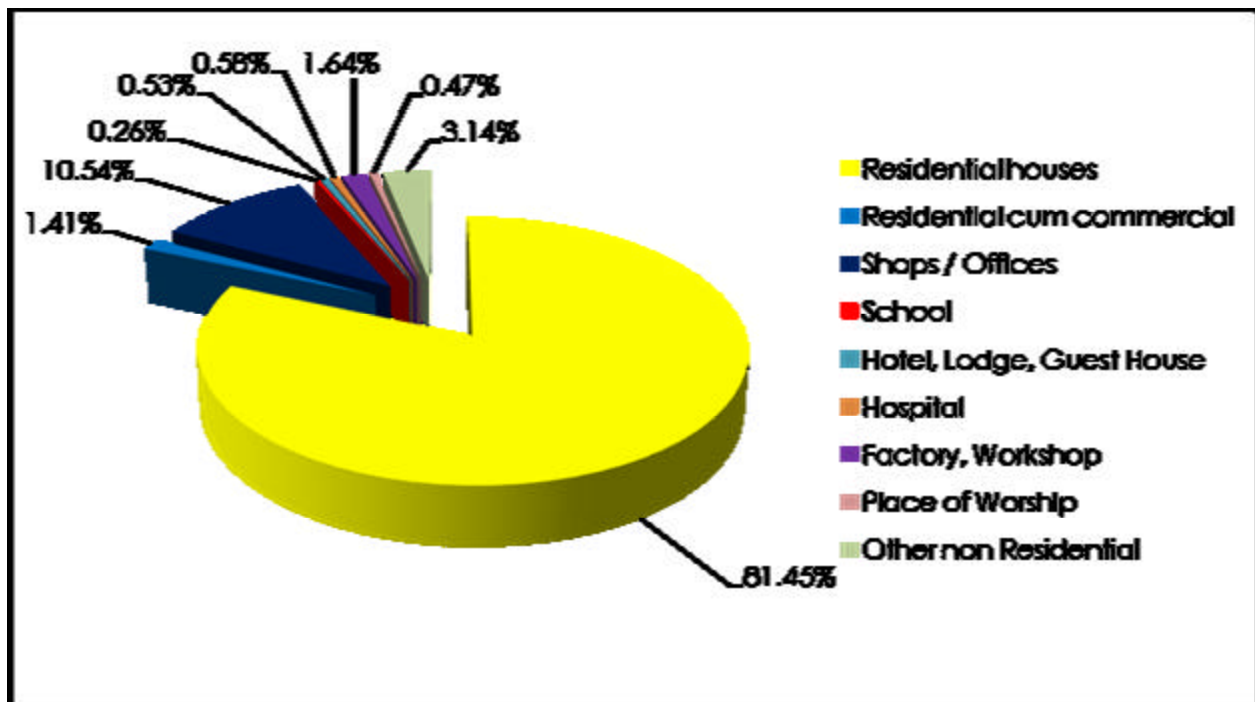
Census Houses	763,133	100%
Occupied Houses	625,336	82%
Vacant Houses	137,797	18%

Source: Household assets and amenities, H – Series tables, Census of India 2001

2.1.3 HOUSES DISTRIBUTION BY USE

The distribution of Census houses by use in Pune indicates that about 509,819 houses contributing about 82% of that of occupied houses is as under residential use and total 65,951 are shops and offices with about 11% share from total 625,336 occupied houses.

Figure 2.2: Percentage distribution of occupied houses



Source: Household assets and amenities, H – Series tables, Census of India 2001

Table 2.3: Housing distribution by its use

Census Houses	763133
Occupied Houses	625,336
Residential houses	509,819
Residential cum commercial	8,810
Shops / Offices	65951
School	1,615
Hotel, Lodge, Guest House	3,318
Hospital	3,603
Factory, Workshop	10,265
Place of Worship	2,935
Other non Residential	19,650

Source: Household assets and amenities, H – Series tables, Census of India 2001

2.1.4 HOUSEHOLD DISTRIBUTION BY CONDITION OF HOUSES

The distribution of Census houses by use in Pune indicates 82% as residential use and shops and offices with 11%. Of total household 68% have an access to good quality of housing. A small number of dilapidated houses exist in city which is mainly into the core area of the Pune as the new areas are emerging now a day with new settlements. The dilapidated houses which are 2.38% of total housing are contributed by the old Wada's and Chawls in core city which are not maintained by the owners due to impact of rent control act.

Table 2.4: Condition of Housing

Household by condition of houses	524,319	100%
Good	358,900	68.45%
Livable	152,923	29.17%
Dilapidated	12,496	2.38%

Source: Household assets and amenities, H – Series tables, Census of India 2001

2.1.5 HOUSEHOLD DISTRIBUTION BY TYPE OF CONSTRUCTION

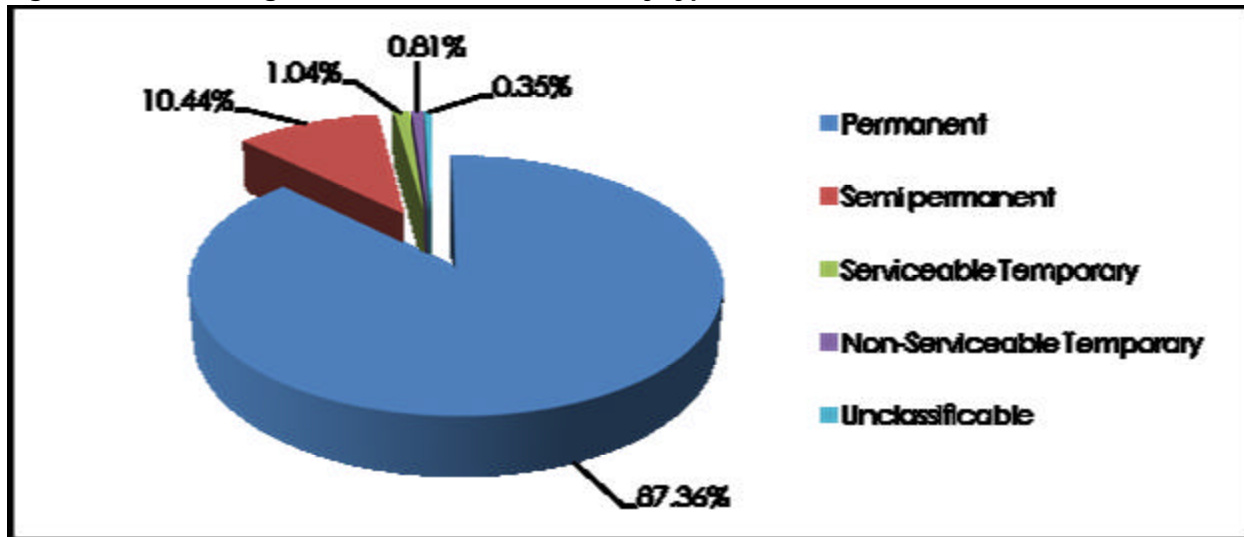
As per as type of construction is concerned Pune consist of total 87% of permanent housing unit which fares well as compared to 82% in the state, followed by 10.45% of the semi permanent housing units.

Table 2.5: Type of Construction

Household by type of construction	517,319
Permanent	452,103
Semi permanent	54,040
Serviceable Temporary	5,397
Non-Serviceable Temporary	4,199
Unclassifiable	1,797

Source: Household assets and amenities, H – Series tables, Census of India 2001

Figure 2.3: Percentage of household distribution by type of construction



Source: Household assets and amenities, H – Series tables, Census of India 2001

2.1.6 HOUSEHOLD DISTRIBUTION BY TENURE

Of total households Pune residential market is spurring by mainly the end users only as the Census data states that about 67% of households are owned followed by about 29% which are rented. A small share of about 4% is contributed by other i.e. for the Public housing by the government officials.

Table 2.6: Distribution by Tenure ship

Household by ownership	524,319	100%
Owned	351,569	67.05%
Rented	151,414	28.88%
Others	21,336	4.07%

Source: Household assets and amenities, H – Series tables, Census of India 2001

2.1.7 DISTRIBUTION BY TENURE AND ACCESS TO BASIC SERVICES

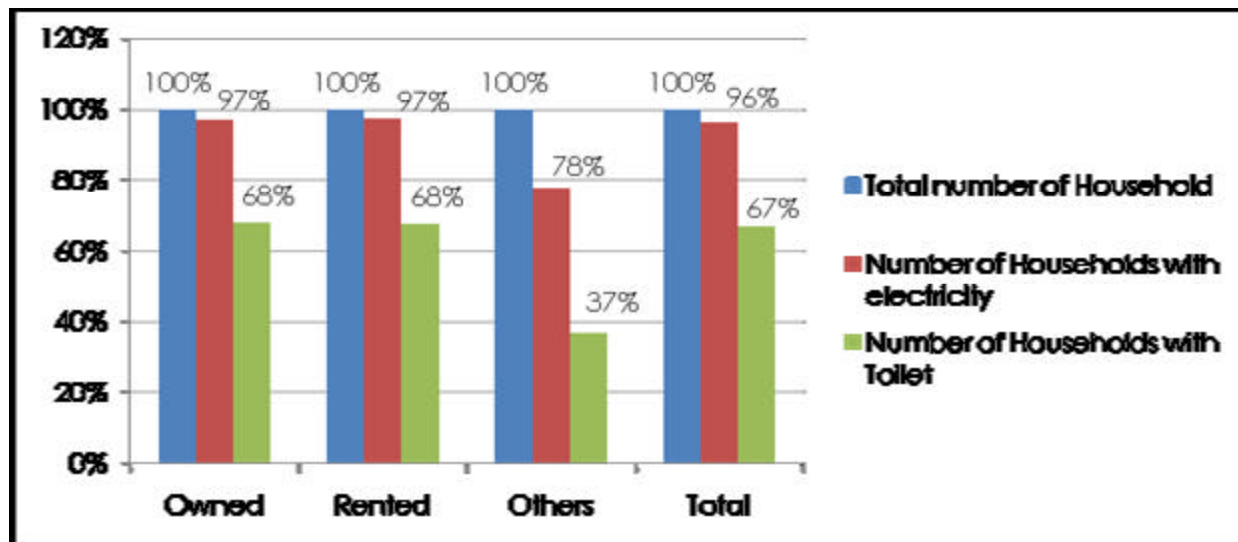
When tenure of a household is related to the access to basic services, it indicated that in Pune the tenure of a household does not have a bearing on access to basic services. Both the households with owned as well as rented houses have equal access to electricity and sanitation.

Table 2.7: Household distribution by tenure and access to basic services

Tenure ship status	Total number of Household	Number of Households with electricity	Number of Households with Toilet
Owned	351,569	341,512	239,800
Rented	151,414	147,569	102,743
Others	21,336	16,605	7,908
Total	524,319	505,686	350,451

Source: Household assets and amenities, H – Series tables, Census of India 2001

Figure 2.4: Percentage of total household distribution by tenure and access to basic services



Source: Household assets and amenities, H – Series tables, Census of India 2001

It shows that of total 96 % households has access to electricity and total 67 % households has toilet facilities.

2.1.8 HOUSEHOLD DISTRIBUTION BY HOUSEHOLD SIZE AND NUMBER OF DWELLING ROOMS

It shows that of total almost 50, 688 of households with 4 members live in one room houses whereas 44, 147 Households with five members live in one room houses. This indicates an overall crowding within household units in which more members are forced to share a housing unit.

Table 2.8: Household distribution by household size and number of dwelling rooms

HH Size	Total No. of HH	No exclusive room	1 Room	2 Rooms	3 Rooms	4 Rooms	5 Rooms	More than 5 Rooms
1	20,455	2,658	9,292	3,748	3,043	1,242	277	195
2	57,435	5,173	22,338	12,641	10,767	4,692	1,088	736
3	83,030	6,830	30,092	20,251	16,775	6,531	1,517	1,034
4	139,971	10,833	50,688	34,761	26,721	11,895	2,866	2,207
5	105,671	9,442	44,147	24,963	15,488	7,530	2,192	1,909
6 to 8	94,444	8,339	39,263	22,543	12,565	6,918	2,127	2,689
9+	23,313	1,359	7,024	5,658	3,790	2,589	1,019	1,874
Total	524,319	44,634	202,844	124,565	89,149	41,397	11,086	10,644
%	100%	8.51%	38.69%	23.76%	17.00%	7.90%	2.11%	2.03%

Source: Household assets and amenities, H – Series tables, Census of India 2001

As it can be observed from the table that, about 38 % of total population of Pune lives in a household who are having a single room, followed by about 24 % of total population live in two room house.

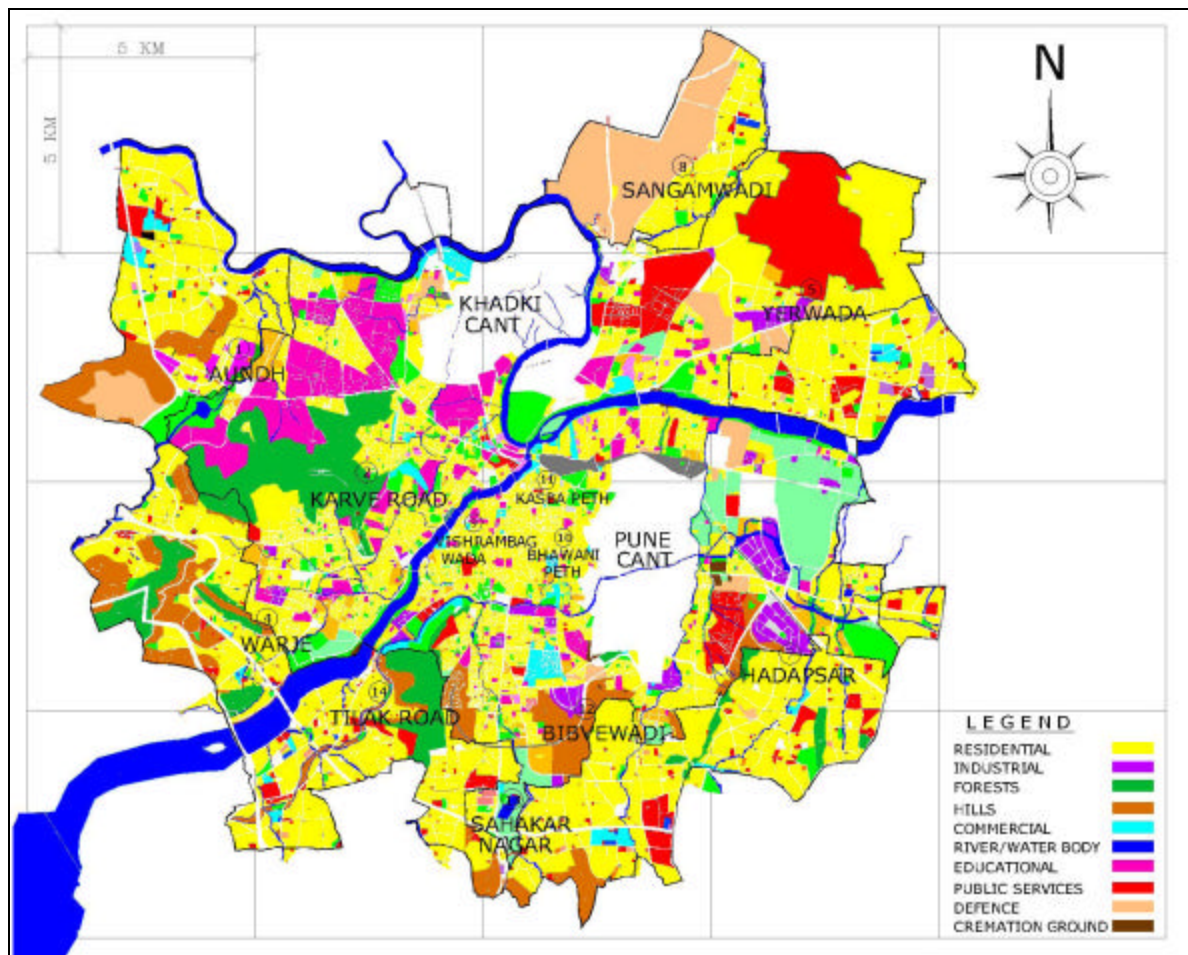
2.2 LAND USE

The land use plan of Pune city mainly consists of residential area. With maximum area is reserved in for educational institutions in the western part of city representing the area in Aundh and Karvenagar wards. Industrial areas are distributed mainly in the eastern part of the city. A chunk of land is reserved in the eastern part of city for public services in the Yerwada area.

2.2.1 DEVELOPMENT PLAN

Development of Pune as a city started since 1818, with the city area was 5 sq.km. The old Development Plan was revised in 1987. The area of Pune city was 138.85 sq.km. in 1987 with the addition of adjacent villages in 1997, the current area of PMC jurisdiction is 243.84 sq. km. For the newly added areas, the PMC has prepared a separate new Development Plan.

Figure 2.5: Landuse for Pune Municipal Corporation



Source: Pune Municipal Corporation

1987 Development plan states that 50.58 sq.km areas i.e. about 33% of land reserved for residential area. The residential area of Pune is 43.00% of the total area in 2005 Development plan as this DP includes newly added fringe areas of City. The newly added areas to the Pune Municipal Corporation limit are more utilized as residential

areas considering the growing demand of housing by the city. The tendency of economically weaker section to build their housing unit upon hills as ample land is available for their housing is also being represented by the higher income groups comprising of high rise buildings as they want to stay away from city for fresh air and peace.

Table 2.9: 1987 & 1997 revised landuse

Category	1987 D.P. (Sq.km.)	Extended area D.P. (Sq.km.)
Residential	50.58	41.19
Low Water Residential Area	---	3.32
Reservation	---	17.20
Information and Science Department	---	0.09
Industrial	7.28	2.39
Commercial	2.35	1.49
Defence Area	---	7.38
Transport	22.00	---
Public & Semi Public	15.22	1.37
TPS Area	---	5.84
Bio-Technology and Agriculture Zone	---	0.76
Green Belt	---	0.51
Forest Department	---	7.33
Road	---	9.30
River and Nala area	---	1.84
Public Utilities	1.38	---
Recreational	12.73	---
Reserved Forest & agriculture	2.35	---
Hills and Hill slopes	12.45	---
Water Bodies	12.04	---
Total	138.36⁵	100.01

Source: PMC, Pune

⁵ Initially Development plan for old city was not included, Dapodi excluded in 1997 and the Pashan area which was included later on. Leading to total area as 145.95 sq.km.

Since the Public utilities area has not changed over period of time its percentage over total landuse has decreased. Details about the Development Plan and Landuse are discussed further in this report at different stages.

2.2.2 DEMOGRAPHY

In last 50 years, the city's population has grown by more than five times. For the last four decades, the decadal growth rate in population has been in excess of 40%. The population of Pune during the last four decades grew at an average annual rate of over 3.4 % against the national average of 2.1 % and state average of about 3.3 %.

Table 2.10: Showing decadal population of city and slum

Census year	Population	Growth rate	Slum Population	% Slum to Population
1951	488419		38500	8
1961	606777	24.23	96000	16
1971	856105	41.09	230000	27
1981	1203363	40.56	360000	30
1991	1566651	52.80	541000	34.53
2001	2538473	58.32	889000	35

Source: Census of India

It is clear from the table that the percentage of population of slum has increased over a period of time. At the time of independence slum population of Pune was only 8% which has increased to 35 % to that of city's population in 2001.

2.2.3 TOTAL MIGRATION IN PUNE

In 1991-2001, migration was 502341 persons. Pune has the highest decadal migration rate (19.79%) in 1991-2001 in the country.

The Composition of local and migrant population in Pune city in 2001 is as per Census of India is as shown in Table. Of the total population a little more than one fifth population is migrated in decade 1991 to 2001. Male migrant's percentage is higher than female migrants. This may be an indication of male migration for employment purposes.

Table 2.11: Total migration in Pune

Parameters	Total Persons (1991-2001)		
	Total	Males	Females
Total Population 2001	2538473	1321338	1217135
Total Decadal Migrants (1991 - 2001)	431692	240163	191529
% to total Population (Migration Rate - Decadal)	17.00%	18.18%	15.74%
% to total Migration		55.63%	44.37%

Source: Gokhale Institute Report.

Male population normally migrates first and after settling down in secure jobs and acquiring housing bring their wives and children to new city they are migrated.

2.3 ISSUES ARISING FROM THE STUDY

House condition and other statistics as generated from Census 2001 are now too old. This leads to various study questions about the current housing conditions about the city such as,

- 1) Does the city still have a high vacancy rate?
- 2) Census information on House condition shows very little dilapidated houses (only 2.39%) what is the current scenario for the same?
- 3) While majority of the population living in slums today does have substandard dwellings?
- 4) Census data also shows a high % of house ownership. What is the situation today?
- 5) Will there be a demand for rental Housing? Can there be a reasoned argument for that?
- 6) Census data also shows a problem of access to Sanitation. Does it still PERSIST?

3. HOUSING POLICIES

Increase in housing stock is mainly gets affected by not only the national housing policies but also by state level policies. Different initiatives have been taken by the Housing boards to improve housing conditions. Different housing policies implemented at different level like National, state and city. The study is focusing on housing policies their objectives and implementation how these policies can help us to increase the housing stock of the city. This chapter focuses on the initiatives taken by government with the help of housing policies and how that has helped in increasing housing stock of Pune.

3.1 NEED OF HOUSING POLICY

National Urban Housing and Habitat Policy 1997 states that, by 1997 the total housing shortages in India was estimated to be 13.66 million units, out of which 7.57 million units would be in the urban areas. More than 90% of this shortage is for the poor and the low income category. Also, the urban housing shortage has been estimated at about 24.7 million units at the end of the 10th Five Year Plan (2006-07). 99% of the shortage pertains to Economically Weaker Sections (EWS) and Low Income Groups (LIG) categories. So to improve housing conditions need of housing policy is to cater following different issues of the city,

- 1) Urbanization and Development
- 2) Rural To Urban Shift of Labour
- 3) Balanced Regional Development
- 4) New Integrated Townships and Green Field Development
- 5) Increasing Housing Needs
- 6) Magnitude of Poverty
- 7) Development of Sustainable Habitat
- 8) Focus on special Areas (flood affected relocation land at Gokhale Nagar, Pune)

The different housing policies focus on the issues of catering the housing demand from the different section of income groups to improve housing stock, upgrade healthy living conditions. Planning of housing policies mainly focuses on the various objectives like,

- 1) Urban Planning for different sections
- 2) Affordable Housing stock
- 3) To Increase flow of Funds
- 4) Spatial Incentives(like extra FSI & TDR for SRA schemes by developers)
- 5) To Increase Supply of Land
- 6) Special Provision for SC/ST/OBC/Minorities/Disabled
- 7) Special Provision for Women
- 8) Employment Generation
- 9) Public-Private Partnerships in housing
- 10) Healthy living Environment

For housing sector development government of India has taken initiative of developing strategies for five year plans at a national level. The economy of India is based in part on planning through its five-year plans, developed, executed and monitored by the Planning Commission. With the Prime Minister as the ex officio Chairman, the commission has a nominated Deputy Chairman, who has rank of a Cabinet minister. The tenth plan completed its term in March 2007 and the eleventh plan is currently underway. These five year plans are formulated by the planning commission whose objective is to utilize the country's resources effectively, so that the standard of living of the people improves.

3.2 REVIEW OF FIVE YEAR PLANS WITH RESPECT TO LAND, HOUSING AND SLUMS

3.2.1.1 1ST FIVE YEAR PLAN (1951-56)

- 1) Several Institutions including a separate Ministry and National Building Organization were created
- 2) Emphasis was given on construction of houses for government employees and weaker sections

- 3) A sizeable part of the plan layout was spent for rehabilitation of the refugees from Pakistan and on building the new city of Chandigarh
- 4) Introduction of subsidized scheme for industrial workers in the year 1952

3.2.1.2 2ND FIVE YEAR PLAN (1956-61)

- 1) The Industrial Housing Scheme was widened to cover all workers
- 2) Three new schemes were introduced, namely Rural Housing, Slum Clearance and Sweepers Housing
- 3) Decentralization of Institutional Framework for housing development
- 4) Town and Country Planning Legislations were enacted in many states and necessary organizations were also set up for preparation of Master Plans for important towns

3.2.1.3 3RD FIVE YEAR PLAN (1961-66)

- 1) Gave greater emphasis on land use planning and land acquisition, planned growth of settlements, state capitals of Gandhinagar and Bhubaneshwar were developed
- 2) Setting up of housing boards and other public agencies to take care of the housing shortage

3.2.1.4 4TH FIVE YEAR PLAN (1969-74)

- 1) Plan stressed the need to prevent further growth of population in large cities and need for decongestion or dispersal of population. This was envisaged to be achieved by creation of smaller towns and by planning the spatial location of economic activity
- 2) Housing & Urban Development Corporation (HUDCO) was established in 1970 to fund the remunerative housing and urban development program
- 3) A distinct change was made in the policy to affect shift from the formal housing to site and services programs and environmental improvements of slums
- 4) Scheme for Environmental Improvement of Urban Slums was undertaken in 1972 with a view to provide a minimum level of services, like water supply, sewerage, drainage, street pavements in 11 cities with a population of 8 lakh

and above.

3.2.1.5 5TH FIVE YEAR PLAN (1974-79)

- 1) Reiterated the policies of the preceding plans to promote smaller town in new urban centers, in order to ease the increasing pressure on urbanization. A task force was set up for development of small and medium towns
- 2) The Urban Land (Ceiling and Regulation) Act was enacted to prevent concentration of land holding in urban areas and to make available urban land for construction of houses for the middle and low income groups

3.2.1.6 6TH FIVE YEAR PLAN (1980-85)

- 1) Integrated provision of services along with shelter, particularly for the poor
- 2) The Integrated Development of Small and Medium Towns (IDSMT) was launched in towns with population below 1 lakh for provision of roads, pavements, minor civic works, bus stands, markets, shopping complex etc.
- 3) Plan envisaged to provide for sited and services instead of direct subsidy to EWS category

3.2.1.7 7TH FIVE YEAR PLAN (1985-90)

- 1) Stressed on the need to entrust major responsibility of housing construction on the private sector. A threefold role was assigned to the public sector, namely, mobilization for resources for housing, provision for subsidized housing for the poor and acquisition and development of land
- 2) The National Housing Bank was set up to expand the base of housing finance
- 3) NBO was reconstituted and a new organization called Building Material Technology Promotion Council (BMTPC) was set up for promoting commercial production of innovative building materials
- 4) An Urban Poverty Alleviation Scheme known as Urban Basic Services for the poor (UBSP) was launched
 - a. As a follow up of the Global Shelter Strategy (GSS), National Housing Policy (NHP) was announced in 1988. The long term goal of the NHP was to eradicate house lessness, improve the housing conditions of the inadequately housed and provide a minimum level of basic services and

amenities to all

- b. A special central sector scheme, called Indira Awas Yojna for the scheduled caste/tribe population was launched

3.2.1.8 8TH FIVE YEAR PLAN (1992-97)

- 1) 8th Plan accepts "housing essentially as a private activity" but recognizes the need for state intervention "to meet the housing requirements of a majority of vulnerable sections as well as to create an enabling environment for accomplishing the goal of "Shelter for All" on a self sustaining basis
- 2) Constitution of 74th Amendment Act
- 3) The scheme for NRI investors in housing launched
- 4) The social and other schemes initiated in the earlier plans were to be continued in modified forms

3.2.1.9 9TH FIVE YEAR PLAN (1997-2002)

- 1) 9th plan focuses more on HHs at the lower level of society, such as BPL section, SC/ST, Disabled, Freed Bonded Laborers, Slum Dwellers and Women Headed HHs
- 2) Government will continue to act as facilitator but more direct interventions by the govt. in case of lower segments of the housing market and selected disadvantaged groups
- 3) Two Million Housing Program (2MHP) was launched, out of which 35% dwelling units to be constructed in urban areas
- 4) Land market reforms would be undertaken through restructuring legal, planning and fiscal provisions
- 5) Promoting and adopting energy – friendly, eco friendly and environment – friendly technologies and building materials
- 6) A package of incentives and concessions to attract the private sector to shoulder the task of housing for the urban poor
- 7) Apart from new construction, the Ninth Plan agenda will take up the massive task of up gradation and renewal of old and dilapidated housing stock

3.2.1.10 10TH FIVE YEAR PLAN (2002-2007)

- 1) Repeal of the Urban Land Ceiling and Regulation Act at the State Level
- 2) Rationalization of Stamp Duty is to bring it down to no more than 5%
- 3) Reform of Rent Control Laws, initiated to remove rent control so as to stimulate private investment in rental housing
- 4) Information technology is being introduced to simplify the process of registration
- 5) Reforms in Property Tax are also being sought so that it may become a major source of revenue for the urban local bodies
- 6) Increase the proportion of household savings in the housing sector by legislative changes in the existing income tax laws
- 7) Encouraging the development of new integrated townships through foreign direct investment
- 8) The total number of houses required cumulatively during 10th plan period is assessed at the end is 24.7 million.
- 9) VAMBAY

3.2.1.11 11TH FIVE YEAR PLAN (2007-2012)

- 1) Housing backlog estimate in 11th plan is 26.53 million. Most of it is for EWS and LIG sections, which doesn't seem to be getting translated into economic demand due to lower affordability by the poor
- 2) Despite many policy measures and initiatives, the coverage of urban poor with the intended benefit of adequate shelter and access to basic services is not achieved to the desired extend. Further market forces supported by upward trends in the economic growth have contributed to increasing pressure on urban land. This situation needs to be addressed in future policy initiatives
- 3) Opening of the housing sector to FDI, with limited locking period
- 4) Setting up of REIT and other Real Estate Mutual Funds

The Slum Areas Act of 1956, which consisted of Slum Clearance and Slum improvement, provided as a guideline and was adopted by many states. It included notification of

slums, which in itself implied secure tenure, as people could not be evicted without the approval of competent authority. Tenure regularization was not a part of the Act. Up to the 1970's the policies were based on the notion that slum and squatter settlements with irregular tenure were transient and slum improvement was a temporary measure to ensure healthy living conditions.

It was identified that public housing would not be able to serve all hence Slum improvement was considered an option. Funding from Central and State government launched EIUS to provide basic services to the urban poor in the slums notified under Slum Area Act. EIUS affected 40 million people by 1996. Provision of basic infrastructure gave a sense of security to the slums from the fear of eviction.

The 1980's report on Housing and urban Development was critical of EIUS and Slum Act for not paying attention to tenure and land use. It recommended integration of physical upgrading with secure tenure and prepare city level strategy for slum improvement. It stressed on increasing the supply of land.

Number of policy documents has followed the report. The 7th Five-year plan recommended of the steps to be taken for the security of tenure for the slum dwellers. The National Housing policy (1994) emphasized on the increase in the supply of land and access to the basic services for all. The 8th Five-year plan (1992-1997) complemented the National Housing Policy and highlights the provision of secure tenure as a precondition for the environmental improvement of slums. The 9th Five-year plan (1997-2002) identified the drawbacks of direct land and shelter provision and proposed participation of the private sector in the process of land and shelter supply for the poor. The major concern of the National Housing and Habitat policy of 1998 was to encourage role of private sector through public-private partnership. The policy called for adoption of innovative techniques like land sharing, land pooling, and reserving land for poor etc.

3.2.1.12 NATIONAL HOUSING POLICY (NHP), 1988 (ADOPTED IN 1994)

- 1) To motivate and help all people, in particular, the houseless and the inadequately housed, to secure for themselves affordable shelters through access to land, material, technology and finance

- 2) To encourage investment in housing in order to achieve a sustained growth of nations housing stock, and its proper conservation, renovation and up gradation
- 3) To create an enabling environment by eliminating constraints and developing efficient and accessible system for the delivery of inputs to maximize housing stock
- 4) To improve the environment of human settlements with a view to raising the quality of life through the provision of drinking water, sanitation and other basic service.
- 5) The long term goal of the NHP was to eradicate house less ness, improve the housing conditions of the inadequately housed and provide a minimum level of basic services and amenities to all. The role of Govt. was conceived, as a provider for the poorest and vulnerable sections and as a facilitator for other income groups and private sector by the removal of constraints and the increased supply of land and services.

3.2.1.13 NATIONAL HOUSING POLICY (NHP), 1998

- 1) Creation of surpluses in housing stock either on rental or ownership basis
- 2) Providing quality and cost effective shelter options, especially to the vulnerable groups and the poor
- 3) Ensuring that housing, along with the supporting services, is treated as a priority and at par with infrastructure sector
- 4) Removing legal, financial and administrative barriers for facilitating access to land, finance and tech.
- 5) Forging strong partnership between private, public and cooperative sectors to enhance the capacity of the construction industry to participate in every sphere of housing and habitat
- 6) Using technology for modernizing the housing sector to increase efficiency, productivity, energy efficiency and quality
- 7) The government through a National Agenda declared "HOUSING FOR ALL" as a priority area and has set a target of construction of 2 million houses every year with emphasis on the poor and deprived, out of which 0.7 million houses

shall be constructed in the urban areas

In comparison of approaches in National Housing Policies of 1988 and 1998 we can conclude that the 1998 National Housing & Habitat Policy strongly prescribes public private partnership and calls for greater role for private and the NGO sector particularly, to accelerate shelter delivery for the vulnerable sections of the society. More emphasis is given on infrastructure relating to urban and rural settlements which includes roads, electricity, sanitation, water and environment. More defined role of various agencies, UDA, ULBs. Shift from subsidy based to credit cum subsidy based programs, as the new policy recognizes that subsidies are not effective and only add to the burden of the govt. National Housing Policies of 1998 emphasis on energy saving building materials and techniques. New policy deals with the employment issues in the building sector than older.

3.2.1.14 NATIONAL URBAN HOUSING & HABITAT POLICY, 2005

- 1) It gives emphasis on in situ urbanization to reduce pace of rural to urban migration, so focus on supply of land, infrastructure and employment opportunities in rural areas
- 2) Guiding urban and rural settlements so that a planned and balanced growth is achieved with the help of innovative methods such as Provision of Urban Amenities in Rural Areas (PURA) leading to in-situ urbanization
- 3) It gives more emphasis on the development of small and medium size urban centers
- 4) Progressive shift to a demand driven approach and from a subsidy based housing scheme to cost recovery –cum – subsidy schemes for housing through pro active financing policy including micro financing, self help group programs
- 5) Involving disabled, vulnerable sections of society, women and weaker sections in formulation, design and implementation of the housing schemes
- 6) Establishing a Management Information System in the housing sector to strengthen monitoring of building activity in the country
- 7) Various schemes and programs – 2 million housing, VAMBAY, NSDP, SJSRY, JNNURM – BSUP & IHSDP

3.3 NATIONAL URBAN HOUSING & HABITAT POLICY, 2007

Policy talks about the approaches to be made in housing sector by the different initiatives such as,

3.3.1.1 AFFORDABLE HOUSING

- 1) Accelerating the pace of development of housing and related infrastructure.
- 2) Creating adequate housing stock both on rental and ownership basis with special emphasis on EWS.

3.3.1.2 INCREASE FLOW OF FUNDS

- 1) Promoting larger flow of funds from governmental and private sources for fulfilling housing and infrastructure.
- 2) Appropriate monitoring mechanism to Habitat Policy
- 3) Removing legal, financial and administrative barriers for facilitating access to tenure, land and finance.

3.3.1.3 INCREASE SUPPLY OF LAND

- 1) Facilitating accessibility to serviced land and housing with focus on EWS and LIG categories.
- 2) By suitable restructuring for enabling both institutions at the State, Centre levels and private sector.

While the policy fails to deal with the major housing issues such as,

- 1) Rising cost of building materials
- 2) An increasing number of dwelling units required
- 3) Low capacity to pay
- 4) Low accessibility to formal finance
- 5) Less technical (constructional) options available
- 6) Requirement of cost recovery
- 7) Decline in government funds available for housing
- 8) Unorganized sector

These are the policies which plays a key role to improve housing condition at national

level also different housing policies are set up at state level by the government of Maharashtra with respect to land, housing and slums. It made an effort to address the issue of providing affordable housing for the Economically Weaker Section, Low Income Group, Middle Income Group. It also emphasized the need for reforms and liberalisation in the Housing Sector as a major challenge. Instead of the role as Provider, the State Government will increasingly play the role as Facilitator and Enabler. It set an ambitious objective of moving from acute shortage of housing towards an additional housing situation by providing affordable housing. It accepted in the policy that this will be possible only if competition is allowed and encouraged. At the same time, the concerns of the citizens were to be the basis of the entire policy. Maharashtra housing policy states the objectives as follows,

- 1) To facilitate affordable housing in urban and rural areas, create adequate housing stock for Lower Income Group (LIG), Economically Weaker Section (EWS) and shelters for the poorest of the poor on ownership or rental basis.
- 2) To promote sustainable development of urban and rural growth centers and to promote employment opportunities.
- 3) To pursue the target of cities without slums through equitable slum redevelopment and rehabilitation strategy and shelters for the poor.
- 4) To deregulate housing sector and encourage competition and public private partnerships in financing, construction and maintenance of houses for Lower Income Groups (LIG) and Weaker Sections of the society.
- 5) To rationalize development control regulations and streamline approval procedures
- 6) To promote rental housing through amendments in the Rent Control Act and incentives to different options of rental housing for weaker sections.
- 7) To facilitate the redevelopment and renewal of inner city areas and dilapidated buildings through options of land assembly; conserving heritage structures and places of archeological importance
- 8) Encourage technology innovation, training and capacity building of the construction workers to enhance their productivity and improve quality of housing stock.
- 9) To create ring fenced infrastructure fund in cities to fund quality infrastructure

required for housing and economic growth.

10) To conserve ecologically sensitive areas and promote environmentally sustainable cities and townships.

Maharashtra housing policy in return came up with Special township policy to attract foreign direct investment in housing sector (2005).

3.4 STATE HOUSING POLICY

The first ever DRAFT STATE HOUSING POLICY was published on 1st of November, 2006 is finalised in 23 July, 2007. It made an effort to address the issue of providing affordable housing for the Economically Weaker Section, Low Income Group, Middle Income Group. It also emphasized the need for reforms and liberalisation in the Housing Sector as a major challenge. Instead of the role as Provider, the State Government will increasingly play the role as Facilitator and Enabler. Objectives of the housing policy are as follows:

- 1) To facilitate affordable housing in urban and rural areas, create adequate housing stock for Lower Income Group (LIG), Economically Weaker Section (EWS) and shelters for the poorest of the poor on ownership or rental basis.
- 2) To promote sustainable development of urban and rural growth centers and to promote employment opportunities.
- 3) To pursue the target of cities without slums through equitable slum redevelopment and rehabilitation strategy and shelters for the poor.
- 4) To deregulate housing sector and encourage competition and public private partnerships in financing, construction and maintenance of houses for Lower Income Groups (LIG) and Weaker Sections of the society.
- 5) To rationalize development control regulations and streamline approval procedures.
- 6) To promote rental housing through amendments in the Rent Control Act and incentives to different options of rental housing for weaker sections.
- 7) To facilitate the redevelopment and renewal of inner city areas and dilapidated buildings through options of land assembly; conserving heritage structures and places of archeological importance.

- 8) Encourage technology innovation, training and capacity building of the construction workers to enhance their productivity and improve quality of housing stock.
- 9) To create ring fenced infrastructure fund in cities to fund quality infrastructure required for housing and economic growth.
- 10) To conserve ecologically sensitive areas and promote environmentally sustainable cities and townships.

Taking cognizance of the specific problems of metropolitan areas like Mumbai, the objective of the housing policy would be to ensure time bound redevelopment of slums and reconstruction of old and dilapidated buildings on precinct/cluster approach.

3.5 JAWAHARLAL NEHRU NATIONAL URBAN RENEWAL MISSION (JNNURM)

Launched on 3rd December 2005 Jawaharlal Nehru National Urban Renewal Mission (JNNURM) supports 63 cities (7 mega cities, 28 metro cities and 28 capital cities and towns of historical/religious importance one of them is Pune) across the country in terms of perspective plans called City Development Plans (CDPs) for specifying infrastructure gaps relating to water, sanitation, sewerage, drainage and roads on the one hand and deficiencies in housing and basic services on the other hand. On the basis of City Development Plans, the JNNURM seeks to fill up the gaps in infrastructure and deficiencies in housing and basic services through appropriate investments. The Mission approach is reform based with releases being made subject to specified reform agenda being implemented. The Mission is reforms driven, fast track planned development of identified cities with focus on efficiency in urban infrastructure, services delivery mechanism, community participation and accountability of urban local bodies (ULBs) to citizens. JNNURM seeks to encourage private sector participation with the Government providing viability gap funding through the Mission for large projects where the open tendering process shows specific shortage in economic viability. In addition to these 63 cities, urban infrastructure and slums are also being addressed in the remaining Non-Mission cities through the Urban Infrastructure Development Scheme

for Small and Medium Towns (UIDSSMT) and Integrated Housing and Slum Development Programme (IHSDP).

3.5.1 THE BASIC SERVICES FOR THE URBAN POOR (BSUP)

To provide a garland of 7 entitlements/services – security of tenure, affordable housing, water, sanitation, health, education and social security – in low income settlements in the 63 Mission Cities. The Integrated Housing and Slum Development Programme (IHSDP) seek to provide the aforementioned garland of 7 entitlements/services in towns/cities other than Mission cities. PMC is constructing 20,528 t/s. for Urban poor out of each 4,000 t/s. are being constructed insitu.

Mission Period: 7 years (2005-2012)

Government of India Grant: Rs.50, 000 Crores



Mission Preamble:

Under the vision of a Sustainable Slum less City, Pune, has prepared an Integrated Rehabilitation Program for the Slum or the Urban Poor in general as:

Rehabilitation of slums till date on residential and build able lands and even on lands reserved for public purpose; privately owned, through a PPP model under specially constituted Slum Rehabilitation Authority. This model is effectively being used through private developers by offering them an incentive sale Floor Space Index or Transferable Development Rights.

Since under the provisions of SRA in-situ rehabilitation is not allowed for slums on non-build able lands or on ecologically dangerous locations or required for vital public purposes, these are needed to be evicted from such sites and to be rehabilitated elsewhere, PMC has proposed rehabilitation of such slums on lands owned by PMC and reserved for rehab/EWS housing purpose only. After eviction and rehabilitation of such slums, the original lands are deemed to be reserved and to be developed as Public Gardens or Playgrounds.

The above shall cater to the present housing needs for the Urban Poor staying in slums in Pune city, but for the future inflow of migrants who due to unavailability of affordable housing stocks and transit accommodations till earning establishment are erecting new slums, a sustainable reform strategy along with proposals is prepared.

For generation of affordable housing stock, PMC through SRA policy has encouraged private developers to come forward with their private owned build able unencumbered lands to spare for he purpose of rehabilitation along with construction of 25 sq. m. rehabilitation tenements thereon, against Transferable Development Rights for the construction cost and land spared. This shall meet the future need of affordable housing effectively. Well-established developers and construction houses and even industrial houses have shown a positive and constructive approach today for this.

For transit accommodation of migrant in the city, Dormitories or night shelters are proposed by PMC at various entrance corridors of the city. These will provide night shelter or temporary dormitory accommodation for a person seeking earning opportunity in the city and in furtherance migration of his / her family from rural / other areas in the city, with a nominal rate of as low as Rs. 10=00 to 15=00 per night. But strictly restricting the stay not beyond six months.

The SRA is constituted as a specially dedicated authority for the slum rehabilitation program and under its mandate recoding the existing slum areas, allotted rehab tenements, eviction of new slums, hazardous slums, forceful actions and in general keeping a policing vigilance with requisite actions is SRA's obligatory duty.

Approvals under JNNURM:

Under the mission PMC after approval of City Development Plan (CDP) and signing Memorandum of Articles (MOA), Detailed Project Reports for various Slum Rehabilitation Projects were prepared by M/s Omkar Associates.

DPRs were submitted to:

Central Sanctioning & Monitoring Committee CS&MC

(Constituted under the Ministry of Housing & Urban Poor Alleviation) after statutory recommendations / approvals / appraisals from:

State Nodal Agency i.e. Maharashtra Housing and Area Development Authority (MHADA)

State Level Sanctioning Committee (SLSC)

Chaired by Hon. Chief Minister of the State with Hon. Secretary UDD, Housing, Hon. MLAs as members,

and by

Appraising Agency i.e. HUDCO, New Delhi.

A detailed presentation was made before the CS&MC for all projects and upo the same Govt. of India has given approvals to these with grants as under:

Architectural Design:

As per the prevailing provisions of the Slum Act 1971 and Development Control Rules of Local Planning Authority i.e. Slum Rehabilitation Authority for Pune & Pimpri Chinchwad Area, following basic riders are considered for planning and designing rehab projects:

FAR permissible: 2.50

Schemes permissible on reservation lands with 33% land are kept for reservation purpose and rest 67% put to rehab scheme.

Height of building: 36.00 meters

Built up area of rehab tenement: 25 sq. mtrs.

Rehab house components: A multipurpose room (divisible in living and bed area), a kitchen (cooking alcove), a bathroom and a water closet.

Minimum Floor height: 2.75 meters.

Passage / Circulation area: 1.50 meters.

Case studies are conducted Slum Rehabilitation schemes implemented in Mumbai, Pune & in PMC areas for planning & designing aspects.

Aspirations of Slum dwellers staying in slums in PMC area are surveyed through a team of architects, engineers, social workers and through MASHAL, NGO who has surveyed PMC slums.

Aspirations of beneficiaries of previous executed schemes are also surveyed and noted for design evolution.

This exercise is done prior to preparation of DPR and also after approval of DPR for preparation of detailed designs.

The JNNURM guidelines have also recommended the following:

“ The model houses should have a minimum floor area of 25 sq. mtrs. With provision of one multiple purpose room and a bed room plus kitchen and toilet.”

The preliminary design, details and presentations made before the CS&MC for rehab model house, buildings, site layouts with court-yard cluster approach is highly appreciated and thus approved.

Thus, the State & Central Govt. approved design, as per prevailing rules framework of SRA, evolved through previous experience of executed schemes, aspirations of slum dwellers, rehabilitated slum beneficiaries in executed schemes and upon comprehensive detailed analysis of all, detailed design of a rehab house is prepared. For all this exercise and appraisal, colored presentation drawings, plans, elevation, perspective views and proto model of one unit, one building & one cluster layout is prepared.

A study of previous implemented rehab schemes in PMC areas for past 13-14 ears are studied viz. Hadapsar WAMBAY scheme, Rajendranagar SRD, Erandwane Deshpandepuram, Swamipuram Sadashiv Peth, Nana peth patryachi Chal SRD etc. Aspirations of slum dwellers & interviews of occupant rehabilitated beneficiaries are conducted.

The necessary revisions are made in the design upon the physical appreciation by Design & engineering team suggestions received and suggestions by all.

Construction Technology:

The survey has evolved a basic aspiration of rehab scheme by slum dwellers, authorities and in general that

“Construction quality of rehab schemes is always poor,”

“Time taken for commencement and execution of rehab schemes is unpredictable and unbelievable”

“Completion of Rehab schemes is never fixed and generally schemes are not fully completed”

Thus, to regain the faith of slum dwellers and public in general, towards timely and qualitative implementation of schemes, a study was carried for use of mass, speedy and qualitative construction technologies.

Conventional RCC framed structure with Masonry walls, Pre-cast column-beam-slab technology, Dome technology, Monolithic RCC walls & slabs with aluminium formwork technology etc are studied. Site visits of projects executed with these technologies are made by design & engineering teams along with the authorities.

And “Monolithic RCC wall & slab construction with the use of aluminium formwork technology “was evolved to be the most suitable and appropriate for the purpose.

The JNNURM CS&MC has recommended the following:

“Adoption of innovative approaches and adoption of proven and appropriate technologies”

“The model project should essentially involve construction of dwelling units with innovative and cost-effective building materials and disaster resistant construction technologies”

Model House:

“Secretary drew special attention of the Committee to the shortage of land and the need to build multi storeyed building with Ground plus three storeyes. As DPR (by Govt. of Madhya Pradesh) made provision for only Ground plus 2, the State authorities were directed to revise the project proposal accordingly”

“Under BSUP, the cost of dwelling unit should be based on the State schedule of rates since the cost of construction varies from city to city”

In beginning of last century the load bearing vertical walls were constructed to support floors and transmit the loads from floor with superimposed loads to ground. The change in the life style with advent of industrialization the people started migrating to cities and

resulting in overcrowding in the city hubs, which started expanding in horizontal planes. This horizontal expansion of the cities resulted in increase in distance between places of living to place of work. This actually incepted an idea to construct floor one above other in lieu of vertical expansion of the buildings. This resulted in load bearing walls on bottom story to carry more loads & also to transmit them to ground. Also the multistoried buildings were designed to noticeable lateral loads on account of earthquakes and the stresses generated are in direct relation to vertical load of buildings. Also as the walls on lowermost story are to carry the highest vertical and lateral loadings, the thickness of these walls started growing in direct relation to number of stories. Due to more thickness of walls the usable area on ground stories was reduced to unacceptable levels to occupants.

As the saying goes necessity is the mother of invention, the reinforced column beam construction system was developed. In this form the walls on the stories above are of same thickness and they need to carry their own weight only story wise. The loads are transferred by beams to columns (storey wise) and finally columns transfer the loads to the ground with column footings on minimum permissible area which is evaluated from bearing capacity of the foundation strata.

The RCC columns beam construction, which is called as RCC framed structure, which is very popular construction methodology since 1925-30. The in-situ construction generated lot of employment opportunities. The external and internal walls were built in masonry popularly brick masonry, and the plastering is to be done on the walls on both side i.e. internal as well external to achieve the smooth & textured finish. Further to get desired uniform quality and finish, engineers have developed the pre-cast RCC frame segments technology, which have columns, beams, and slabs separately. With the available modern lifting machinery these pre-cast elements could be transferred & placed easily at required construction site even at the particular place from the factory of construction, with better quality control due to centralized factory production & proper curing place.

After studying the effects of lateral forces mainly on account of earthquakes the in-situ joints in pre-cast structures were susceptible, as @ some places the out of plane

moments were the cause for partial of total collapse of the structure, after doing research of such failures, the design of joints was strengthened with internal & external stability modules.

The conventional RCC frame in-situ structures some times misbehaved in resisting the earthquake forces, as the joints between column and beams were more vulnerable. These points transfer forces on accounts of earthquake from beam to column and from column to beams @ such a pace that the kinetic energy generated is very high especially in case of multistoried building frames. The experienced structural engineers introduced the concept of shear walls in multistoried buildings frames, to transfer the same into ground leaving columns free not to accept these forces but to transfer the vertical loads only, to ground.

The shear wall concept is more like a load bearing wall starting from foundation to top of the frame, resisting even out of plane moments generated in entire building frame on account of lateral forces. The concept of shear wall was also used in pre-cast structures primarily for the same purpose.

The load bearing structure philosophy is acceptable for low-rise structure even now. The intensity of lateral forces generated stresses goes up with addition of multiple stories, and as such conventional brick masonry walls and RCC slab structures have their limitations to the total number of stories. The structural engineer thought of producing RCC walls as load-bearing walls with RCC slabs will be the best option from structural stability point of view. In such case the walls will not have to resist the out of plane moments and RCC walls are strong enough to resist the normal in plane moments. The difficulty in using conventional steel shuttering to cast the walls, was that the handling the long shuttering panels, having more self weight is such a cumbersome activity & to overcome these difficulties if the such panels are divided into pieces, they resulted in more vertical and horizontal joints. Which usually spoil the form finish of fresh concrete. The advent of aluminum-alloy formwork was put forth to overcome the self-weight problem. If the aluminum-alloy shuttering for walls is properly designed, the full wall height panel is having optimum weight which one unskilled worker is quite capable to handle. Use of proper aluminum-alloy in fabricating the shuttering results in very good

form finish concrete, thus reducing the cost of rendering or plastering. This the monolithic RCC load bearing walls and slab aluminum-alloy formwork technology was introduced by a Canadian engineer in 1960.

This shuttering system is very simple to assemble and de-assemble, does not require nails, screw and bolts instead only wedges and pins. The dimensional accuracy of architectural dimensions is nearly perfect in number of repetitions & is observed.

The slab shuttering with supporting system in aluminum alloy is designed in such a way that the provisions for de-shuttering of slabs, in RCC codes of various countries including India, were properly adhered to. With optimum wall form panels and slab shuttering with supporting system, thus permit to cast entire story per floor and de-shutter the same in 4-5 days only. ,with beautiful form finish given by aluminum wall form panels the requirement of internal plaster is non-existent and only wall putty, primer was essential before internal painting. The properly designed wall form work leaving opening like doors, window and are designed in such a way that the metal or wooden door and window frame are not required since it has been replaced by in-situ RCC frame elements as monolithic expression of respective walls, thus within 4-5 days of casting the story is ready with elimination of internal plaster, door and window frames such that the flooring work could be commenced since considerable time has been saved by way of eliminating the internal plastering, door-window frames, lofts, lintels etc. The methodology of selection of concrete ingredients, manufacturer and transportation, procuring & placing ensures quality assurance of the end products.

The construction of end cycle i.e. 4-5 days per floor is a symbol of high efficiency & speedy construction. However the initial investment of procuring the aluminum shutters is high but considering the usage by way of number of repetition, it finally results cost effective. The assured serviceability of aluminum shutters are @ 300 repetitions. Usually to achieve these repetition, a period required is about 1200 to 1500 days. Considering the cost to time benefits the period of 700 to 800 days is ideal, which in turn will be with predictable escalation in cost towards material-labor etc. Hence it is pointed out that concrete conventionally manufactured is poured in complex technology aluminum formwork with simplicity in erection of man-hand able wall slab panels.

The notable de-merits of the system are once completed, the internal changes in dwelling units if carried out are difficult to execute and require complex analytical approach towards stability of the structure.

The approach to structural design is based on relevant Indian standard codes for concrete structures and stability of structures.

The other technology used in many countries is tunnel formwork technology. The handling of the tunnel forms requires lifting devices as against aluminum form work technology involving cellular action gives advantage over tunnel form shuttering, where out of plane moments have to be counteracted by increased reinforcement or additional stability system. Aluminum formwork cellular load bearing walls provide the most direct way of transferring loads from upper floor to ground. Vertical & lateral loads are well distributed throughout the walls & foundations also find to be simple. The load bearing walls in both the directions were in plane moments and the stress level @ base is far lower in compression with stress concentrated column beam construction.

Regarding similar projects executed...in Mumbai & Navi Mumbai about 10,000 tenements have already been constructed by "MHADA", MMRDA & CIDCO". About 20,000 tenements have been constructed by "Ahemadabad Urban Development Authority by using the aluminum frame work technology and performed well, as on date.

Regarding Design, execution & monitoring of construction phases...The Project Management Consultant has been deployed for day to day planning & supervision and will maintain the close quality control.

Feedback of users.....Satisfactory.

De-merits has not been noticed as now hence technology could be implemented wherever required.....

Advantages of Technology:

Hand-held aluminium formwork system for forming cast-in-place concrete housing.

The system also controls the scheduling of the other trades involved in the construction;

Steel reinforcement,

Electrical conduiting,

Concreting,

Flooring,

Doors and windows,

Painting and finishing.

Used for over 20 years to construct thousands of housing units in the Middle East and Asia. Countries include: Iraq, Malaysia, Thailand, Singapore, Indonesia, Seychelles, Hong Kong, the Philippines, South Korea, Japan and India.

First project is the Nagari Nivara Parishad housing project in the Goregaon area of Mumbai. 3,600 low cost housing units in four storey buildings. Second project by M.S. Khurana Engineering of Ahmedabad was started in June 2001. 1,400 EWS units in four storey apartment buildings for the Ahmedabad Urban Development Authority (AUDA). Third project in India by Naiknavare and Associates in Pune commenced in March 2002. 660 Two bedroom apartment units in fifteen 11 storey buildings. DDA Housing Project by L&T Ltd. at Dwarka, New Delhi. 864 LIG/MIG Apartments (G+4) CIDCO Housing Project by Simplex Piles Pvt. Ltd at Ghansoli, Navi Mumbai. 3168 LIG Apartments (G +4) Rushabh Apartments by Angarika Investments and Finance Pvt. Ltd at Mumbai MMRDA Housing Project by L&T Ltd., Mankhurd, Mumbai. 6192 units (G + 5) CIDCO Housing Project by L&T , Khargar Mumbai. 1416 units (G + 7) Garden Enclave by Godrej and Boyce Mfg. Co. Ltd., at Vikhroli, Mumbai. 4 Blocks 20 storey apartments DDA housing Projects by L&T Ltd., at Bakkarwala, New Delhi. 1315 units LIG apartments (G+4).

Versatility, Speed, Quality, Durability, Cost are the advantages of technology. Capable of forming any type of structural design. The System is unique in that it forms all of the concrete in a building including; walls, Columns, beams, floor slabs, staircases, balconies, window hoods, storage lofts, No need for bricks, blocks or plastering. Multi-Storey Housing - structures are completed at the rate of four days per floor - regardless of floor size. Thousands of tenements can be completed annually. Precision in fabricating the formwork results in accurate and consistent forming of the concrete. The quality of the concrete finish is the same regardless of whether the system is used for low cost housing or luxury housing. Two issues related to durability;

- durability of the housing units,
- durability of the aluminium formwork.

All concrete (walls, slabs, staircases etc.) are poured monolithically, therefore, there are no construction joints and no problems of leaking joints. Smooth concrete finish means that no plastering is required. The tendency of plastering to break away is well known. All four walls in a room, as well as the floor and ceiling, are cast-in-place reinforced concrete. The result is a rigid reinforced "box" structure which has no joints and is very durable. Formwork is made with an aluminium alloy which has high tensile strength and is also very hard. Aluminium does not rust like steel, therefore, the aluminium formwork can be re-used hundreds of times. Aluminium being light-weight is easy to handle.

Highly reusable formwork, Forms all the concrete in a building, Unique construction cycling, Uses local building materials, Requires unskilled labour only and no cranes, Load bearing wall structural design.

For LIG housing brickwork, internal and external plaster is not required, saving Rs. 125/- per sq.ft. For HIG housing a 5 mm coat of external sand faced plaster may be necessary. Savings on overhead expenses due to speedy construction (4 days per floor). Monolithic crack free structures. Doesn't require timber or plywood for construction activities. Casting of walls and slabs possible simultaneously. Doesn't require skilled labour. Floor slab forms removed without moving props. Earth quake resistance of resulting structures increases manifold. Architectural changes not possible

on the structure (but some walls can be of brick work or openings can be entertained). Due to the tremendous speed of construction, working capital finance needs to be planned in advance.

Paints for HIG schemes needs to be of superior quality. For LIG, form finish is more than sufficient.

3.5.2 OBJECTIVES OF JNNURM

- 1) Focused attention to integrated development of infrastructural services in cities.
- 2) Linking asset creation and asset management in cities through reforms for long-term sustainability.
- 3) Ensuring adequate funds to meet the deficiencies in urban infrastructural services.
- 4) Planned development & dispersal of growth in cities, peri-urban areas, outgrowths & urban corridors.
- 5) Scaling up delivery of civic amenities & provision of utilities with universal access to the urban poor.
- 6) Special focus on urban renewal, i.e. redevelopment of inner (old) cities area to reduce congestion, and
- 7) Provision of basic services & improved housing to urban poor including security of tenure at affordable prices.

3.6 LESSONS FROM THE STUDY

After implementation of several policies and Acts since 2001 to 2009 how much Pune housing scenario has been changed with the implementations of these policies can be analysed by comparing with the existing housing scenario of Pune.

4. HOUSING CHARACTERISTICS

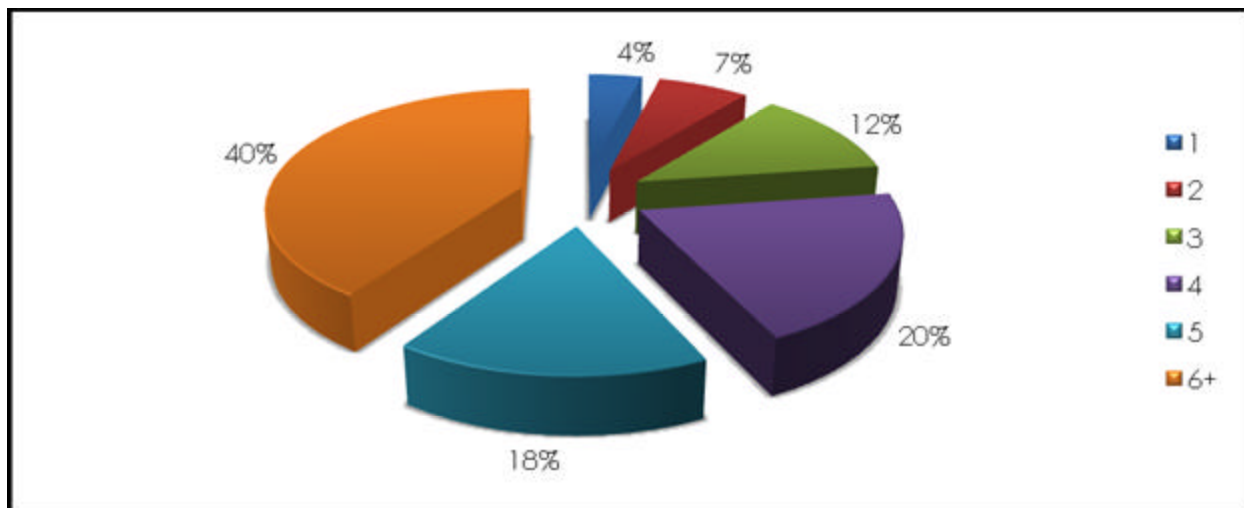
4.1 EXISTING HOUSING SITUATION AT PUNE

Total population for old limit of PMC is 21, 38,243 (2007) which consist of 4,75,165 housing units out of which 40.56% population is living in slums. 1% sample survey has been done to represent the housing scenario at Pune analysis for which is discussed further.

4.1.1.1 HOUSEHOLD SIZE

From analysis is has been observed that maximum household is having size more than 6 members in a households the major reason behind this congested living condition of Pune city is due to high cost of units which resulted into formation of maximum slums into city. It is observed that only 20% households live in a household having 4 members in a family. Average household size observed is **4.74** which are much bigger than Census 2001 household size 4.57.

Figure 4.1: HH size distribution



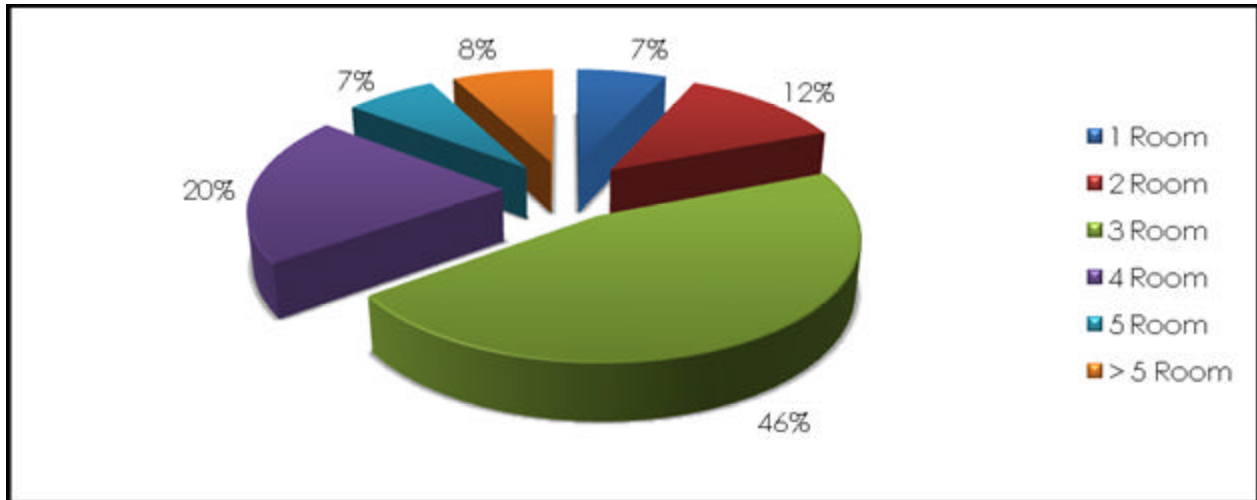
Source: Primary survey by MASHAL, 2009

4.1.1.2 NUMBER OF DWELLING ROOMS

Maximum number of families stays in three room unit which is normally 1BHK unit in Pune. The average area observed in these units is normally 500 sq.ft. as from above

household size analysis it can be stated that maximum population of Pune is residing in a unit having area 500 sq.ft. and household size of 6+ members. Followed by 20 % population is residing in 4 room dwelling unit which is normally a 2 BHK housing unit which is found to be the choice of most of MIG residents of Pune.

Figure 4.2: No. of Dwelling Rooms

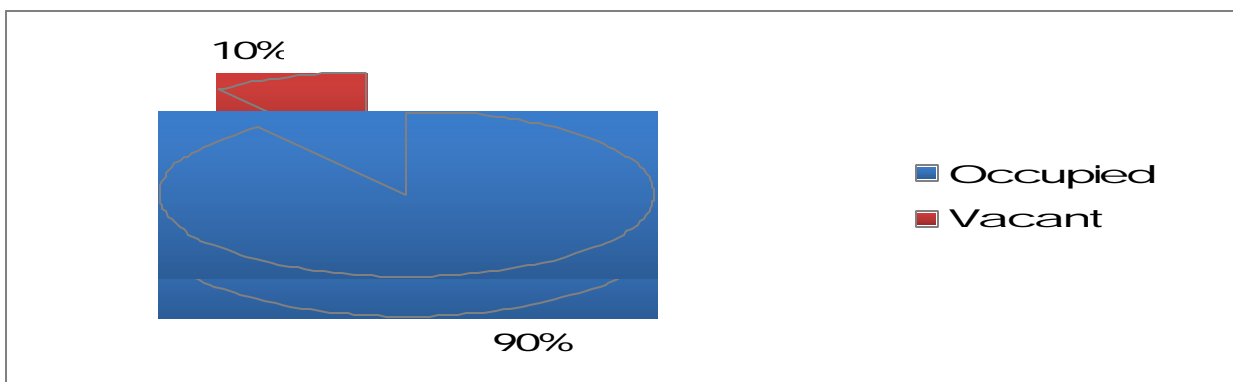


Source: Primary survey by MASHAL, 2009

4.1.1.3 HOUSES DISTRIBUTION BY OCCUPANCY

On one hand Pune city is observing residential housing stock shortage on the other hand there is high vacancy rate of approx. 10%. This is may be the reason of the dilapidated Wada's in old limit of PMC, some apartment units, newly constructed units which are not sold into market due high rates etc.

Figure 4.3: Housing Occupancy

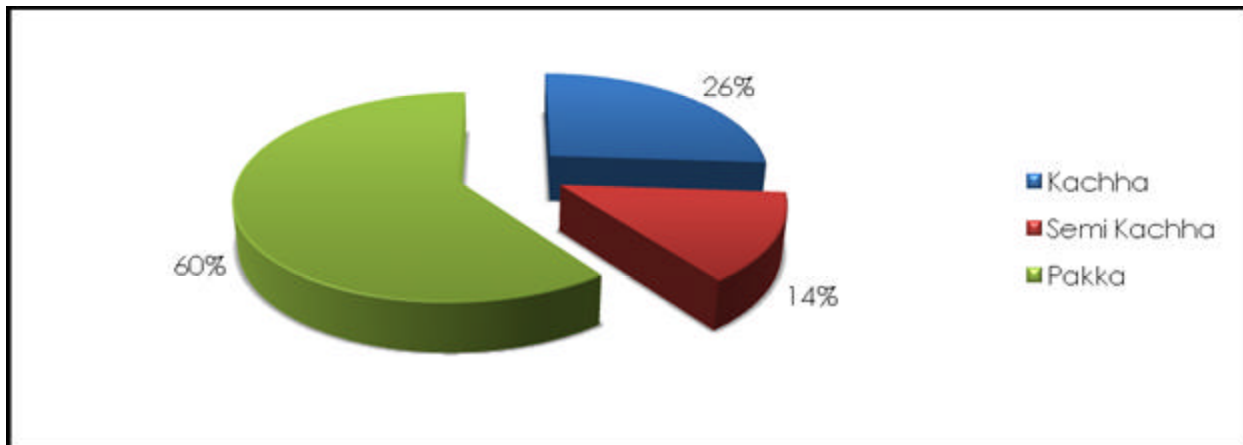


Source: Primary survey by MASHAL, 2009

4.1.1.4 HOUSING CONDITION

As per as type of construction is concerned Pune consist of total 60% of permanent housing unit which fares very bad as it was 87% in 2001 (Census information, followed by 14% of the semi permanent housing units and 26% of Kachha units as a result of increase in slums.

Figure 4.4: Housing Condition

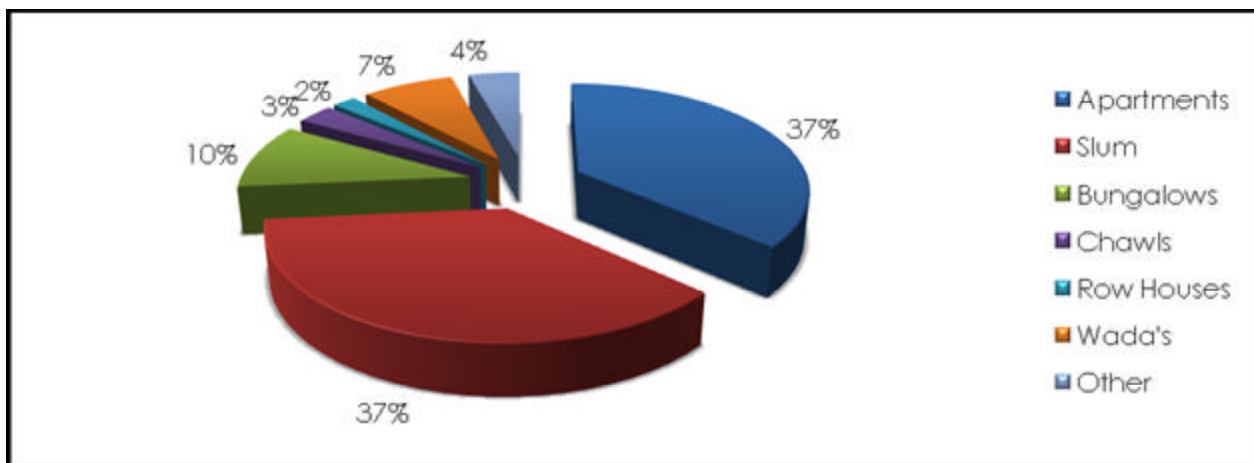


Source: Primary survey by MASHAL, 2009

4.1.1.5 HOUSING TYPOLOGY

Pune consist of maximum number of housing typology as a slum and apartment city consist of 37% of huts in slums and same percentage of apartment units as housing typology is concern followed by Bungalows and Wada. Now a day's percentage of Bungalows and Wada is decreasing as these units are getting redeveloped into apartment units.

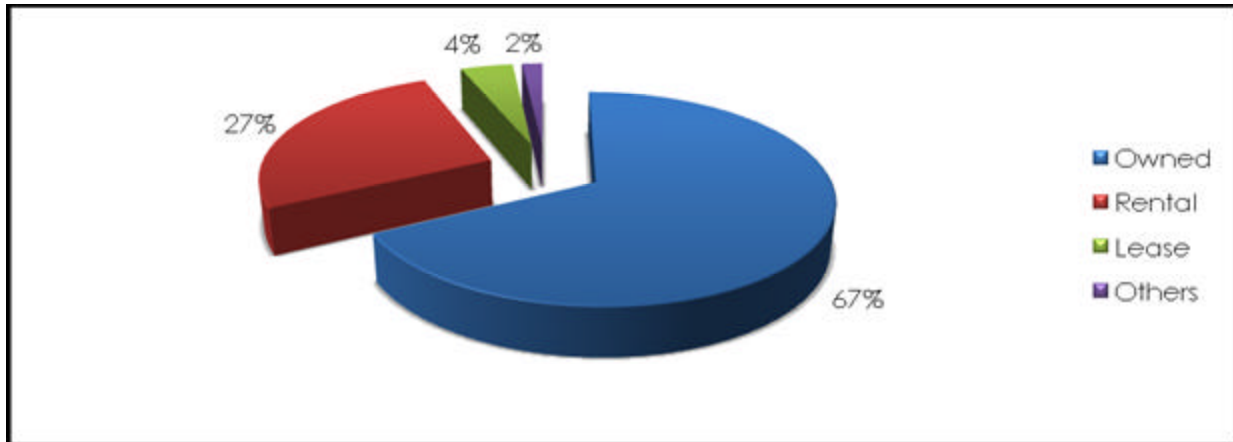
Figure 4.5: housing typology



4.1.1.6 HOUSEHOLD DISTRIBUTION BY TENURE

Of total households Pune residential market is spurring by mainly the end users only as the analysis states that about 67% of households are owned followed by about 27% which are rented. A small share of about 2% is contributed by other i.e. for the Public housing by the government officials.

Figure 4.6: Household distribution by ownership

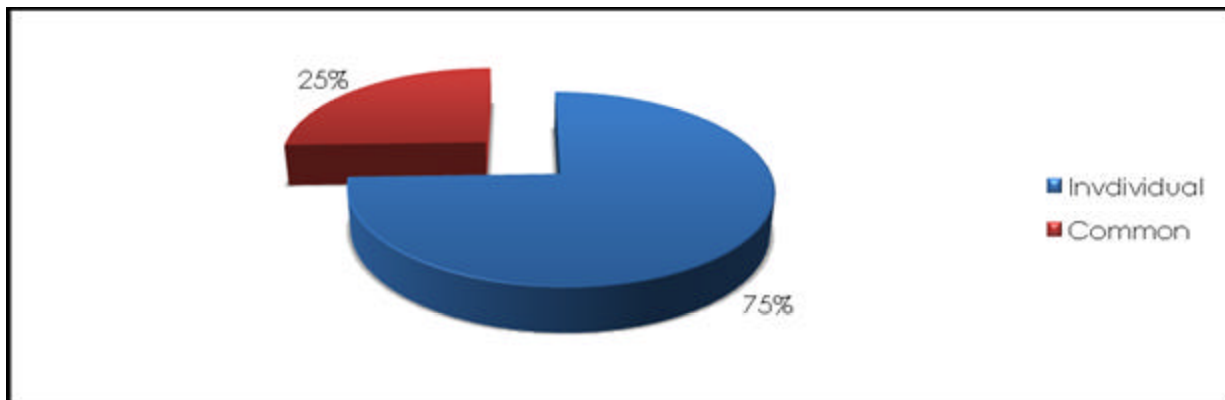


Source: Primary survey by MASHAL, 2009

4.1.1.7 ACCESS TO BASIC SERVICES

Pune has 100% access to water supply facility as 26% of the population has access to water through common water tap and 74% population has individual water supply facility. While in survey for Wada though they have individual connection through one common connection it is considered as individual.

Figure 4.7: Water supply



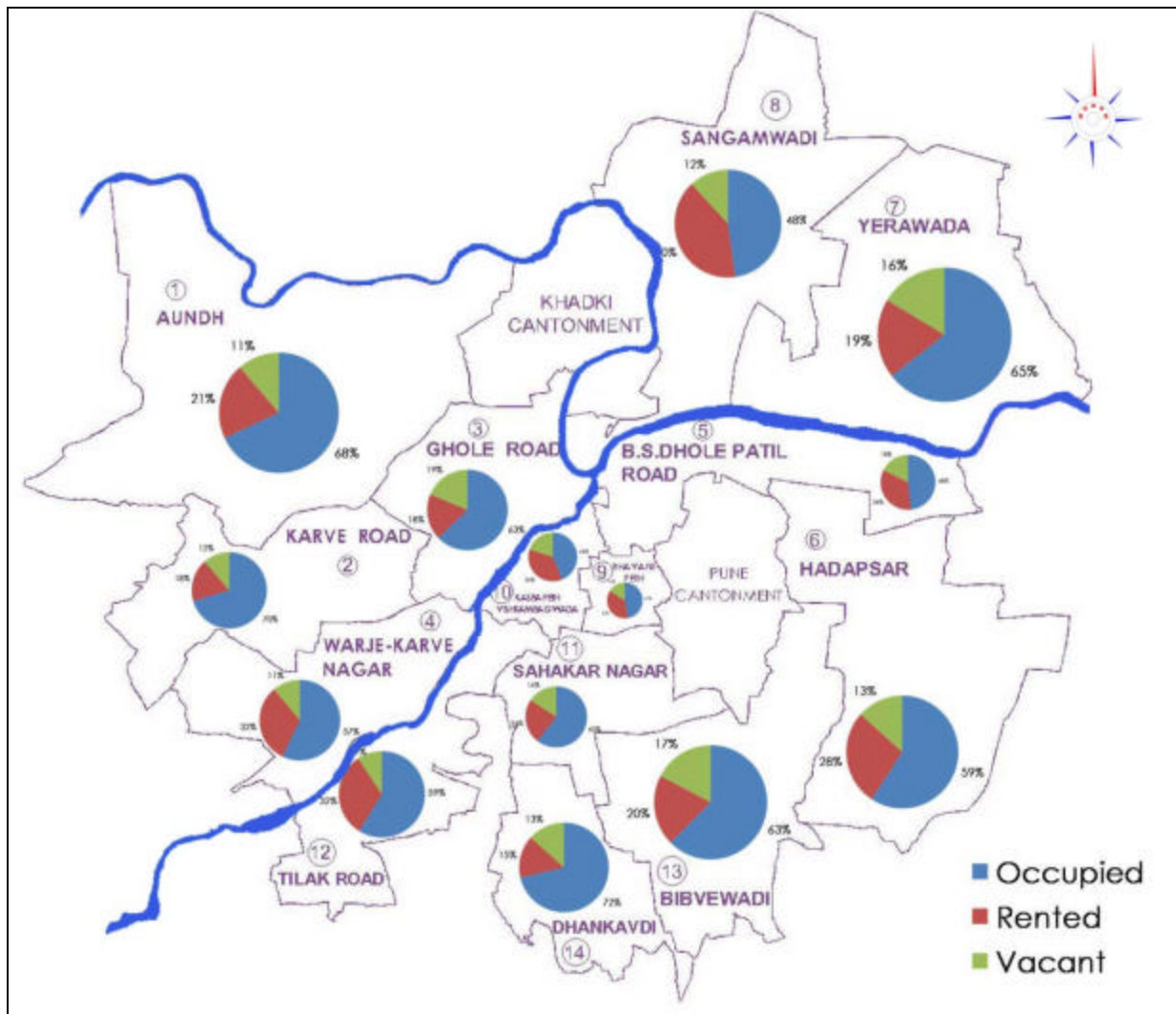
Source: Primary survey by MASHAL, 2009

Apart from this sanitation facility is much worse than compared to the water supply facility at Pune, slum have very weak access to sanitation though common toilet facility they are force to share least number of toilet seats with increasing population in slums.

4.2 BROAD ANALYSIS OF HOUSING TENANCY AT CITY LEVEL

4.2.1 HOUSING DISTRIBUTION BY TENANCY

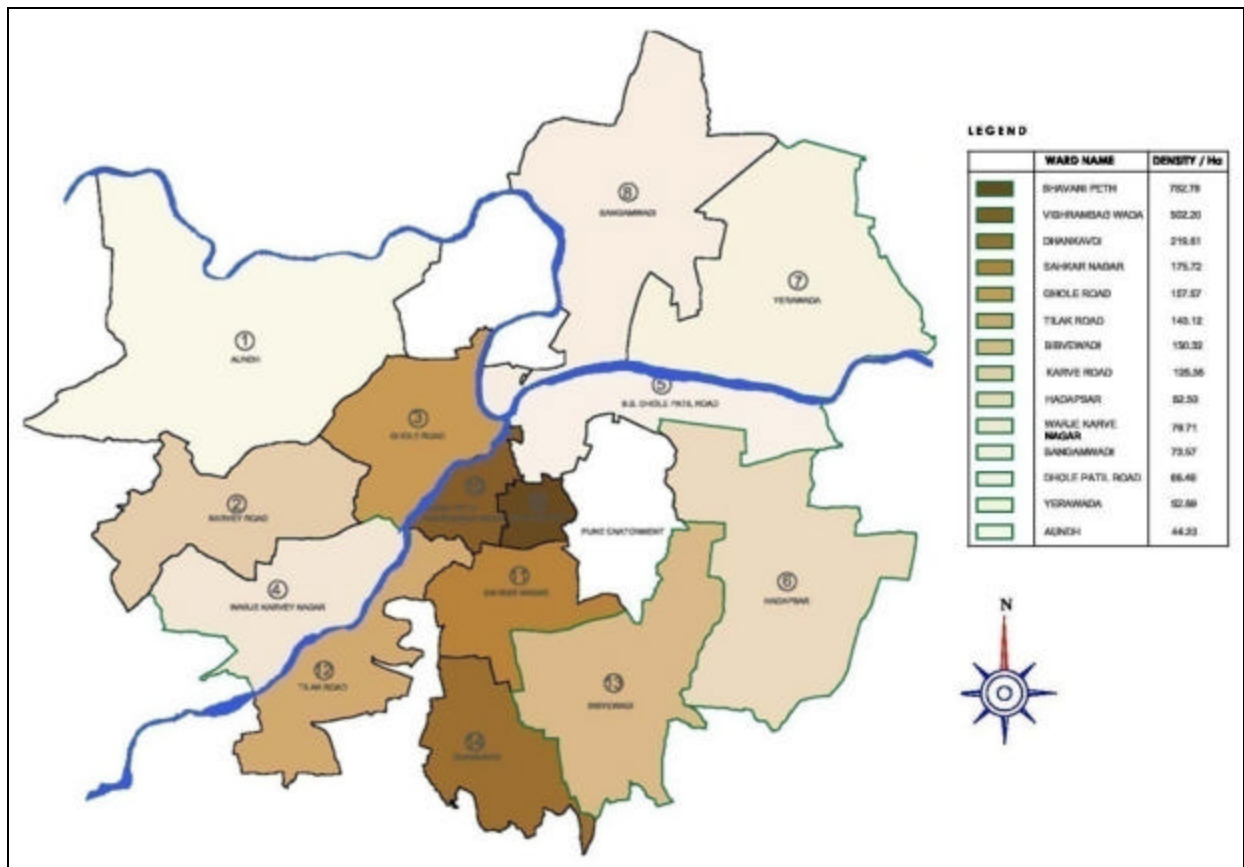
Figure 4.8: Ward wise distribution by tenancy



Source: MASHAL, Pune

4.2.2 WARD WISE DENSITY

Figure 4.9: Ward wise density



Source: MASHAL, Pune

It can be seen that the inner core of the Pune city is denser than that of the outer fringe areas which is because of the CBD of the city and because of the old development within old limit before DCR formulation.

4.2.3 OVERVIEW OF HOUSING DEVELOPMENT IN PMC AREA

In last few decades there has been a phenomenal growth and change in the mode of construction. The overview of physical development in recent years is indicate that there is variation in the total cases for building permission year 2004-05 indicates high number of cases registration while year 2008-09 indicates most less number of building permission as a effect of recession.

Table 4.1: Summary of building permission

Year	Total cases	Tenaments Permission	Residential area in sq.mt.	proff-off	Non residential area in sq.mt.	Shops	Offices
2002-03	3606	71701	4780596	775	993593	6339	2636
2003-04	3996	69482	4325163	998	1113076	6308	3508
2004-05	5184	87821	5683310	1312	1738698	7351	4244
2005-06	4667	76542	5577305	986	1616919	6093	3512
2006-07	3999	85634	3624338	1881	1356969	4667	2777
2007-08	4061	48810	3992109	1044	1560828	1506	3323
2008-09	3391	24739	4693758	280	784593	584	1228
2009-10	4176	35675	5772646	227	719075	2627	528

Source: Building permission department of PMC, 2009

While building completion figures shows less number of cases registered also the tenements completed are less. The table below shows a considerable decrease over the time. The areas under residential use also registered a decrease according to building permission department of PMC.

Table 4.2: Building completion for year 2000-09

Year	Total cases	Tenaments Completed	Residential area in sq.mt.	proff-off	Non residential area in sq.mt.	Shops	Offices
2000-01	714	6849	375797	740	61949	1368	715
2001-02	1137	13092	1303864	1356	101167	1072	757
2002-03	1256	20687	1358379	109	162131	1311	634
2003-04	1121	12557	831951	226	155367	1055	587
2004-05	1299	20071	1179601	307	269161	1835	1266
2005-06	1353	40209	1156116	336	268291	1543	1154
2006-07	1176	13469	994222	353	265446	1301	529
2007-08	827	10844	816500	246	93883	717	296
2008-09	83	588	37084	22	15095	105	147

Source: Building permission department of PMC, 2009

4.2.4 IT EMPLOYMENT AT PUNE

The information technology industry has made the largest contribution to the changing face of the Pune, and not just through their swanky steel and glass offices structures. The city is considered a leading IT destination and accounts for significant annual software export. Over past few years some of the world's largest names in IT business have set up operation here Pune city is previously known as Industrial destination now also developing as IT/ITES destination after Bangalore. Major automobile companies are Bajaj Auto, Kinetic Engineering, Force Motors (former Bajaj Tempo), Tata Motors & Daimler Chrysler (assembly line for Mercedes Benz). Major Software companies are Infosys, Wipro, TCS, Satyam, Tata Technologies Ltd., Patni Computer Services, Kanbay Software, Siemens, I-Flex, Cognizant, KPIT Cummins etc. Top BPO firms are Convergys, WNS, Progeon, EXL & Mphasis. Pune is called as 'Oxford of east' because number of educational institutes. Prominent educational institutes – ILS Law college, Pune Institute of Engg. & Tech., SNDT Women's University, Bharati Vidyapeeth, Nicmar and Symbiosis. Some major companies are Phillips India, Bajaj Auto, Kirloskar Cummins, Kirloskar Filters, Kalyani Sharp, Mahindra And Mahindra, Hindustan Antibiotics, Tata Electric And Locomotive Company, Mercedes Benz India Ltd, Kirloskar Oil Engines, Indian Card Clothing Alfa Laval, SKF Bearings.

4.2.4.1 ECONOMIC BASE OF PUNE

Today, the 4 business segments that dominate Pune are auto, auto components, agro and food processing, IT and education⁶. The information technology and Bio-Technology segments have emerged as the new drivers of Pune economy. The IT/ITES sector has grown from Rs. 250 crores to over Rs. 6500 crores in the last 8 years. The IT sector is also emerging as a huge employer, with total employee strength of nearly 4,00,000 people working with it, from which around 40,000 have been added in 2006-07. With around 600 It company operating in it already.

Pune exports software services worth nearly \$3.49 billion, accounting single-handedly for 10% of national software exports. Pune has the distinction of hosting one of the first Software Technology Parks in the country. The development of IT Park at Hinjewadi got

⁶ MCCIA PUNE

a humungous response from IT companies in India and abroad. Today, the Hinjewadi skyline flashes top IT banners like Infosys Technologies Ltd., Wipro Infotech, Tata Technologies, KPIT Cummins, Geometric Software Solutions Co. Ltd., Mahindra British Telecom Ltd, and many others. There is also a lot of interest in establishing IITES Special Economic Zones in and around Pune. Of the 21 SEZ's notified so far in Maharashtra, 10 are in Pune. Of these, 8 are in IITES segment alone.

4.2.4.2 PUNE IT/ITES GROWTH

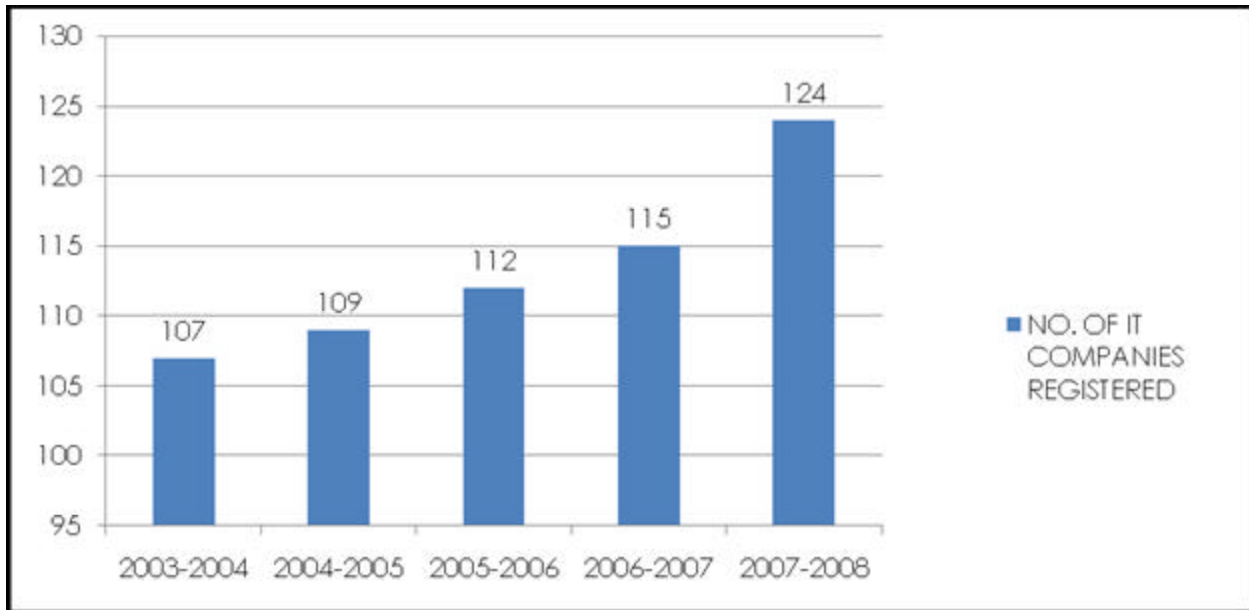
IT firms have emerged as major consumers of office space in cities like Bangalore, Hyderabad, Cochin, Chennai, Coimbatore, Gurgaon and Pune. Employees at these firms have been pushing demand for residential properties, triggering off a virtual boom in the real estate sector. Pune, the engineering and automobile hub of western India - lying about 160-km southeast of Mumbai - is emerging as a major IT centre, with sprawling software parks coming up all over the city and in the suburbs. According to the Software Technology Parks of India (STPI), software exports from Pune increased by 48 per cent, touching the \$2 billion 3-mark, even surpassing Mumbai's exports. In terms of exports growth, Pune now ranks next only to Hyderabad - which saw exports soar by 51 per cent last year.

Several private developers are establishing IT parks in and around Pune. Over a hundred companies - including over two-dozen multinationals - have registered with the STPI, seeking space for their facilities. Most of these are involved in research and development, engineering services and embedded technology-related work. The biggest IT park in Pune is the state government-promoted Rajiv Gandhi Infotech Park in Hinjewadi, which is witnessing spectacular growth. Currently spread over 330 hectares, it is likely to be expanded to a thousand hectares in a few years. But private developers are also promoting a series of parks in areas like Kharadi, Magarpatta, and Kalyani Nagar.

Rents in Pune are competitive when compared to cities like Bangalore and Mumbai. They range from a low of INR 25 per sq ft per month, to about 70 per sq.ft. per month, which compares well with the prevailing rates in Bangalore's prime central business district, but are higher than those in the suburbs like Electronic City, Whitefield, Outer

Ring Road. The IT industry itself has a phenomenal appetite for office and residential space. IT sector employees, who are paid relatively high salaries, are driving the mortgage business. Pune have gained significantly because of the boom in the IT sector. Property prices are not as high as in Mumbai or Bangalore, though the quality of life is much better - with less of traffic congestion, better homes, clubs, and social and leisure facilities. Pune offers several advantages to the IT and ITES (IT Enabled Services) sectors, in terms of the availability of a large number of young professionals. They include Kumar Builders - which has also taken up several major IT parks - Vascon Engineers, Gera Developers, Kolte-Patil Developers, Rohan Builders and the Paranjape group.

Table 4.3: Map showing number of IT / ITES companies registered in Pune



Source: MCCIA, Pune

4.2.4.3 EMPLOYEE STRENGTH OF IT EMPLOYEES IN PUNE

With increasing number of companies are registered in Pune number of employees is also increasing with increase in number of companies. This is leading to increase in migration to the city. Total IT companies 80% of the companies are small companies and the employment strength in these companies is less than 100 employees. 12% of the IT companies registered are having employment strength in between 100 employees to 500 employees working in it. And only 8% registered IT companies are

having employment more than 1000 employees⁷. After calculation of number of IT companies registered in Pune and employment distribution of companies the employee strength of IT employees in Pune comes around 2, 00,000 lacks.

As per the estimates of NASSCOM, about 23 percent of the workers (2.25 lakh in absolute numbers) in Pune are working in the IT sector. It is about one-tenth of the IT-workforce at national level.⁸

During last seven years, the flat prices have nearly trebled. During 2000-01, it was Rs. 2500 per sq. ft. in central Pune. In 2008, it was 7500 per sq. ft. IT boom is mainly responsible. Builders' organization has decided to increase the flat prices by 50-400 rupees per sq. ft. currently the rate is 2500 – 5000 per sq. ft. They argue that because of non-implementation of the Development Plan and the rising prices of building materials, price-hike is unavoidable.

It is not just the real estate prices in Pune that refuse to go down. The city is reaching for the sky as far as industrial rentals are concerned. Pune recorded the second highest growth rate after Mumbai. The increase during last year is 50 %.⁹

4.3 LESSONS FROM STUDY

- 1) For different types of migrants as migrants with family, single migrants and floating population increase in rental housing stock can be achieved by the government interventions like land reservations for rental housing or social housing.
- 2) Mandatory for the employer to provide housing
- 3) Need of rental housing policy

⁷ Pune's IT directory 2005

⁸ Pune Demographic Report, Gokhale Institute

⁹ Pune Demographic Report, Gokhale Institute

5. SLUM

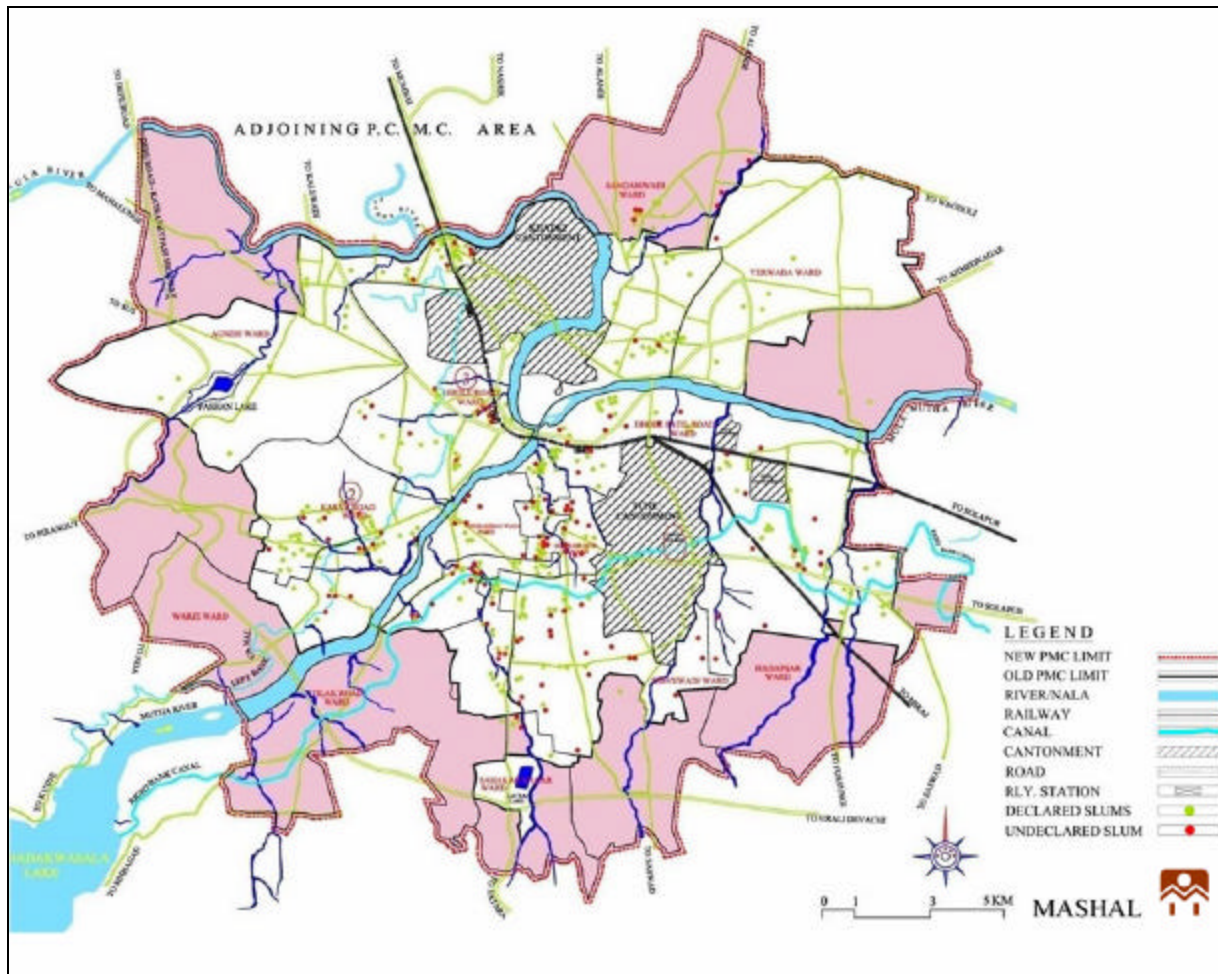
In last three decades the population of the city grew from 8.56 lakh to over 30 lakhs. The housing needs of the city also grew proportionately. Not all the housing need can be satisfied with formal housing market. Rapid Urbanization was due to 'pull factors' of the employment opportunity created in the city and 'push factor due to lack of the same in the rural Maharashtra and from the other parts of the country. Most of the immigrated families who could not create 'demand' for formal housing market satisfied there 'need' by occupying available vacant lands and solved their housing problem by creating slums.

Figure 5.1: Slums at Parvati



Slums are solutions found by urban poor for satisfying their housing needs. Urbanization and slums in Pune is going hand in hand. In PUNE bigger the growth, higher is the proportion of people living in slums. This situation is mainly due to the fact that urbanization in Pune leads to mass migration of rural poor whose skills are low and they are not in position to create housing demand for formal housing in the given market. Timely introduction of appropriate policies could have curtailed the growth of slums.

Figure 5.2: Location of declared and undeclared slums at Pune



Source: MASHAL, Pune

5.1 WHAT IS SLUM?

As per the census of 2001, a slum is defined as, 'a compact area of at least 300 people in poorly built congested tenements surrounded by unhygienic environment, usually with inadequate infrastructure and lacking proper drinking water and sanitary facilities'.

Under the Maharashtra slum improvement and clearance act 1971, a slum is loosely defined as a congested, unhygienic area or buildings that are public hazardous. The act declares the Pune municipal corporation (PMC) as the administrative authority to implement projects under the Act, mainly the provision of basic services in slums. In order to provide these improvements, the PMC 'declares' a number of areas as slum,

which they think adhere most to the definition of the slum since the Act came into existing.

When a settlement is recognized by the local municipality as one where living conditions are below a specified standard, it is 'declared' under the Maharashtra Slum Improvement Act (1971) as 'slum dwelling'.

5.2 EVALUATION AND CAUSES OF GROWTH OF SLUMS

It is generally understood well that the primary cause of slum growth is the urban poverty and unaffordable pricing of house costs. However there are several actions that have to emerge through the actions of the Local & State Govt. Inabilities Of the Local Authorities to peruse sound land development policies such as ensuring adequate supply of developed land at affordable to enabling the generation of sufficient housing stock, to ensure land zoning and performance standards to facilitate S R Projects and to ensure enforcements of development control rules, proliferates the Slum sprawl.

Table 5.1: Growth of total population and slum population in PMC area

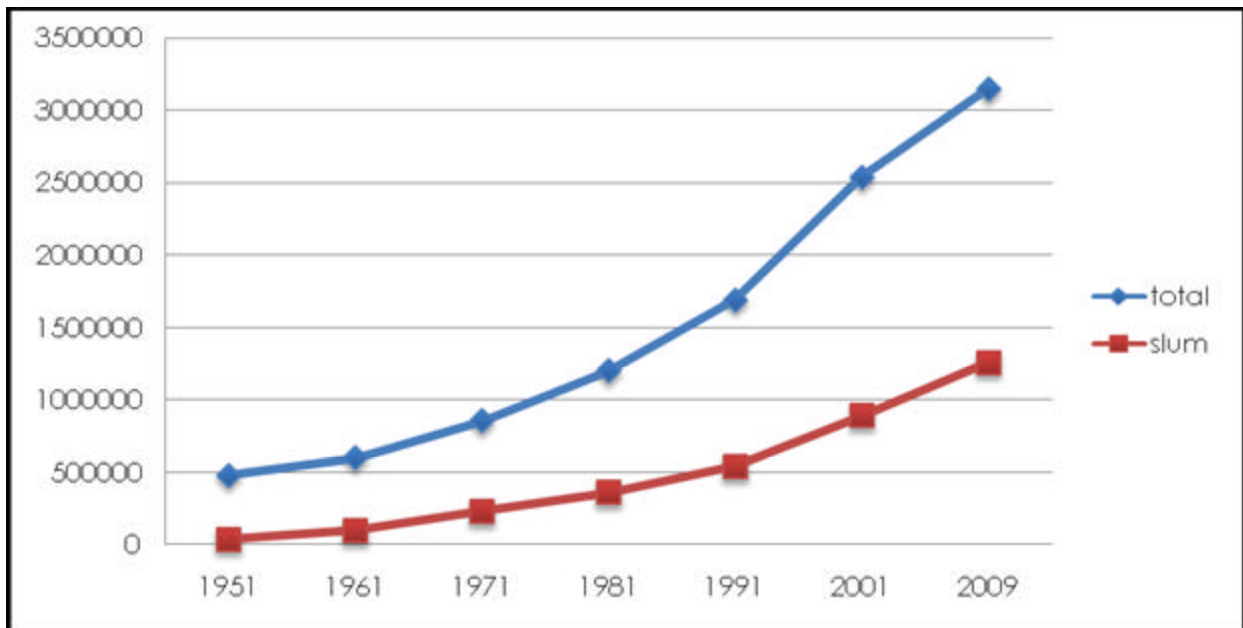
SR. NO.	YEAR	TOTAL POPULATION	SLUM POPULATION	% OF SLUM POPULATION TO TOTAL POPULATION
1	1921	1,33,000	NA	NA
2	1931	1,62,000	NA	NA
3	1941	2,38,000	NA	NA
4	1951	4,81,000	38,500	8.00
5	1961	6,06,777	92,101	15.18
6	1971	8,56,105	2,39,701	28.00
7	1981	12,03,363	3,77,000	31.33
8	1991	15,66,651	5,69,000	36.32
9	2001	25,38,473	1,025,000	40.38

Source: Census of India and ESR 2004-05

It is observed that 40.38 percent population of the total population is residing in slum settlements. Over the years there has been considerable growth in slum population as

evident in above table. The very high growth during the 1968-76 period is probably due to the rural conditions when Maharashtra State faced severe droughts in 1966-67 and in 1972-73. It is likely that the draught in rural areas forced migrants to Pune in search of the only means of existence. With the growth trends it is evident that almost half of Pune's population will be in slums over the next 10 years, unless the PMC acts fast as a facilitator by ensuring adequate supply of developed land, zoning and reservations.

Figure 5.3: Slum population against total population



Source: MASHAL, Pune

5.3 DECLARATION OF SLUMS

If a slum has been declared (& therefore receives basic services), its existence is considered to be officially recognised by the local government. Undeclared slums, regardless of their conditions, are not considered eligible for basic service provision. This approach is problematic for a number of reasons. Most obviously, undeclared slums suffer from an extremely degraded local environment due to lack of service provision. In declared slums, urban growth complicates the issue. Over the years, a slum is likely to grow physically around the original declared portion of slum.

However, the declared boundaries are not updated, so there is no service provision in the newer sections with the result that there is considerable pressure on the service

provision in the newer sections adversely affecting the quality of existing services in the declared section. According to the local municipality, slums located on public land should not be declared in order to receive basic service provision. In practice, services are only provided to declared slums, so many slums located on public land remained undeclared and unreserved.

Table 5.2: Details of declared and undeclared slums, PMC

Year	Declared Slum	Population of declared Slum	No. of Undeclared slum	Population of undeclared slum	No. of Total slum in Pune city	Total slum Population	Percentage of Slum population
1990	226	4,73,438	87	1,27,112	213	5,40,550	35.98%
1991	272	4,28,672	87	1,40,328	359	5,69,000	36.47%
1992	272	4,47,122	87	1,50,328	359	5,97,450	37.34%
1993	288	4,53,888	97	1,73,412	385	6,27,300	38.25%
1994	295	4,75,857	100	1,82,828	395	6,58,685	38.74%
1995	307	4,86,723	127	2,04,891	444	6,91,615	39.74%
1996	308	4,93,723	136	2,06,277	444	7,00,000	39.32%
1997	326	N. A.	133	N. A.	459	7,25,000	30.60%
1998	321	N. A.	N. A.	N. A.	N. A.	N. A.	N. A.
1999	321	N. A.	N. A.	N. A.	N. A.	N. A.	N. A.
2000	337	N. A.	166	N. A.	503	N. A.	N. A.
2001	353	N.A.	150	N.A.	503	1,025,000	40.38%
2002	353	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
2003	353	7,75,000	150	3,50,000	503	1,125,000	40.42%
2004	353	N.A	150	N.A	503	N.A.	N.A.
2009	353	N.A	211	N.A	564	1,259,216	40.56%

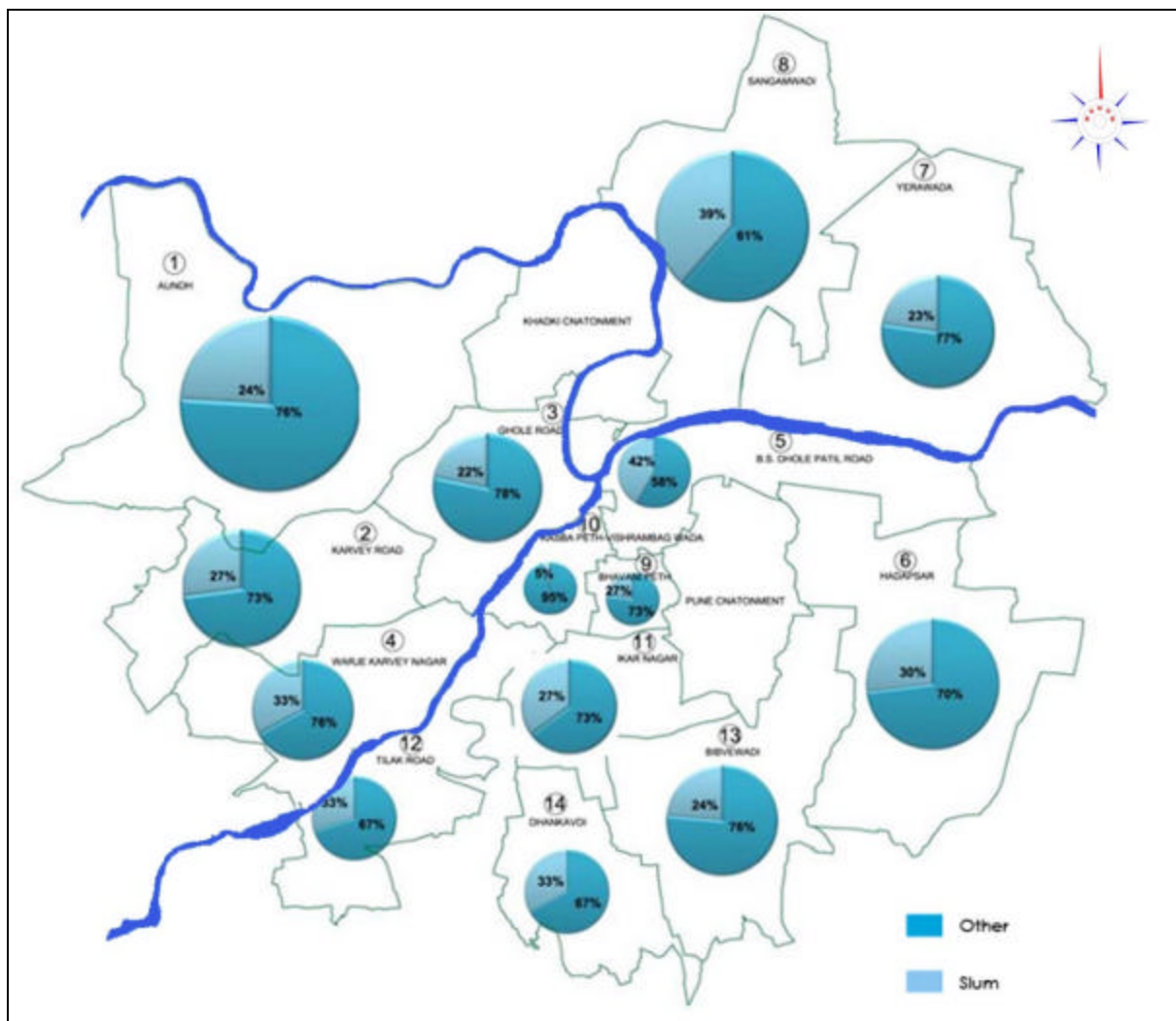
Source: Census of India, ESR 2004-05 and MASHAL, 2009

From analysis it is observed that out of the total slums 564 slums 548 are in old limit of PMC and of the total declared 353 slums, 343 are located in old limit of PMC. Out of total 548 slums 205 slums are not declared in old PMC.

5.4 WARD WISE SLUM CHARACTERISTICS

The number of slums in each ward varies depending upon many factors like employment opportunities, vacant land etc. At present the Dhole Patil Road ward shows the maximum percentage of slum population i.e. 42% followed by Sangamwadi i.e. 39%. The least number of slums populations is found in the Warje and the Vishrambag wada wards.

Figure 5.4: Ward wise slum numbers and slum areas

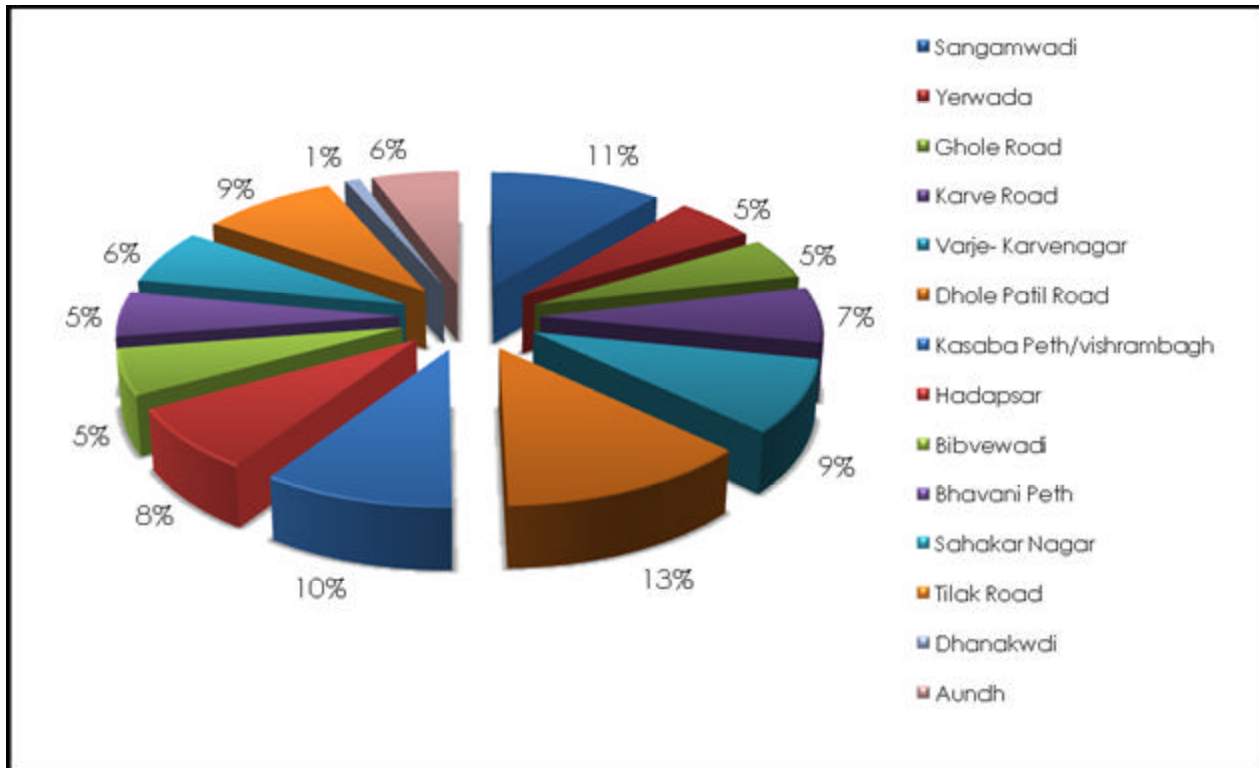


Source: MASHAL, 2009

The total area occupied by the slums in Pune is approx 660.63 hectares. Tilak Road ward and Karve Road have maximum number of declared slum i.e. about 13% and

12% respectively. Yerwada has the highest slum area amongst all the wards, i.e. 156.85 hectares.

Figure 5.5: Ward wise slum population



Source: MASHAL, 2009

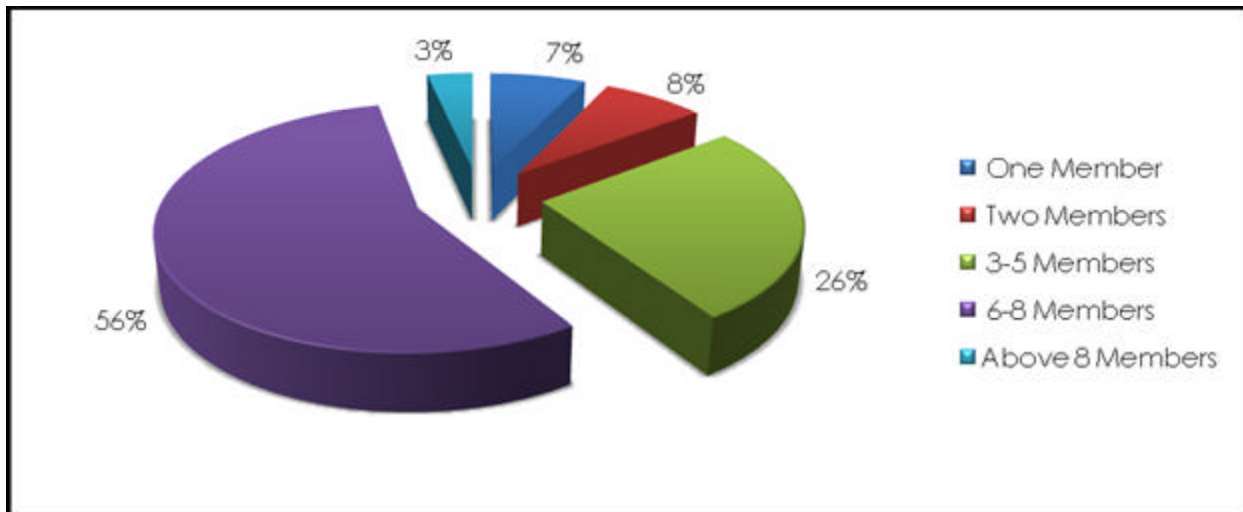
5.4.1 EXISTING HOUSING SITUATION IN SLUMS OF PUNE

Total population for old limit of PMC is 21, 38,243 (2007) out of which 40.56% population is living in slums. 1% sample survey has been done to represent the housing scenario of slums at Pune analysis for which is discussed further.

5.4.1.1 HOUSEHOLD SIZE

From analysis it has been observed that household size is much bigger in slum of Pune as compared to the Census 2001 information. Maximum household size observed is between 6-8 members in about 56% households of the slum followed by 3-5 members which is 26%. Average household size observed in slums is **5.4** which is larger than Census household size 4.57 in 2001.

Figure 5.6: HH size distribution

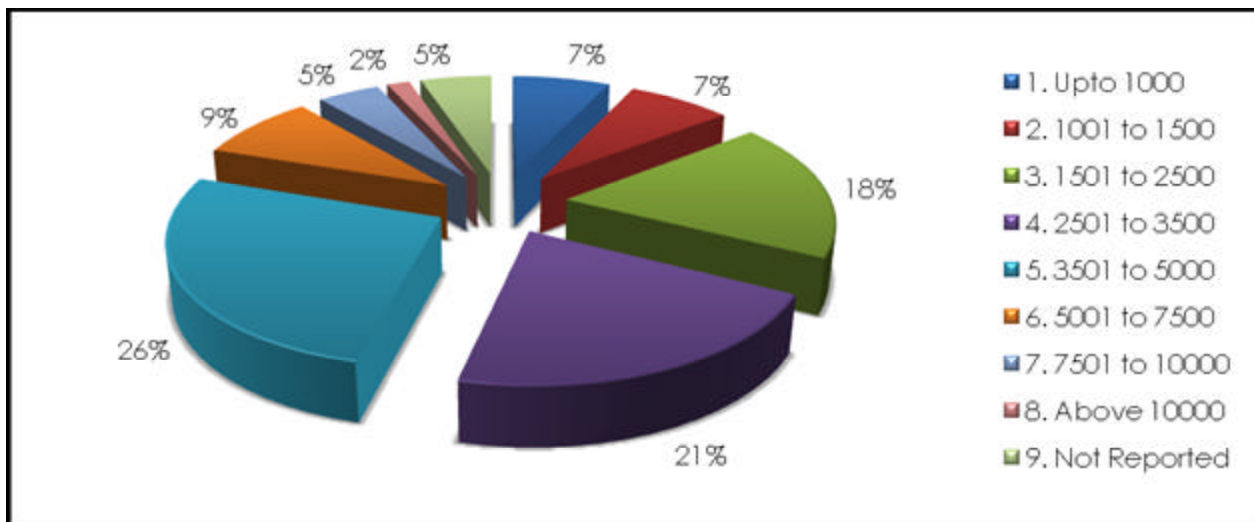


Source: Primary survey by MASHAL, 2009

5.4.1.2 AVERAGE MONTHLY INCOME

Maximum percentage of household monthly income of slums ranges from INR 1500 to 5000 and is around INR 4275 with average annual income below INR 1,00,000 i.e. below poverty level. Due to such low income these people cannot even afford to pay rent of a 1BHK HH in formal market of Pune and buying their own house in formal market is always a dream resulting in unauthorized slum formation in city.

Figure 5.7: Monthly income distribution

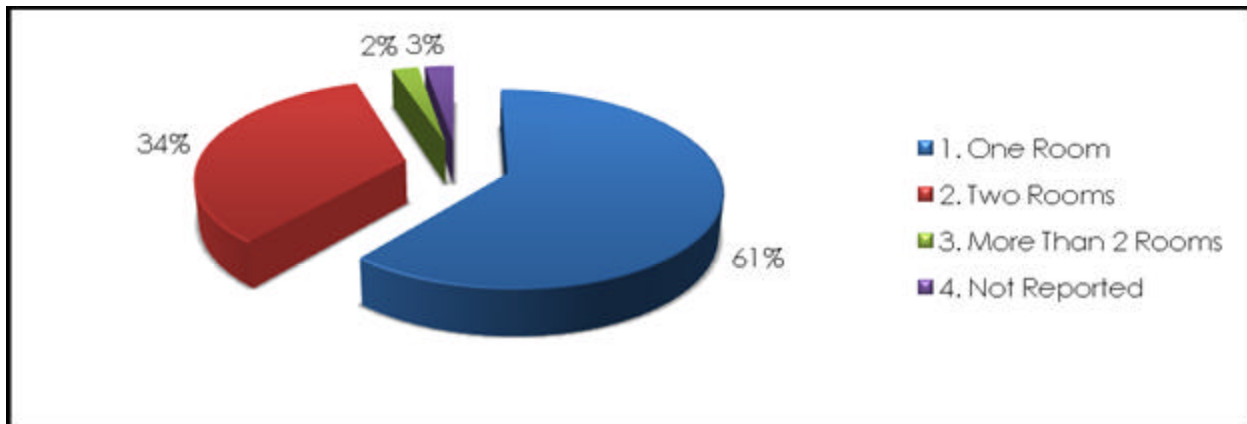


Source: Primary survey by MASHAL, 2009

5.4.1.3 NUMBER OF DWELLING ROOMS

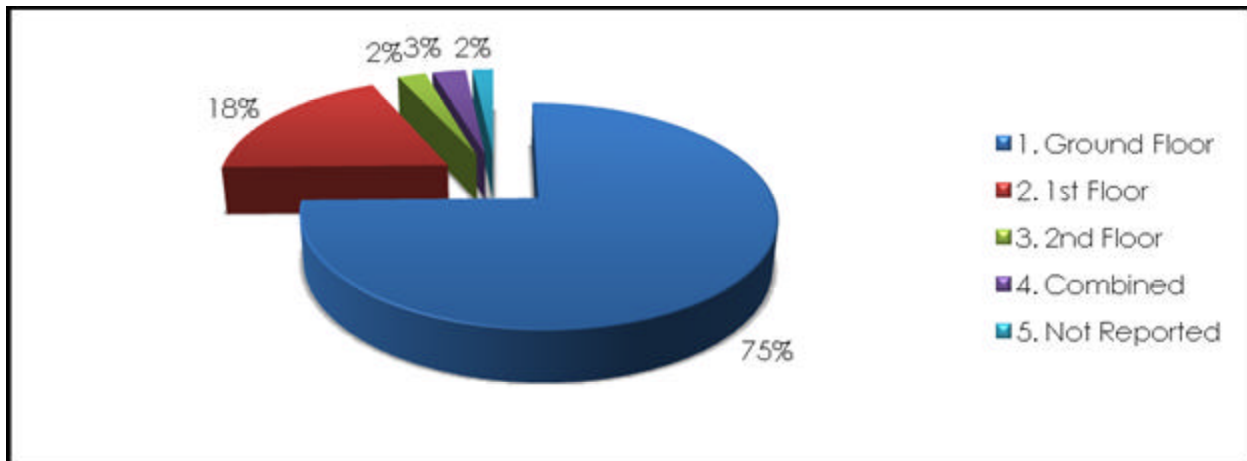
Maximum numbers of families stay in single room in most of the slums with very unhealthy living conditions. Majority settlements are having only ground floor structures with very high density development.

Figure 5.8: No. of Dwelling Rooms



Source: Primary survey by MASHAL, 2009

Figure 5.9: Number of Floors



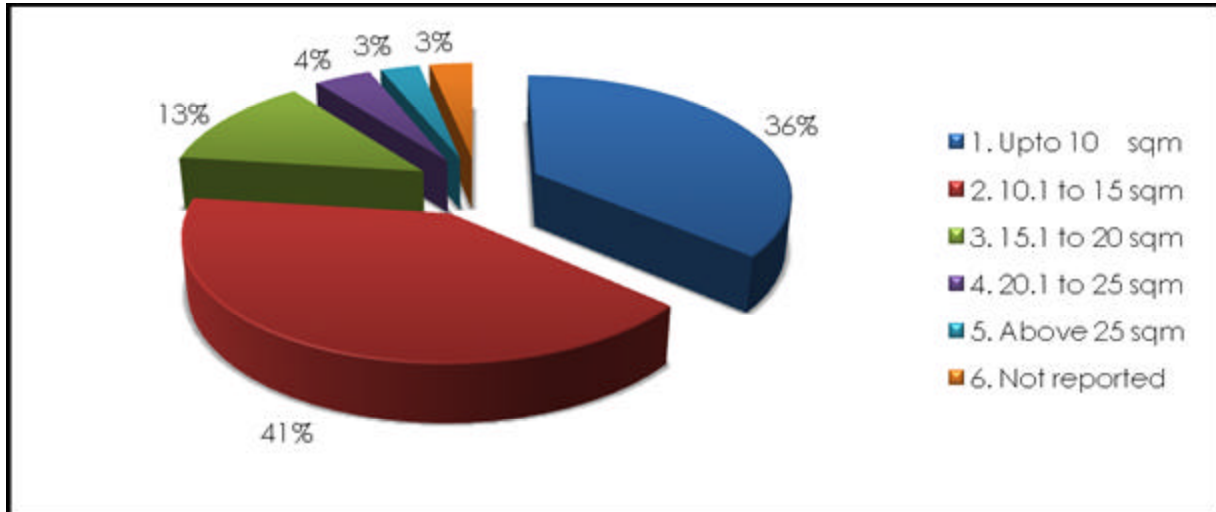
Source: Primary survey by MASHAL, 2009

5.4.1.4 CARPET AREA

Maximum numbers of huts in slums of Pune are observed to be having 10 to 15 sq.mt. followed by huts having area below 10 sq.mt. area per unit, followed by huts having area below 10 sq.mt. resulting in high density settlement. Average carpet area observed is 14.66 sq.mt. Average household size in slums is 5.4 and average carpet area

per person is 2.76 sq.mt. which is inadequate area for a healthy living condition of a family.

Figure 5.10: Area occupied by huts

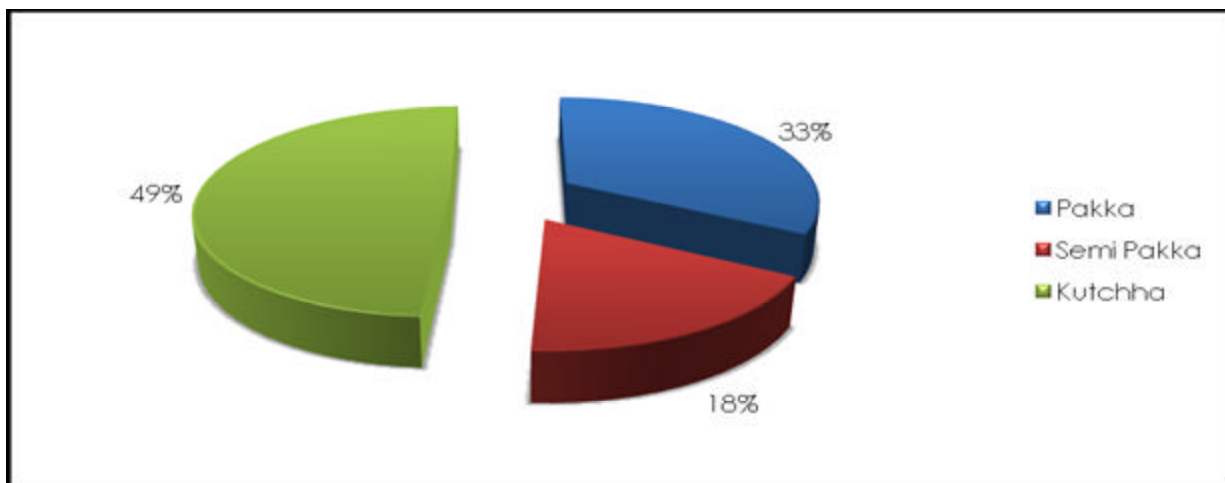


Source: Primary survey by MASHAL, 2009

5.4.1.5 HOUSING CONDITION

Most of the houses are in kutchha category having GI sheets as basic building material. Temporary building materials like mud, bamboo, iron sheets, jute mats are used for the walls. In semi pucca structures brick wall is used and roofs are generally made of tile or iron sheets.

Figure 5.11: Household distribution by type of construction



Source: Primary survey by MASHAL, 2009

5.4.1.6 ACCESS TO BASIC SERVICES

Most of the slum households either have direct access to services or access them through community or common facilities. 58 % households are having individual water supply and rest 42 % are having access to common water supply facilities. Mostly settlements are having common toilet blocks.

5.4.2 CLASSIFICATION & SPATIAL DISTRIBUTION OF SLUMS

Slums in Pune can be classified under 3 different categories depending upon their location

5.4.2.1 LOCATED IN AND AROUND THE CITY CORE

There are several small slums in the old city, particularly in the old wards like Nana, Ganesh, Bhavani, etc. This pattern of poor people settlement began over two centuries ago. At the end of the 18th century, there were two centers of population in Nana and Bhavani wards. There is a chain of slum settlements on both the sides of the Nagzari, which is now a large open drain


5.4.2.2 LOCATED ON THE PERIPHERY OF THE CITY CORE

The settlement sited around the core of the of the old city comprises of the settlements near the railway station, south eastern part of Bhavani ward, row of settlements near Parvati hill, in Erandawana along the Mutha river and those in Shivaji Nagar. Most of these are newly developed as compared to the inner city slums. These are mainly formed due to migrants coming from south India which are engaged in activities like loading/unloading goods

5.4.2.3 LOCATED IN THE SUBURBS OF THE CITY

These are the slum settlements formed due to the industrial areas of Hadapsar and Kirkee as well as those in Yerwada and the settlement of brick Kiln /workers in Pashan. A rapid growth of slum settlements observed in Yerwada, due to availability of large chunk of vacant land owned by state government.

Table 5.3: Distribution of slum on Government land and Ownership

Ad. Zone	Ad. Ward No.	Ad. Ward Name	LAND OWNERSHIPWISE STATUS OF SLUMS POCKETS IN PMC									Total Slum Pockets In The Ward	% Of Slum Pockets In The Ward To Total Slum Pockets	Ward w/ slum areas (sq.km)
			PMC	MHADA	State Govt	CENTRAL GOVT.		PMC+ State Govt	Private + State Govt	Total Of Non-Private Slums	Private Slum Pocket			
						Railway	Central Govt/ Defence							
1	2	3	4	5	6	7	8	9	10	11=(4 to 10)	12	13=11+12	14	15
I GHOLE ROAD	1	Aundh	2	0	3	2	2	0	1	10	35	45	7.98	303160.
	2	Karve Road	1	0	3	0	0	0	0	4	44	48	8.51	481987.
	3	Ghole Road	0	0	3	3	0	2	0	8	37	45	7.98	466274.
	4	Warje	0	0	3	0	0	0	2	5	2	7	1.24	359832.
II DHOLE PATIL ROAD	5	Yerawada	0	2	4	0	2	0	0	8	14	22	3.90	212610.
	6	Dhole Patil Road	2	0	3	18	0	0	0	23	20	43	7.62	486352.
	7	Hadapsar	0	0	12	4	1	0	0	17	35	52	9.22	770806.
	8	Sangamwadi	0	0	22	0	0	0	2	24	39	63	11.17	867596.
III KASBA PETH	9	Vishrambaug Wada	1	0	0	0	0	0	0	1	19	20	3.55	49411.0
	10	Bhawani Peth	2	0	2	0	0	0	0	4	41	45	7.98	292833.
	11	Kasba Peth	0	0	2	1	0	0	0	3	61	64	11.35	
IV TILAK ROAD	12	Bibwewadi	1	0	3	0	0	0	0	4	23	27	4.79	78741.
	13	Sahakar Nagar	1	1	5	0	0	3	1	11	29	40	7.09	334129.
	14	Tilak Road	0	0	1	0	0	0	1	2	41	43	7.62	530212.
TOTAL			10	3	66	28	5	5	7	124	440	564	100.00	
% Of Slum on Type Of Ownership To Total Slum			1.77	0.53	11.70	4.96	0.89	0.89	1.24	21.99	78.01	100.00		

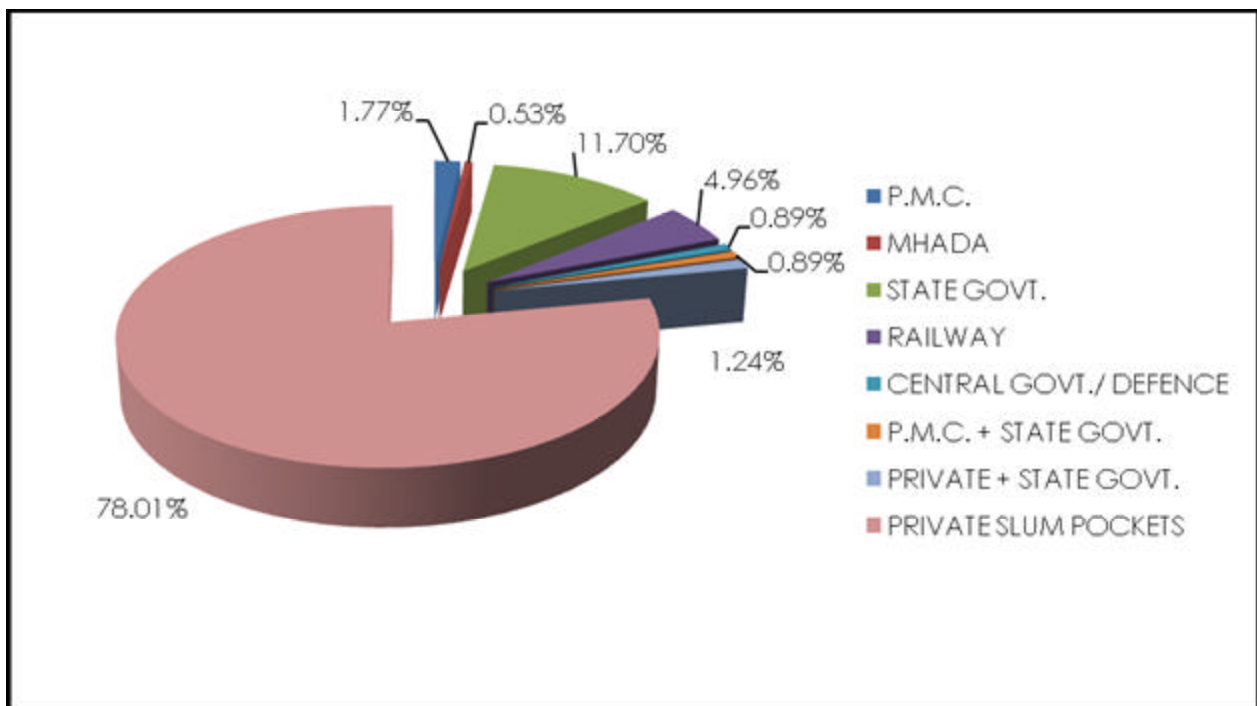
Source: MASHAL, Pune

5.4.3 DISTRIBUTION OF SLUMS ON GOVERNMENT & PRIVATE LAND

Slums have encroached public as well as private lands. By and large they are located on land judged unsuitable or unattractive for real estate development.

Out of declared 564 slums, 66 slum are on state owned land contributing 11.70 % of slum land ownership to total slum followed by also various departments ownerships like Pune Municipal Corporation, railways land etc.

Figure 5.12: land ownership of total 564 slums



5.5 SLUM IMPROVEMENT SCHEMES

5.5.1.1 REHABILITATION SCHEMES

Government of Maharashtra has started a rehabilitation scheme under which the declared slum dwellers are given free house of 25 sq.mt. carpet area. PMC does not implement this scheme but is implemented through developers. In the development rules appendix 'T' this is included and accordingly the slum rehabilitation proposals are sanctioned. The sale are given against redevelopment of slums is in proportional to the

area developed for slum dwellers. City is divided in four zones for the purpose of determining the ratio of free houses to sale component.

Table 5.4: Slum area and sale area

Sr. No.	Particulars	TDR Zone	Free sale component
1	Main city and congested area	A	1.00 : 2.00
2	Near congested area	B	1.00 : 2.50
3	Within old PMC area	C	1.00 : 3.00
4	Newly added 23 fully villages and five partly villages	D	Yet not finalized

In this scheme 3.00 FSI is given on original plot. But if maximum people have to benefit from such schemes then more than 3.00 FSI for such area is needed. This extra FSI has given by corporation in terms of TDR.

Table 5.5: Schemes for rehabilitation

Sr. No.	Schemes	SRD Numbers	Numbers	Tenements
1	Total rehabilitated schemes submitted	22	66	
2	Sanctioned schemes	22	35	
3	Building plans sanctioned	22	13	
4	Completed	17	14	
5	In progress	05		

Source: PMC

5.5.1.2 COMMON TOILET SCHEME FOR SLUM DWELLERS (NIRMAL BHARAT YOJANA)

In Pune city there were total 2,500 toilet seats constructed in 25 to 30 years back. These toilets were used by such people who don't have toilet facilities. The toilets were not maintained and the whole area was dirty. Because of these contagious diseases were spread in these areas. To avoid such problems corporation has taken lead to construct common toilet schemes in 1992 through Sulabh International organization.

According to a survey done by PMC officials many of the toilet blocks were not maintained properly due to which unhealthy environment prevailed. These toilet blocks were of a typical Aqua Privy type design. Many of the toilet blocks had outlived their

life. These toilet blocks were of load bearing structure and strictly of ground floor. The materials used for construction of these toilets were of poor specifications reducing the durability.

Table 5.6: Showing details of toilet blocks provided by PMC

Sr. No.	Name of Ward	Common Toilets		Pay and use toilets		Common Urinal units	
		Blocks	Seats	Blocks	Seats	Blocks	Seats
1	Aundh	43	446	59	1091	28	72
2	Ghole Road	80	722	64	1067	40	90
3	Karve Road	19	224	41	726	10	20
4	Warje - Karve Nagar	22	125	118	579	19	51
5	Dhole Patil Road	73	578	78	1130	46	115
6	Yerawada	3	20	35	417	6	54
7	Sangamwadi	68	791	104	1610	42	83
8	Bhawani Peth	43	346	36	723	31	141
9	Kasba and Vishrambag wada	28	83	24	190	65	160
10	Tilak Road	23	198	64	932	17	43
11	Bibwewadi	15	120	17	198	7	47
12	Sahakarnagar	37	460	53	820	67	114
13	Dhankawadi	4	49	7	133	4	8
14	Hadapsar	28	156	86	1011	40	119
Total		486	4318	786	10627	422	1117

Source: PMC

5.5.1.3 URINALS IN PUBLIC PLACES

Since the existing urinals were not sufficient, the PMC has undertaken steps to improve the present condition. Under this the PMC has set up fiber urinals, which occupy less space and also take less time for installation. These urinals are being installed by MAVIN. Till date 150 fiber urinals for men and 27 fiber urinals for women have been installed.

5.5.1.4 LOK AWAS YOJNA

A scheme of 2000 tenements has been proposed for slum dwellers with very low income by MHADA. Under this scheme, the backward class is given a subsidy of INR 11,000 as the National program and an additional INR 9,000 as social work donation. Lok awas Yojna was included Valmiki Ambedkar Awas Yojna in 2002 under which 149 beneficiaries are selected.

5.5.1.5 VALMIKI AMBEDKAR AWAS YOJNA

Under this scheme, the central and the state government will be contributing equal amounts for the rehabilitation of backward class slum dwellers. Those slum dwellers, whose name appears in the vote list of 1.1.1995, still staying in slums and below the poverty line have been offered an INR 50, 000/- subsidy for maximum 25 sq.mt. house in metro cities. Under this scheme total 7,875 houses are constructed. In phase I total 2,328 insitu and in phase II 4,447 are insitu and 1,100 under cluster developed.

5.5.1.6 SUBSIDY FOR DIFFERENT CLASSES

Government has taken an initiative to provide a facility for different classes also these categories need special attention for their overall development as these facilities have different grant of funds from state government.

Table 5.7: Showing details of subsidy for different classes

Sr. No.	Type	Percentage
1	Specified castes	50%
2	Backward class	30%
3	Other backward classes (O.B.C., B.C. etc.)	20%
4	Physically and mentally handicapped people	5%

Already 2.48 hectares of land in Hadapsar has been allotted for the rehabilitation of the 1164 houses that will come under this scheme. Also an amount of Rs.5.02 Cr. has been allotted. The slum dwellers residing along the railway lines, roads under widening projects and below flood levels near rivers will be shifted under this scheme to Hadapsar.

5.5.1.7 SCHEMES FOR SLUM IMPROVEMENT

The Government Redevelopment Scheme was introduced to enable free construction of houses of about 270 sq.ft. built-up area. This scheme is being implemented in about 78 slums. With respect to the basic services, over the last six years, PMC has provided 773 sanitation blocks in the slum areas in the city and constructed about 12,000 toilet seats. This was done under the Paid Toilet scheme.

Another scheme implemented by the PMC with support from the Gol is the Valmiki-Ambedkar Awas Yojna wherein slum dwellers below the poverty line who are residing in slums since 1/1/95 get Rs. 50,000 subsidy for a house of 225sq.ft. Under this scheme, PMC has already built (or is in the process of building) 800 houses in different slums. About 1200 houses are being constructed near Hadapsar. PMC is in the process of building about 2000 houses for the low income groups under the Lok Awas Yojna.

5.5.2 COMPARATIVE ANALYSIS BETWEEN SRA & SRD

Comparative table for SRA and SRD schemes giving details about the approaches and constrains.

A provision is also made in the regulation for construction of temporary transit accommodation, on site or open lands to the owner/ developer.

Entire built up area need not be constructed in-situ and full sale component or part thereof can be taken as TDR, if there are physical or economic constraints.

Table 5.8: Comparative analysis: Slum redevelopment scheme & slum rehabilitation scheme

SRD	SRA
Basically a redevelopment scheme	Redevelopment + rehabilitation of settlements
Tenement density initially 500 DU/ Ha after modified 360 tenements	360 tenements / ha. Additional tenements being used as tenements for project affected persons
FSI maximum up to 2.5	FSI maximum up to 3.0
Relocation , rehabilitation must be done insitu	Rehabilitation shall be allowed on other site within 5 km subject to conditions
TDR available	TDR is available
Balwadi, welfare centre , no provision	25 sq.m. Balwadi for above 1 Hectre, women welfare centre above 1 Hectre.
Tenement - a self contained tenement of 225 sq ft carpet area free of cost	A self contained tenement of 269 sq ft carpet area free of cost
Deposit & infrastructure charges , no provision	INR 20,000 per rehabilitation tenement and Rs 560/sq.mt.
No provision of clubbing of two different schemes	Provision for clubbing two SRA schemes having the same rehabilitation to sale ratio

<p>SRS on DP & TP reservation 50% out of the area shall be earmarked for reservation and rest of area shall be used for SRS</p>	<p>Out of total area under reservation 40% of the area shall be earmarked for reservation and rest of area shall be used for SRS. Whereas existing density of slum more than 400 tenement/ha. It shall be reduce up to 33%</p>
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5.6 PROBLEMS AND ISSUES OF SLUMS AT PUNE

5.6.1.1 CITY LEVEL

- 1) The growth rate of slum population is higher than the growth rate of Pune city growth rate in last decade.
- 2) Approximately 40% of Pune population resides in slums spread over 10% of city area in 2009 creating very high density development i.e. approx 1100 persons/ha. As per projections in 2021 more than 50% population will be residing in slums if no adequate housing provisions are made.
- 3) No adequate Housing supply by Government Agencies. Improvement in scheme formulation and implementation is lacking.
- 4) Lack of coordination between organizations and various schemes, poor monitoring of schemes. Lack of Single window concept.
- 5) MHADA's role limited to only for monitoring and funding. No actual implementation undertaken.
- 6) Increasing land values and construction cost make people housing unaffordable leading to increasing slums in the city.
- 7) Housing finance is moreover unaffordable to slum dwellers due to heavy stamp duties and other contingency charges.

5.6.1.2 SETTLEMENT LEVEL

- 1) Most of slums have poor environmental conditions causing various health hazards, resulting in inefficiency in work due to poor health & lack of affordable health facilities. Haphazard layouts of the slums with narrow lanes makes it difficult to access these areas specially during calamity
- 2) Very high residential density leading to unhealthy living conditions and creating difficulties in up-gradation of individual house

- 3) Most of the slum dwellers do not have secure housing tenure due to which they don't get facilitated with local government's services
- 4) Settlements lying near high-tension lines and flood prone areas are harmful to the life of people. Illegal tapping of electricity increases the risk of fire; the structural stability of houses is not good to resist fire.

5.6.1.3 SCHEME LEVEL

- 1) Due to the overlapping in beneficiary selection criteria in some schemes, some settlements get benefit more than two times.
- 2) Non-declared slums were only considered under NSDP scheme and not any other scheme.
- 3) Community participation is not taken into consideration in any of the scheme in implementation process
- 4) Generally overlapping of number of schemes on same slum creates wastage of initial investment.
- 5) Schemes are more politically motivated not taking into consideration actual problems only look at physical development & not wholesome socio-economic & physical development.

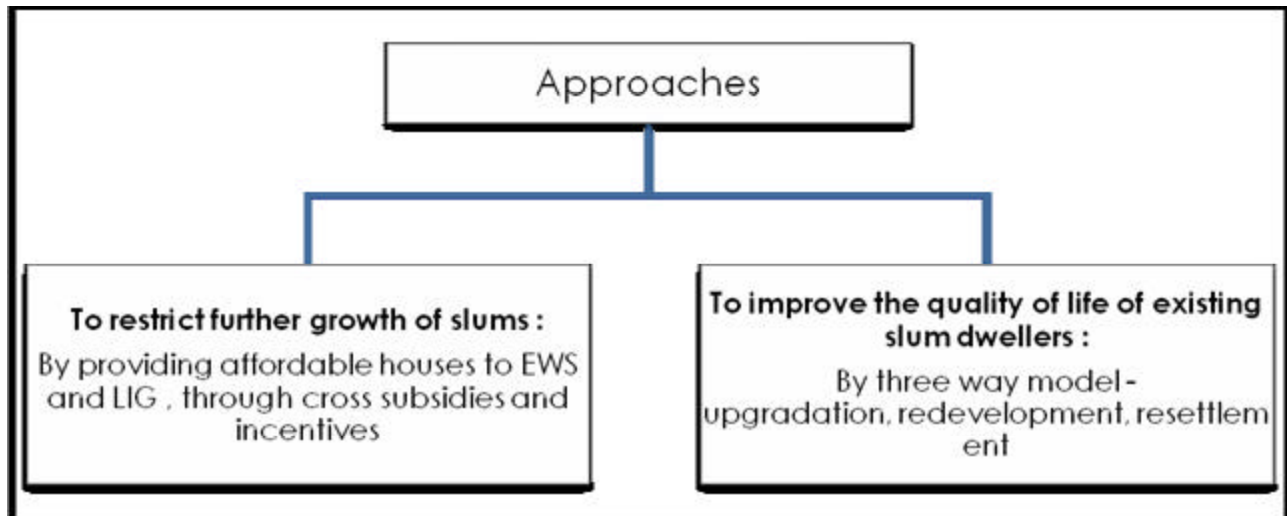
5.7 RECOMMENDATIONS

Strategies have to be focused on the following objectives for overall planned development of slums

- 1) Access to secure land tenure
- 2) Shelter Improvement
- 3) Access to Basic Infrastructure
- 4) Employment empowerment (through skill up gradation)

5.7.1 APPROACHES

Figure 5.13: The Strategy is based on the following approaches



Source: MASHAL

5.7.1.1 UP GRADATION

Betterment of the existing housing in the Slums settlements by providing land tenure, In-situ housing and basic services like, water supply, sanitation. Up gradation can be carried out in 3 ways:

- 1) Physical up gradation
- 2) Social up gradation
- 3) Economic up gradation

5.7.1.2 REDEVELOPMENT

Redevelopment is another option where fully built or partially built tenements will be given to the slum households on cross-subsidy basis.

5.7.1.3 RESETTLEMENT

Resettlement will be considered only in special cases i.e. in case the settlement is located in vulnerable areas like slums near to the Nallah's, on low lying lands, and also to some parts of the inner city for decongestion or on land reserved for non-residential landuse. The families shall be persuaded to move to alternative sites in nearby locations. A small sum shall be paid to each family towards transit housing.

Table 5.9: Number of HH's to be resettled

Total no. of HH falling under riverbed/ river banks/ high flood level affect line of Mutha river	5142
Total no. of HH falling under Nallah's, canals	19670
Total no. of HH on hilltop hill slopes (Parvati Hill)	11604
Total no. of slum HH on state & central govt. lands	25789
Total no of slum HH to be resettled	62205

Source: MASHAL

Table 5.10: land requirement for slum resettlement

Particulars	Area in sq.mt.	Area in ha
Rehabilitation area	1555125	156
Land required	518375	52

Source: MASHAL

Table 5.11: total no of HH to be upgraded or redeveloped

Total existing no of households in slums	233188	
no of HH to be either upgraded or redeveloped	170983	
% of HH to be upgraded	40%	68393
% of HH to be redeveloped	60%	102590

Source: MASHAL

6. CASE STUDIES

Case studies are selected depending upon the different criteria to get the better knowledge of Pune's housing condition. City has been divided into different subsystems i.e. Traditional, planned and unplanned in a way the city evolved. Traditional, Planned and Unplanned parts of the city were studied separately. Tenures and areas are selected upon typology, location and key role players of household providers. These areas are visited and a behavior of respondent is studied.

1) TRADITIONAL

This pertains to the core and historic areas in the city. Generally these are the early settlements. In this there are traditional areas, where the typical character of the city can be seen like Peth Areas, Camp, Mandai, Deccan Gymkhana etc. these areas are commercial hub (C.B.D.) of the city.

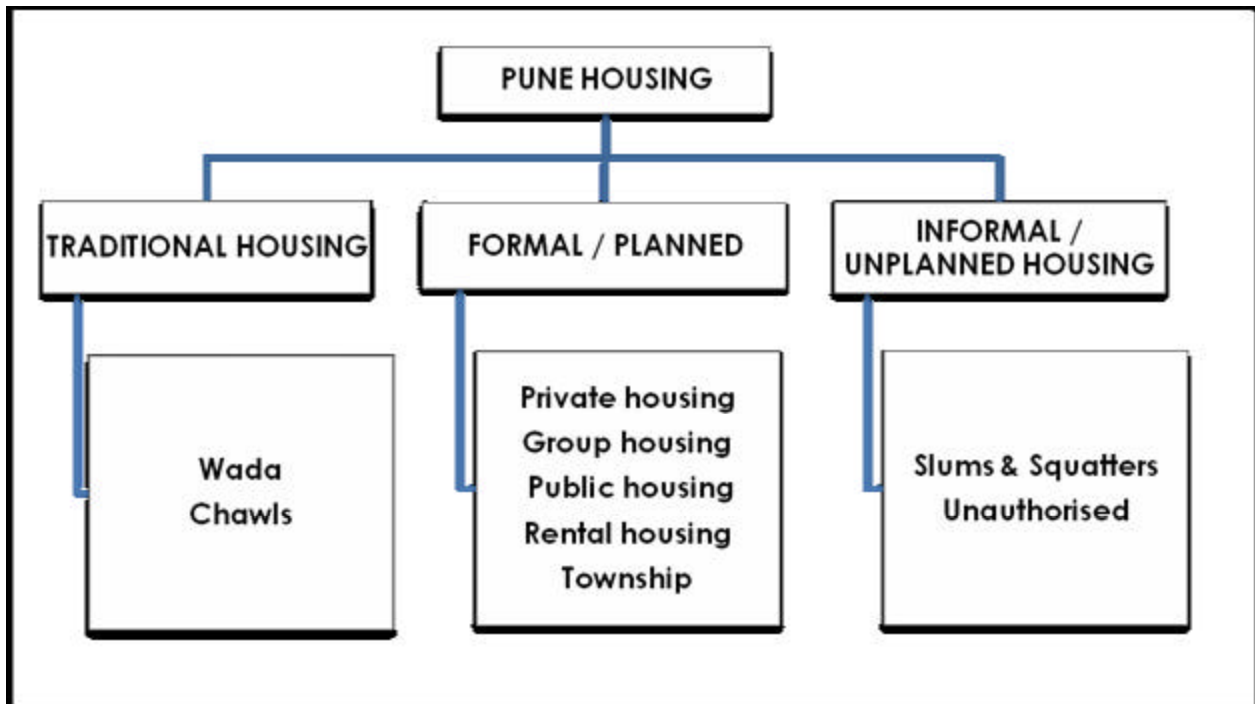
2) UNPLANNED

These are the refugee settlements, slums, community based settlements. These areas came up eventually due to different reasons like drought, partition, urbanization, etc. These areas lack in infrastructure.

3) PLANNED

These pertain to public and private housing, co-operative societies, and employee housing. These are newly developed areas in the form of townships, apartments with modern infrastructure, and materials with optimum utilization of land.

Figure 6.1: Housing systems Pune



Source: MASHAL

6.1 TRADITIONAL HOUSING

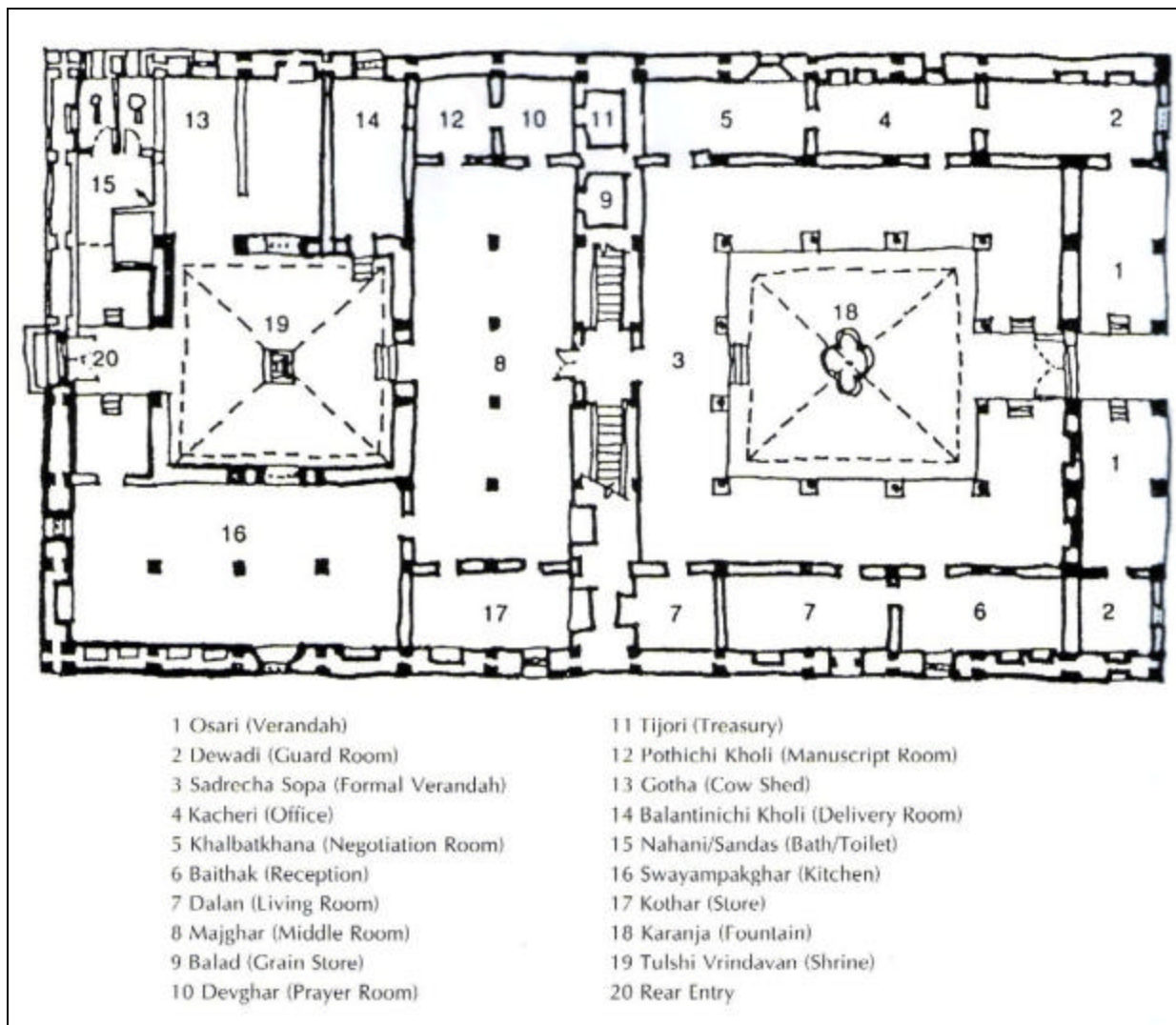
6.1.1 WADA

Wada symbolizes the tales of Pune's rich culture and heritage. They are historical symbol of Pune. They are famous for their typical architectural character and the traditional character of old city of the Pune. Wada's were used for both domestic as well as political purposes. Now days they are mainly used for residential purpose. They were elaborately planned paying minute attention to all functions and requirements of the women folk and at the same time safeguarding their privacy and security. Wada's are huge massive structures for which material used for construction was mainly stone, limestone and bricks. These are normally load bearing structures. Now days Wada's are on redevelopment spree and rest of the Wada's which are as it is occupied by the owner itself and renters since long back. Tenants are integral part of all Wada's as they are getting benefit of rent control act since last 3-4 decades. Owner can't evict them from property until they compensate them for the same. Redevelopment of Wadas can't take place without their mutual consent. While some are reconstructed

(developed) and converted into apartments, some Wadas are partly developed and partly undeveloped i.e. in undeveloped Wada the owner resides and in redeveloped Wada the tenants continue their tenancy. Other extra units are sold by owner towards redevelopment compensation of old Wada's.

Most of the Wadas are more than 100 years old and some of the occupants who are owner have renovated their residents with new construction materials, like tiles and roofs. Many others are staying in the same old structures with cracks; leakages, water logging problems etc. and they are needed to be repaired. Most of them have connected their drainage line to the new drainage line.

Figure 6.2: Typical Plan of Wada



The tenants live there from many years. The rent taken from them is too less in today's context. Original rent ranging between Rs. 20 to Rs. 50 is charged by the owner as the tenants are in occupation since last more than 25 years and owners are restricted by the Rent control Act. In case of development of Wada's the owner has developed that space by himself or he has given it to builder to develop that area against compensation. Then the space is developed as per the FSI is permitted to the owner. Then the renters are shifted in the flats. They either own the flat or live by rent. Also the flats are sold or rented to the people who are new tenant at the same location. Rent is normally according to today's market.

At the time of development of Wada's there were no parking provision restrictions in Development Control Regulations. So today parking is the major problem for Wada's residents as these structures lacks in parking facility for their vehicles. But now during the redevelopment of the old structure there is a restriction for parking and the problem are solved to some extent. Since there was no parking, the vehicles were parked on the streets which gave rise to traffic congestion problem. Some family members shifted from Wada to other place as there is no parking place to park their vehicles.

Figure 6.3: Wada at Sadashiv Peth (Left) and redeveloped and Wada (Narayan) at Narayan Peth



6.1.2 UNDEVELOPED WADAS

6.1.2.1 NAVA VISHNUPURA MANGAL KARYALAY, JOSHI WADA

The name of the Wada is from owner's name. The Wada is located in 1277; Sadashiv peth, Nava Vishnu Mandir, Pune. The Wada is undeveloped. Total area of this Wada is 8000 sq.ft. and is about 100 years old structure. Only one member from the owner family stays in the Wada. Rent of Mangal karyalay is Rs. 7700/- per function and mostly given for the religious ritual ceremony on rent. There is a temple of Vishnu which is a part of Wada. One of the construction material used is Sagwan wood which helps the structure to sustain itself for many years. This Wada have independent water supply, electricity, bathroom and toilets. It has better drainage system. The owner pays a property tax and a water tax of Rs. 1600/- per year. The owner is not willing to redevelop the Wada as he has sentimental attachment with the property but the observation says that even if owner want to redevelop this Wada it has very small and narrow entrance. So, according to DCR constrains this Wada will finally end up with very small built up area.

Figure 6.4: Typical Plan and Entrance of Nava Vishnu Magal Karyalay Wada



The owner is facing a problem of rainwater logging on road as the drainage system on roads for water logging is not proper and the covers of the drains are sealed, previously

there was net to drain the rainwater. A member of the same family from the Wada stays at the different location of the city as they are facing a problem of lack in parking space for car. This is much more common problem for undeveloped Wada's.

6.1.2.2 PANSE/JOSHI WADA

Panse Joshi wada is located in 1424-29 Shukrawar peth, Pune. Structure of wada is semi katchha, having area of about 6000 sq.ft. Which of around 200 year old. This wada has open area of about 500 sq.ft. Property tax paid by owner is about INR 7000/-. Monthly income of the owner is around INR 10,000/-. Total numbers of families in this wada are 6 and number of Persons living here are 30. Rent per family is Rs. 40-50 as the Renters are very old. Today, the rent is same as it was in older days as a result of Rent control act. Wada have independent water supply, electricity, bathrooms and toilets.

Figure 6.5: Panse Wada



The owner is willing to redevelop the wada with the help of developer and is trying to undergo the process since three years, but still there is no improvement in the process. They have decided to give the same area to the renters after new development. They are going to handover the project to the builder for its development. There is also a problem of rainwater logging in front of the wada as there is no proper system for draining of rain water. There is also the problem of sanitary water leakage frequently.

Also there is no proper pressure for drinking water, so the drinking water is to be brought from ground floor which is inconvenient for the families residing on first floor.

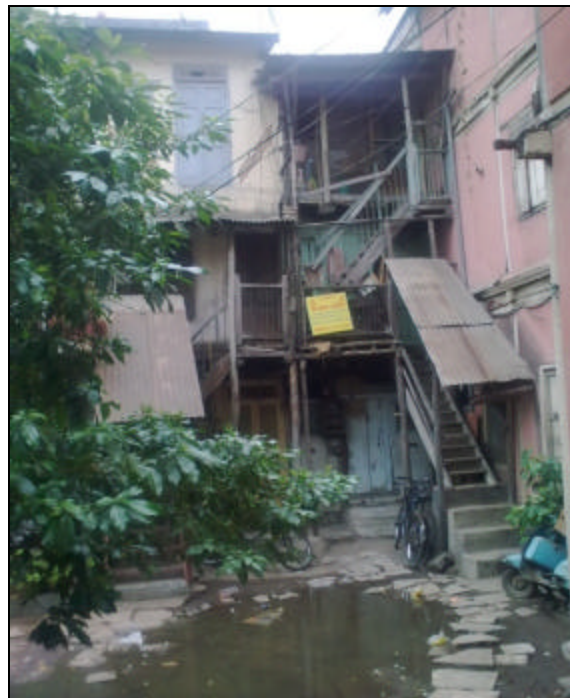
6.1.2.3 SHAH WADA

Mr. Santosh Mohan Shah Tenant of this Wada situated at 121, Shukravar peth, Kasaba ward, Pune. Wada is 40 years old, undeveloped having plot area of 2000 sq.ft. Wada have independent water supply, electricity, bathrooms and toilets. Four persons live in this Wada out of which one person is employed for INR 25, 000 per month. Wada is a pucca structure. Two families are as renters for which rent per family is Rs. 50/- per month. As this Wada is small in size and three families are residing in this Wada if redevelopment of this Wada planned there is not marginal profit out of it for any developer, so this affects redevelopment of this profile Wada. Owner is disappointed with the parking problem which also gives rise to traffic problems.

6.1.2.4 ATRAY WADA

This Wada is situated at 142 A, Sadashiv peth, Kasaba ward, Pune. Owner is a retired pensioner.

Figure 6.6: Wada at old city



Wada is ground plus first floor built structure which is pucca. Ground floor is 70 years old and first floor is 50 years old. Total plot area is 1100 sq.ft and built up area is 1300 sq.ft. The owner himself stays on first floor and renter is on ground floor. Property tax paid by owner is around INR 1400 per year. The renters are residing since many years, so still they are paying the rent of INR 30 per month, which is not sufficient now a day. Owner is not willing to develop the structure as it is good in condition and owner is not interested in expansion of the structure because his needs are satisfied with existing structure.

6.1.3 DEVELOPED WADA

6.1.3.1 BARVE WADA: (PARTLY DEVELOPED AND PARTLY UNDEVELOPED)

Barve Wada is partly developed and partly undeveloped means the owner himself live in the undeveloped Wada at the back side of the site as they have sentimental attachment with the structure. The owner's relative is Developer so he has developed the frontier part as per he gets the permission for the same. It is located in sector 193, Shukrawar peth, under ward Kasbah. Wada is 125 years old but still a pucca structure.

Figure 6.7: Barve Wada and Renovation inside Wada



Some internal changes have been done but the external appearance is still historical. Plantations in front of Wada enhance the beauty of Wada. Wada have independent water supply, electricity, bathrooms and toilet facilities. The solid waste collection is door to door. Three persons live in this Wada out of which two earn and monthly income is around INR 30,000. In rest of the site the owner has three apartments. This new

development is since 15 years. The three buildings did not developed at a same time. The development took place in stages. First building was constructed in which most of the flats were owned by the previous renters. Then in other two buildings, the flats were sold to the new occupants who were not resided in Wada previously.

6.1.3.2 FLAT NO 8 AND 9 (DEVELOPED BARVE WADA)

Owned by resident at developed Barve Wada located at 171, Shukrawar peth, ward Kasaba. The structure is pucca. Owners have purchased the flats since 10 to 12 years back. Area of each flat is 600 sq.ft. Tax paid for this flat is about Rs. 7000/- has independent water supply, electricity, bathrooms and toilet facilities.

Figure 6.8: Barve Wada Developed view from undeveloped Wada and elevation



Number of persons living in this flat is 5 out of which only 1 person earns Rs. 25000 per month. First flat was purchased in 1996 for 6 lakhs and second flat was purchased in 1999 for 9 lakhs. Present rate of the flat is 25 lakhs. These flat owners had formed their society. The terrace and parking is not owned by these owners yet, as the rights are not

transferred. As the plot area of this Wada was bigger compared to other majority Wada's of Pune redevelopment took place without any litigates.

6.1.4 CHAWLS

6.1.5 UNDEVELOPED CHAWLS

6.1.5.1 SONAWANE CHAWL (NARAYAN PETH)

Today's Sonawane Building was once known as Sonawane Chawl about 40 to 50 years ago. In 1966 flood, the chawl was partly under water and was rebuilt by its owner who used to work as a contractor. Some of its land was also gone in road widening during that time. The chawl has 12 rooms.

Figure 6.9: Showing elevation of Sonawane Chawl and retail activity



One of which is given to a tailor on rent of Rs. 25/-. This tailor is their oldest tenant, so the Sonawanes' do not want somebody else to acquire that place. Though they get less rent, they are happy about it. Owner's wife now looks after the total Sonawane Chawl. She has two sons all of them live together. Owner recalls his childhood memory saying that they were able to see the Lakdi Bridge from their building which has been now blocked by so many buildings. They use to get 24 hours water in great force, which has been now cut off to twice a day. They still don't have a water meter installed. The physical state of the chawl is still good except some few damages at some places. Every morning PMC's solid waste container truck comes for waste collection.

6.1.6 DEVELOPED CHAWLS

6.1.6.1 JEEVAN WADI (NARAYAN PETH)

Jeevan wadi, 60 to 75 years ago was owned by Paresh Doshi. All rooms of area 12x15 sq.ft. on rent of Rs. 8/- per month. About 17 years ago Mr. Paresh Doshi sold the whole area to the Yagyankalpa Patpedhi. The Patapedhi along with old tenants and a private builder reconstructed the front chawl area now known as the Narayan Chambers. The back portion of the chawl is still in dispute between the owner and the tenants. The owner of the Jeevan wadi chawl i.e. the Patapedhi has transformed the chawl into a boy's hostel. In this boys hostel there are 5 to 6 old tenants still living there. They are not ready to leave the place due to many reasons. Some are still economically weak, some do not want to leave because they are now very well conversant with that place. The old tenants previously use to pay Rs. 8/- per month as rent which has been now increased to Rs. 15/- per month. The old tenants are not happy about the rent increase.

Figure 6.10: Showing Jeevanwadi Chawl



The owner of the Jeevanwadi is ready to pay a token amount of Rs. 25,000/- to the old tenants so that they leave the rooms. Solid waste 'Ghanta Gadi' comes every day at the road corner but the members inside cannot hear the bell ring. Mrs. Sneha Sunil Joshi says that she has to dump the solid waste of her house at the nearby municipal dustbin container where many stray dogs and cows mingle around causing nuisance. In spite of segregating the wet and dry solid waste at home, after dumping it in the municipal container it again gets mixed up as there is no facility for their separation. The tenants have their own electric meters, other than this they pay only rent to the owner.

Figure 6.11: Showing Developed Jeevanwadi Chawl into Narayan Chambers'



Smt. Vimal Kashinath Joshi, the widow of Kashinath Joshi who was a PMC's service man during that time. Both of them along with their only son lived in Jeevan wadi since 70 to 75 years ago. They use to pay a rent of INR 8/- per month. After the death of Mr. Kashinath, his wife Vimal brought up her son by doing some household works as well as she use to get his pension amount. She is very much use to this area so is not ready to leave that place and now lives there paying INR 15/- per month rent.

6.1.6.2 VISHWA SHOBHA CO-OP. HOUSING SOCIETY (NARAYAN PETH)

An area of 16,000 Sq. Ft was previously known as Vishwa Shobha, which was renewed partially in 1981. The front portion was constructed as Vishwa Shobha Co-op. Housing Soc. This new building created housing for the old tenants as well as the new owners also. The back portion of the Vishwa Shobha is still the old structure. The tenants have paid INR 1, 00,000/- to the builder A. V. Bhatt and got these rooms on their own names.

Figure 6.12: Showing Developed Vishwashobha Chawl into cooperative housing society



The society as a whole has no car parking facility. The people park their vehicles on the road, thus causing traffic jam. Mr. Kedar Kulkarni, a business man purchased a new flat of 500 Sq. Ft. in the new Vishwa Shobha Co-op Housing Society, about 25 years ago at INR 1,75,000/-. He is happy about the amenities provided by the corporation except the parking facility for vehicle. He expects PMC to take some new action regarding the parking place. He regularly pays yearly tax of INR 850/- to 900/- for his flat as well as other bills like water bill and electric bill.

6.1.1 LESSONS FROM THE TRADITIONAL HOUSING TYPOLOGY STUDY

6.1.1.1 DECREASING IMPORTANCE OF WADA

Today we don't get any mark of the old Wada type structure in any new development in any part of the Pune city. As it is identity of the city's history. If we see type of the development today carried out in old Pune city it doesn't have any séance of any architectural style. It spoils the traditional character of the core area. There is vast variation in the skyline from two storied old building one side of the road and newly developed 4-5 storied building on the other side of the road. This disturbs the moral fiber of old city. The demands have increased, disposable incomes have increased and education has played a major role in helping these changes to occur now, people expect more out of life, they want high end living. Change in the living space from multi room Wada to few room bungalow with garden to 2BHK, 3BHK flats. In early phase there are various different living spaces like Dewadi(Guard room), Sadrecha sofa

(Formal verandah), Baithak (Reception), Majghar(Middle room), Devghar(Worship room), Tijori(Treasury), and more. Today these living spaces are the part of the only big bungalows these are cultural changes over the centuries. Today everywhere we can observe the tall concrete building. Buildings which are constructed in last few years are having high tech styles.

6.1.1.2 REASONS RESTRICTING WADA REDEVELOPMENT

Pune old city area consist of large number of Wada out of which most of the Properties are in danger situation, requires attention to redevelop. Most of the Wada residents are residing in unhealthy and dangerous situation. Now a day many Wada's are losing their structural stability and occupant's has received notice from Municipal Corporation to vacate selected Wada's for their safety. Most of the residents of Wada's are living there since many years so they are not willing to go new place because of sentimental attachment to the location and Property. Many of the residents are not financially sound to shift into new unit. So for safety reason of the occupants of the Wada when actions are taken to demolish the dangerous structures by the authority people, the occupants if the Wada does not co-operate for the same and resist for action to be taken. An occupant thinks that Developers with the help of Municipal Corporation are making tricks to vacate them from the units. Many times the issues get carried out in political directions also. Due to structural instability these units falls causing fatalities and again Municipal Corporation is held to be responsible for not working properly. In all the redevelopment of Wada's issue is getting serious with the period of time. Redevelopment or maintenance of these structures is an important issue of today. Since the rent collected by owner from renters is not sufficient for maintenance or redevelopment owners are not capable of maintaining the Wada's and renters don't take initiative to improve the condition of Wada's.

There are nearly 18,000 properties located in Kasba peth, Budhwar Peth, Shaniwar Peth, Nana Peth, Bhavani Peth, Nana Peth, Bhavani Peth and Narayan Peth out of which around 8,000 are very old and need immediate repairs.¹⁰

¹⁰ June 21,2009 Sunday Times of India, Pune

Figure 6.13: Some undeveloped Wada's in old city



6.1.1.3 OWNER AND RENTERS UNWILLINGNESS

Most of the times owners are having other housing units and they are not staying at Wada also Wada's are occupied by the more number of the renter so after redevelopment the profit will be less so the owners and renters are not willing to redevelop the Wada and due to sentimental attachment and habit to stay within old city the occupants don't vacate the unit. There should be FSI relaxation for redevelopment of these structures.

6.1.1.4 UNBUILDABLE AREA

Many of the Wada are small in area and properties are adjoining to Road, small lanes etc. so while preparing new layout as per DCR is followed leaving road widening area, setbacks, lane sets etc. the plot becomes unbuildable or the outcome becomes very small so owner or builder are not willing to develop the Wada's. So the redevelopment of these Wada gets restricted. There should be some relaxation from DCR to promote the redevelopment of Wada's suffering from this issue.

6.1.1.5 OWNER-OWNER CONFLICT

Most of the Wada has multiple ownership. On most of the times the owners doesn't get agree on one decision of redevelopment of Wada as they have conflict on the share

which will come to their way of the outcome after redevelopment or one of them want to keep that as a asset restrict the redevelopment of Wada. Increase in FSI will facilitate more outcomes from the redevelopment resulting into the redevelopment of Wada's.

6.1.1.6 OWNER-RENTER CONFLICT

Owner and Renter are both not getting agree on the decision of redeveloping the Wada because of several factors like renter are afraid of getting evicted from the location without any compensation or shares of outcome. Many of the Wada's are involved in this type of legal disputes.

6.1.1.7 SMALL AREAS OF WADA

Wada are having small areas and occupants i.e. owner and renters are more compared to the carpet area. If the Wada is set for the redevelopment, restriction of DCR leaves plot undevelopable or results into small building which can't even cater occupy the current occupants, so there should be FSI intervention and DCR relaxation.

6.2 FORMAL / PLANNED HOUSING

6.2.1 PRIVATE HOUSING

6.2.1.1 MAHATMA HOUSING SOCIETY, KOTHRUD, PUNE

Mahatma Housing society is a well known high income group bungalows society located at Kothrud, Pune. It is established in 5th October 1965, at survey no. 62 and 65, Sahakar Bhavan, Behind Gandhi Bhavan and about 1km away from Dahanukar colony. It is independent bungalow scheme.

Mahatma society consist of total area about 72 acres just next to hill. Initially plotting of whole land is done depending upon various sizes ranging from about 300 to 550 sq.mt. including some bigger plots are having area about 1000 to 3000 sq.mt. Mahatma society is a High income group society which is physically isolated from the outside by a security at the entrance to restrict the anonymous and informal carts getting inside from security purpose as well as the occupants don't want to get disturb by the external visitors.

Figure 6.14: Location of Mahatma Society



Source: Generated From Google.com

It can be seen from the layout that there is very small reservation for the open space in the central portion of the land parcel and land adjacent to the hill is reserved as school ground and open space, as per the UDPFI guidelines should be minimum 10% of that of plot area, also transportation should be 15% which seems to be missing in the plot area. Layout plan states that there is presence of school and one primary school but on site the schools seem to be absent. This is the scenario for almost all cooperative housing societies at Pune and this society is just representative of all of them. The society consists of mainly individual bungalows each bungalow has defined boundary of brick wall. Normally a G+1 or G+2 structures can be observed on site. As this HIG society the water usage is around 135 lpcd and solid waste generated is also high which is found to be 450 gm/day which is much higher than that of generated by the LIG which is found to be 250 gm/day. So, HIG create more solid waste than LIG's putting pressure on solid waste management.

Figure 6.15: Mahatma Society Layout

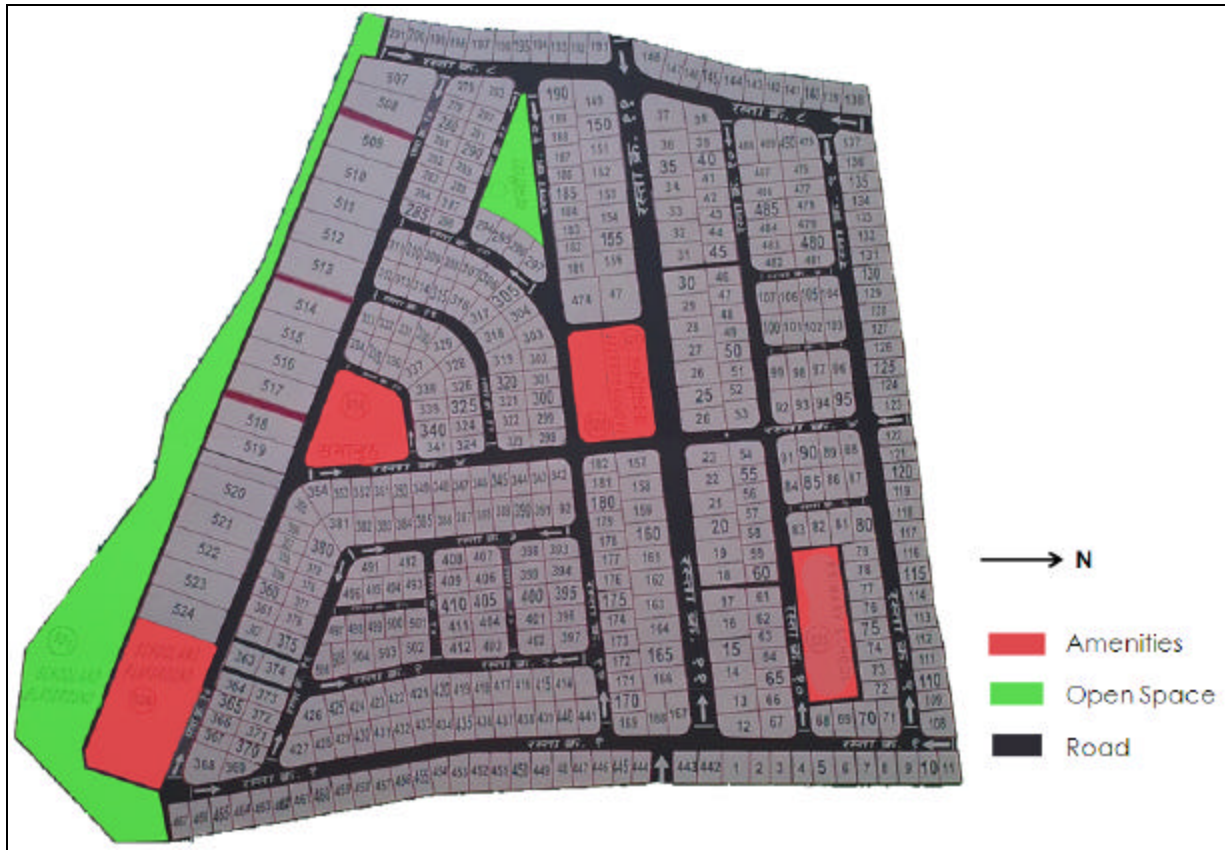


Figure 6.16: Showing Bungalows at Kothrud



Each Bungalow has individual water tap connection as well as individual parking and other facilities. The solid waste is collected by the society only and is then disposed off out of the society area. The Pune Municipal Garbage collection vehicles are not allowed to enter inside the society as the occupant thinks that they get disturb because of them.

6.2.2 GROUP HOUSING

6.2.2.1 SWAPNASHILP

Swpnashilp cooperative housing society is a group housing scheme located at S. No. 19/2, Ganesh Nagar, Pune 411029.

Figure 6.18: Buildings of Swapnashilp co. housing society



Total area of the scheme is around 8 acre. It consist of around 469 apartment units accommodated in 12 blocks of which each block consist of 38 to 40 units. Units are normally 2BHK and 3BHK. Scheme also consists of around 25 row houses. Flat areas are varies from 900 to 1200 sq.ft. Current rent for 2BHK unit having area is INR 16000 per month. FSI consumed is around 1.5 for the scheme. This scheme consists of open spaces and amenities for the benefits of the occupants. Parking facility is both common and allotted. The Project started with the outright price of INR 2200 and today prices are shot up to INR 3400 for a second ownership. Project is developed by Naiknavare Developer. The residents of the society have come up with vermi compost for wet garbage it is collected and disposed off within the society only. Now the residents are thinking of solar water heater panels for water heating so that they can save electricity and LPG which they are currently using for the same. The towers are normally 10 floor structures.

Figure 6.19: location of Swapnashilp Co operative housing society

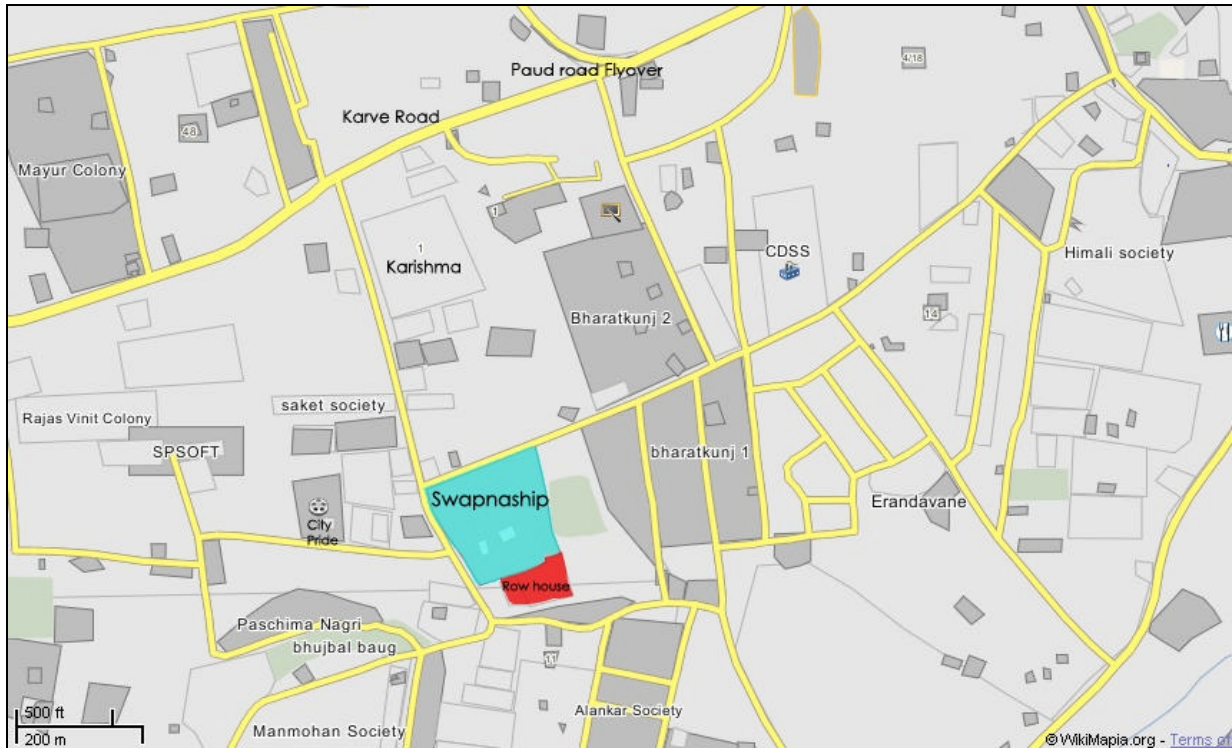


Figure 6.20: Building of Swapnashilp Co operative housing society and garbage collected within society



6.2.3 PUBLIC HOUSING

6.2.3.1 MHADA, PUNE

The Pune Housing and Area Development Board, Pune is a regional unit of MHADA. It is established on 5th December 1977 as per the provisions in section 18 of the Maharashtra Housing and Area Development Act, 1976.

The Board is functioning at Regional Head Quarters at Pune having territorial Jurisdiction over 14 Districts of Pune Division namely; Pune, Pimpri Chinchwad, Kolhapur, Ichal-Karanji, Solapur, Barshi, Pandharpur, Sangali-Miraj-Kupwad, Satara, Karad, Lonawala, Baramati, Esampur and Faltan Districts. The Board is functioning under superintendence and control of the Maharashtra Housing and Area Development Authority, Mumbai.

6.2.3.2 INFORMATION ABOUT MHADA SCHEMES IN AND AROUND CITY

1	Schemes in Pune	27	Nos.
	Schemes Out of Pune	15	Nos.
2	Tenements in Pune	16,909	Nos.
	No. of tenements out of Pune	2330	Nos.
3	Area covered by MHADA schemes in Pune	167.49	ha
	Area covered by MHADA schemes out of Pune	43	ha
4	Vacant land	No	
5	Future schemes	Land acquisition is under process	
	1. Talegaon	1	
	2. kharabwadi	1	1.21 ha
	3. Shirur	1	3.44 ha
	4. Pune	4	
	5. Bhor	1	

Source: MHADA, Pune

MHADA has completed 27 schemes, accommodating 16,909 households, agglomerating total area of 167.49 ha at Pune. Total 167.49 ha area is distributed over PMC, PCMC limit at Pune. While MHADA is not having any vacant land now and land acquisition is under process for 4 land parcels at Pune.

Detail of the land parcel covered by MHADA schemes in Pune is as given below in the table.

Table 6.1: List of MHADA colony in Pune and Pimpri Chinchwad

SR NO.	NAME OF COLONEY	SURVEY NO.	TOTAL AREA (ha)
1	YERWADA	191A	30.47
2	PHULE NAGAR, YERWADA	120(Pt)	6.68
3	GOLF CLUB YERWADA, BEEDI KAMGAR	10B,14A,16A,17B,18B,25B (A SITE)	2.09
4	GOLF CLUB YERWADA	10B,14A,16A,17B,18B,25B (B SITE)	1.50
5	GOLF CLUB ROAD YERWADA	10B,14A,16A,17B,18B,25B (C SITE)	1.33
6	GOLF CLUB ROAD YERWADA	10B,14A,16A,17B,18B,25B (D SITE)	0.69
7	AGARKARNAGAR BUND GARDEN ROAD	12/1	1.39
8	KHARADI	37/1/1	5.63
9	KHARADI	37/ 2a, 2b	4.81
10	WADGAON SHERI	43/3A	1.85
11	HINGANE	31+30/2B/1	1.71
12	HADAPSAR	87(pt)	2.93
13	HADAPSAR S V NAGAR S	308 A,B	2.99
14	LOKMANYA NAGAR	CTS NO. 177	6.59
15	LOHOGAON	228/5	1.80
16	MUNJERI MAHARSHI NAGAR FINAL	plot NO. 417+418, 418+416/1, 4+421+423+475D+424+474	1.39
17	BHAMBURDA, GOKHALENAGAR	97	7.42
18	BHAMBURDA, GOKHALENAGAR	98, 99	13.59
19	PIMPARI WAGHIRE, MORWADI	150, 152, 153 (pt)	8.61
20	S.T. NAGAR	175 (pt)	1.00
21	SANT TUKARAM NAGAR, PIMPARI	169, 170, 172, 173,176	40.83
22	PARVATI LAXMINAGAR	93	21.25
23	KOTHRUD	115 + 2/A	0.27
24	KOTHRUD	115/6/2 (pt)	0.19
25	KOTHRUD	36	0.12
26	KOTHRUD	110/2 PT	0.35
27	KOTHRUD	7 + 8	0.05
TOTAL			167.49

Source: MHADA, Pune

6.2.3.3 MHADA – YERWADA HOUSING SCHEME

Yerwada housing scheme is designed and implemented by MHADA. The project covers all type of income groups that is EWS, LIG, MIG and HIG. As MHADA is the Public housing provider, they take care of all type of income group to be accumulated in the scheme.

Figure 6.21: Actual site Photographs of MHADA scheme



Figure 6.22: Google image showing MHADA housing scheme at Yerawada



6.2.3.4 HOUSING DESIGN

As it is a public housing scheme there is a huge difference in the quality of design and work execution the main features that will first to our notice is that the size for EWS units is small and the space is inadequate. As the mentality of EWS occupant is not made to have bathroom and Sanitation facility through single opening they want the same facility with different openings. Kitchen facility is the most important household activity as the MHADA's housing design fails to provide the Privacy to sanitation facility it is located near kitchen which is highly disapproved by the beneficiaries. While MHADA officials states that because of the size constrains of a single household and they have to consume full FSI in small area they are forced to design units in such a way that they can accumulate maximum beneficiaries within that plot size and built up area permitted to them.

6.2.3.5 QUALITY OF CONSTRUCTION

Beneficiaries of the scheme consider the quality of construction to be poor as at most of the location the cracks are visible throughout the construction. On this query MHADA official adds that we try to give our best quality of construction within the limit of the funds available and as per the specifications.

While the beneficiaries are much satisfied with the existing civic amenities which they have like individual water taps, electric meter also the sanitation facilities as prior to this they have to struggle for the same facilities which are now available to them only with the help of MHADA housing.

One of the issues of the scheme is found to be the availability of market facility and street lights on this issue PHADB states that it is responsibility of PMC to provide public utilities like market and street lights.

6.2.3.6 PROS AND CONS OF THE SCHEME

Cross subsidisation is achieved only through a mixture of income groups by dividing for HIG MIG, LIG and EWS. To cater housing demand for LIG and EWS people by MHADA. It is normally not feasible to provide housing units for the private developers to provide housing units for LIG and EWS class.

The standardised housing layout is dominated by the concept of efficiency, minimum costs and rapid installation does not capture the experience of staying in a large family with a constricted space. Result into the unsatisfactory group of beneficiaries.

6.2.3.7 LAND RESERVATION FOR MHADA

As we are aware that MHADA is the Statutory Authority for state level public housing with emphasis on providing dwelling units for economically weaker sections (EWS) and low income groups of the society. MHADA is having limited land reservations causing hardship, as there is paucity of bulk lands to execute weaker section housing as well as LIG, MIG housing schemes so there should be land reservation for MHADA in DP to ensure supply of land for construction of small and affordable houses. Land reservation for EWS/LIG housing by MHADA in Municipal Corporation with areas minimum 5 ha or 5% of area residential zone in DP whichever is higher can be made available.

6.2.4 RENTAL HOUSING

6.2.4.1 PUNE RENTAL HOUSING MARKET SCENARIO

Real estate sector in Pune has witnessed rapid growth since 2007 due to development of IT sector. Maximum development has continued in peripheral regions due to lack of large land parcels in central locations. Of this, the majority has been concentrated in eastern and western part of the city.

Rapid residential construction which had been taking place in various newly developed pockets like Baner, started to slow due to an increase in vacancy rates combined with increasing prices. As anticipated, IT development in the city did not match the rapid residential development, resulting in lower occupancy rates.

With the increase in the interest rate and still high capital value of residential market even after recession the cost of individual units are beyond the reach of most populations affordability is concern. Hence the end users are shifted to rental market. But due to increased demand in rental residential market the residential market is also reaching to the skyline rental rates which are also becoming not affordable to the common people. With increased migrants for education and employment to the city,

demand for rental housing is always high, as new migrants to the city always demands for rental residential units.

6.2.4.2 TRADITIONAL WAY OF RENTING A UNIT

Mainly Pune's rental estate market is governed by the huge amount of migrants to the city for various purposes many of them are being for the purpose for employment and education. Like a new visitor in the city when looks for a housing unit on rental basis the individual has no other option than a real estate property broker.

Pune's rental real estate market can be divided into two broad categories such as

6.2.4.3 ORGANISED RENTAL MARKET

This are the rental units which are provided by the various registered companies for their employees as a accommodation facility by the company but these kind of unit are very less in number and are mainly reserved for the employees of the company who are working at a higher post in the company an which are always on tour visits on behalf of the company. These units are normally a block of apartment which is owned or leased by the company on contract basis for their employees or it may be serviced apartment. But, there is a segment of young bachelors which are working for company and are migrated from different part of country accommodation facility is not provided by the company and hence this group has to take care of their accommodation by their own. As these segment are newly migrated to the city they always opt for rental housing in the early stage of their life by unorganised rental market.

6.2.4.4 SERVICED APARTMENT

A serviced apartment is a type of furnished, self-contained apartment designed for short-term stays, which provides amenities for daily use. Serviced apartments can be less expensive than equivalent hotel rooms.

Since the beginning of the boom in cheap international travel and the corresponding increase in the level of sophistication of international travelers, interest in serviced apartments has risen at the expense of the use of hotels for short stays. Since the IT/ITES crash, company budgets have been squeezed and since when staying in a hotel one is

paying for facilities such as restaurants and bars which are often not needed, many companies have switched their accommodation budgets to serviced apartments.

Figure 6.23: Service apartment facilities



Serviced apartment are one of the most popular choices for residential accommodation, for many corporate tenants who want to have an extended length of stay from a few weeks to a period of more than three months in metro cities like Mumbai, Pune, Hyderabad, Bangalore compared with the option of taking a standard two year lease in non-serviced residential units or residing in hotels, serviced apartments provides more flexibility and cost-effective options compared to the hotels especially for expatriates working on medium term assignments. Flexible length of lease terms available in serviced apartments not only provides tenants with extra convenience in setting up their business schedules, but also more value added services and hospitality, which are rarely found in standard apartments.

Serviced apartments are more attractive than standard units and the quality of services and the flexibility in lease term have made them so. This is demonstrated by the resilient rental performance of the serviced apartment sector in few years.

The various added services in serviced apartments that normal unfurnished apartments are:

- 24 hrs internet access

- Bedrooms with attached bathrooms
- Television with cable connection
- Air-conditioned bedrooms
- Well furnished dining and living area
- Fully equipped kitchen with Microwave oven, Refrigerator
- Complimentary breakfast
- Inverter power backup
- 24/7 security
- Wi - Fi Broadband internet connectivity¹¹

6.2.4.5 SERVICE APARTMENT DEMAND

Increasing IT, Biotechnology parks, in Pune is appears set to embrace another lucrative business of serviced apartments, while it is a new model for India, it is a well developed business in other foreign countries and many parts of Asia. High disposable incomes, new jobs opportunities and hectic lifestyle, service apartment business will not take much time to mature in Pune.¹²

Service apartments are the latest trend in accommodation for long staying guests, giving them the comfort and convenience of a home without the hassles of having to maintain or look after it. Ideally suited for a medium to long staying guests, service apartment are a natural choice for corporate employee or expatriates relocating to a particular city. A service apartment offer the privacy, space and comfort of a house and at the same time gives you the services and amenities of hotel. Service apartment offers the perfect alternative to hotels for business travelers, holiday makers or visitors. It provides an exceptionally flexible and cost effective way to stay away, with all the homely comforts, as well as the service and facilities of a hotel.

Service apartments have been furnished to very high standards, each with its own unique style and characteristics. They are especially spacious, with accommodation

¹¹ PRLog.Org - Global Press Release Distribution (Mar 02, 2009) 'Service Apartments for Rent'

¹² www.nasscom.org/bponewslne (2006) 'Real estate corner'

ranging from studios to five bedrooms, fully equipped kitchen, lounge and dining rooms as an option. This business works on the concept that a visitor walks into an apartment with nothing but cloths and everything required for daily life is being provided or available on the user demand.

6.2.4.6 CLASSIFICATION OF SERVICED APARTMENT

Depending upon their use serviced apartments can be classified as

6.2.4.7 STAND ALONE DEVELOPMENT

These are exclusively built for the purpose of being let out as serviced apartment, which may be a component of hotel building.

6.2.4.8 MIXED USE

Individual apartments blocks which are designed for individual housing units having commercial and retails spaces included within them or may be which are a component of a larger hotel development. They could be housed on the separate floor as a part of individual building or wings.

Figure 6.24: Typical design of service apartment



Pune has many serviced apartment provider with increase in demand of service apartment many areas like Koregaon Park, Kalyani nagar, Viman Nagar, Baner and Aundh provides facility of service apartment in and around Pune with special offers for companies. Rental service apartment vary from Rs. 6,000/- per month for a small studio

to over Rs. 1 lakh per month for a three bed hall kitchen set depending upon the quality, facilities offered and location. Likewise Delhi has Enkay apartment, Silver Oak as the leading service apartment providers. Mumbai has The Emerald, Chakau Windsor, AB executive service.

Several other services apartment projects are at different stages of completion. Taj Land End in North Mumbai which is not far from Pune coming up with as Wellington news a 96 units stand alone property with one, two and three bedroom luxury service apartment. High rate tariff can be generated from serviced apartment as the facilities and the section served is high end.

As serviced apartment concept gets recognition in Indian cities, investment and expansion in this business model is expected to rise fast.

6.2.4.9 UNORGANISED RENTAL MARKET

Pune residential market is normally governed by the investors and end users only. Maximum gains can be earned by making investment in residential market of Pune due to increasing demand of Urbanisation and development. Hence this attracts many investors to buy property, which is later on floated into rental market to earn profit. As after development of a property till the time when property gains more rate than its rate at the time of development the investors earns profit by renting them. Addition to that if someone has shifted to new house then the old unit is rented out to earn from it. Sentimental attachment to the property is also one of the reason which opens door for rental market, in this case the owner do not want to sell his property due to sentimental attachment although they have shifted to new house. This type of units holds the major share of rental residential market and rented to the user with the help of real estate broker. Real estate brokers normally charges 2 month rent as their fees for making available a housing units which becomes much higher for many people as they can't afford their fees.

6.2.5 TOWNSHIPS

Pune is now coming up with many township projects under Maharashtra township policy 2005 this is resulting into increase in housing stock of Pune by foreign direct

investment through a subsidies way. But as this policy has certain constrains of having a consolidated land parcel of 100 acres these townships are coming in the periphery of PMC or outside of the PMC limit. Till date around 25 townships are registered to be coming up in Pune out of which six of these townships have already started taking shape in Pune.

Table 6.2: Showing details of township at Pune

Sr. no.	Township	Developer	Location	Area (acre)	Total No. of units	Project status	INR psft
1	Megapolis	Pegasus	Hinjewadi,Phase III, Rajiv Gandhi Infotech Park, Pune	150	5800	Phase I	3250 to 3625
2	Amanora	City corporation Ltd.	Hadapsar, Opposite Magarpatta City, Pune	400	15000	Under construction	3500 to 4350
3	Blue Ridge	Paranjape Schemes	Hinjewadi,Rajiv Gandhi Infotech Park - Phase-I, Pune	138	1100	Phase I	3200-3500
4	Nanded City	Magarpatta Township Development and Construction Company Ltd.	Sinhgadh Road, Khadakwasla, Pune	700	5000	Phase I	3200-3500
5	Magarpatta city	Magarpatta Township Development and Construction Company Ltd.	Hadapsar, Pune	430	350	Phase IV	3300-3750
6	Oxford Golf and Country Club	Oxford Properties	Wanowrie, Pune	1300	350	Phase I	7500

Source: MASHAL, Pune. (Information given by respective township sales executive)

- Magarpatta city by Magarpatta Township Development and Construction Company Ltd is the first to take place into township.
- City Development Corporation's Amanora Park Town with its 400-acre with an investment of Rs. 10,000-crore.
- Paranjape Schemes Construction's , Blue Ridge 138-acre, with an investment of Rs 3,200 crore.
- Megapolis, is a 150-acre project by Pegasus Properties Pvt Ltd, a joint venture between Kumar Properties and the Avinash Bhosale Group with an investment of Rs 1,500-crore.
- Nanded city is newly launched township by Magarpatta township development & Construction Company has already sold with its first phase. The second phase and is expected to be launch in December.
- Oxford properties are come up with high profiled end users golf course driven township in which they have started with first phase of only villas in 300 acres area. This particular township is not classified as an integrated township.

The 12,500-acre township Lavasa, by Lake City Corporation, will come up in the backwaters Warasgaon dam area, about 50 km from Pune near Panshet on Mulshi Road. Lake City Corporation has been promoted by Hindustan Construction (HCC), Venkateshwara Hatcheries and Ballarpur Industries. There are a few private investors too.

6.2.5.1 AMANORA PARK TOWN

Amanora Park Town, first integrated township under Maharashtra's Special Township Policy, is located in South-east part of the city on off Pune-Solapur road at Hadapsar, It is 10 km away from the Pune Airport, 3 Km from Pune Camp & 8 Km from Pune Railway Station.

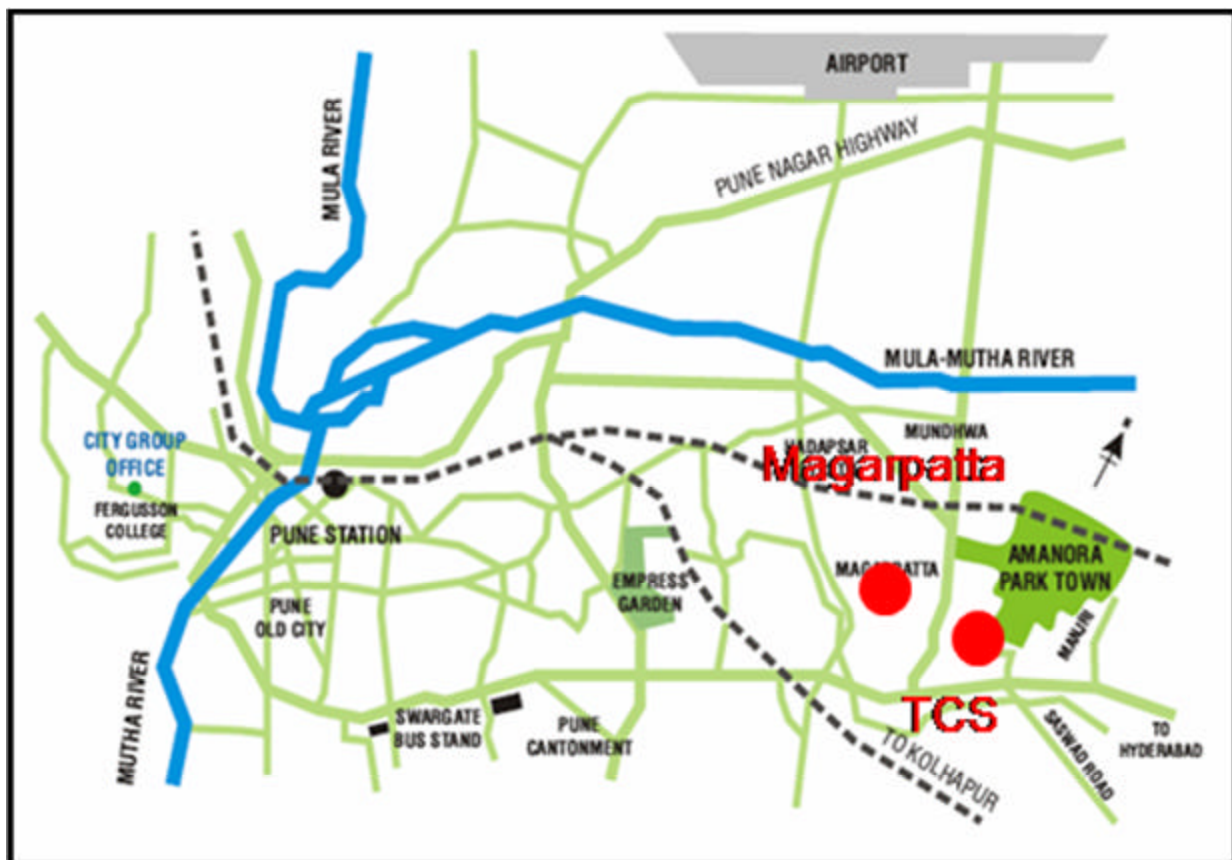
The Site is approached by a 24 M wide Hadapsar-Kharadi, bypass road and it is well connected to the other parts of the city with all types of mode of transport. The site can be identified by the landmarks in the surrounding areas such as famous Magarpatta city, which is just opposite to the site and second major landmark is Tata consultancy Services which is on the same road.

The project is taken up by the City Corporation Limited, an ISO 9001:2000; Company who is a leading Real Estate Developer has, a number of successful, unmarked projects to its name in Pune, and plans to make Township planning its new focus.

The concept of Amanora took roots in 2005, with the announcement of Special township policy the developer took up the privilage to develop Maharashtra's first Special township under Special Township Policy.

The name Amanora is derived from Aman, for Peace, Ora from Aura. The layout plan is based on the concept of Palm, at the center i.e at the depression; water body is placed with green, recreational areas around. The main entrance to the township is on the Magarpatta Kharadi Road. The concept Layout plan has been prepared by Mr Mani Chaurasia, Delhi. Detailed design of first Phase is by P&T. Consultants Pvt Ltd, Singapore. Joint Venture has been done with the International Companies for Market City and Hospitals in the ratio of 60:40.

Figure 6.25: Location of Amanaro township



Amanora Township is surrounded by the agricultural land Northern side, Magarpatta township is opposite to the main entrance on southern side, on eastern and western side along the Kharadi by-pass road private developments are taking place. Amanora is coming up with 15000 housing units and the current price is INR 3500 to 4350 per sq.ft.

6.2.5.2 TOWNSHIP POLICY COMPARISON

Township policy of Maharashtra was made to attract foreign direct investment into housing sector to increase housing stock which will be affordable to common people as the foreign investment was subsidized it was thought by policy maker that the investment will result into affordable housing units for urban people but developers started taking advantage by selling units to much higher cost by the reasons that they are providing more facilities than other developers.

Table 6.3: Comparison of township policies EWS and LIG reservation clause

MAHARASHTRA	GURGOAN	GUJARAT
10% of the total floor area shall be built for residential tenements having built up area up to 40 sq.mt.	Provision of 25 % of stock for EWS housing	EWS housing to be provided for which complimentary built up area will be given.

From table it can be concluded that Maharashtra township policy states that there should 10% of total floor area shall be built up of size 40 sq.mt. which will ultimately serve to LIG class while Gurgaon policy directly states 25% of units stocks should be built for EWS housing and Gujarat Policy states that the area of EWS housing provided will facilitate complimentary built up area this will result into more EWS units in Township.

Township policy has not benefitted the Urban Poor. Economies of cross subsidization are only possible in such projects where non housing remunerative components can help in reducing the costs of affordable houses. To make Township Policy more oriented to Affordable component, total floor area to be allocated for tenement having 40 sq.mt. Built area should be raised from 10% to 20% at least.

6.3 INFORMAL / UNPLANNED HOUSING

6.3.1 SLUMS AND SQUATTERS

6.3.1.1 BIBWEWADI LOW INCOME SHELTER PROJECT, PUNE

The Bibwewadi project involved the provision to low income families of an opportunity to shift voluntarily from a large squatter area on a hillside of Pune to a planned site with basic environmental services. Most important security of tenure and possession is guaranteed. Various initiatives taken and conclusions drawn from the situation of the project it is hoped could serve as building blocks of a more effective urban development management system in this future.

6.3.1.2 BACKGROUND

The slum improvement and up gradation program in 1983-84, benefitted a total population of 2, 82,000 person at a total cost of Rs. 671.81 million. Of this amount around 59% was contributed by the government of Maharashtra State Government through the Pune housing and area development board, a subsidiary of the Maharashtra Housing and Area Development Authority.

Even after having spent such a large amount all over the city, it was found that some slums could not be provided with basic services for various location specific reasons. These slums were either located on steep hill slopes or in very low lying areas on sides of natural drains. The settlement on steep slopes could not be provided with water supply, sewerage or pathways. Besides the fact that it was not possible to provide service to these slums, many were located along the Mutha right bank canal which brings drinking water to the city and the cantonments. Because of the lack of piped water supply slum families rely on the canal as their main source of drinking, bathing and washing water. Lack of toilet facilities has led to the canal embankment being used for the purpose. In the settlements located on the on the banks of natural drains, every rainy season brings extensive flooding, fear of disease and other health-related problems. Building of retaining walls etc. has also not stemmed these problems. Low lying areas are difficult to drain and service facilities, requiring connection to existing sewage networks are impossible to install.

The population in these unserviceable slums on Parvati hill area, Gultekdi, Hadapsar was 50, 670 persons in 1983-84. It was apparent that such a large population could not be left unserved. This led to the idea that seven of these settlements should be rehabilitated elsewhere in well planned and laid out communities on serviceable lands, earmarked land under for low income housing in the Pune Development plan 1982. It was decided to rehabilitate the above population in the Bibwewadi and Dhankavadi areas of Pune city where a majority of the earmarked land under low income housing was available.

When the project began, the initial concern of the Pune Municipal Corporation was the pollution of the Right Bank Canal and a middle class dislike held by decision makers for 'slums' in general. The Municipal Commissioner of Pune at that time held a categorical view that all the seven slums on Parvati Hill should be totally shifted. It is important to note that the Municipal Commissioner evolved his own thinking, as did most of the administrators and engineers, through their interaction with the people of Parvati Hill. While critics have tried to use these initial attitudes to present a picture of a solidified, stubborn bureaucracy, the actual facts show that there was a great deal of change in official thinking and awareness. It is true, however that in the beginning, the concept was to shift the approximately 10, 600 household to Bibwewadi.

6.3.1.3 STEP BY STEP PROGRESS OF THE PROJECT

In March, 1983 project work commenced with the formulation of conceptual framework. At very first it was decided that the project would follow a leasehold system wherein each beneficiary would be provided a plot of land on a 99 year lease and the housing components were also more or less fixed. It was decided that each plot would have a core unit of one room, toilet facility connected to the city's sewer system, individual water connection, and electricity. Also, decided to survey the settlements, catalogue the existing units and their occupants. A photopass was to be introduced for documentary evidences as the scheme was to be restricted to selected residents of the slum settlement.

The mayor of Pune held the first meeting of all the elected corporate of the city, members of the state legislative Assembly from the city and other official to discuss the

rehabilitation project on July 1983 prepared by the Corporation. Members of the standing Committee of the Pune Municipal Corporation and other members were present in the meeting approved of the project.

The rehabilitation project, after several revisions, was sent to the state Government for approval on August 1983. The main items which required government approval were the investment pattern and sources of finance. The Corporation expected about Rupees 12.2 million from the Maharashtra Housing and Area Development Authority, thought the state Government, under their sites and services schemes the proposal also requested the Government to sanction a grant of Rupees 9.8 million as a special case towards this project.

In September 1983 project got approval from the state government of Maharashtra.

So next step taken by the Pune Municipal Corporation on October 1983 and 60 hectors of land out of total 350 hectors identified for low cost housing in the Pune Draft Development plan were inspected and selected for the rehabilitation project. All these 60 hectors were located in the Bibwewadi and Dhankawadi area. The 60 hectors land were acquired and compensated later in the following manner.

Table 6.4: Land details for the project

Type	Area in Hectares	Approx. Amount of Compensation Rs.
a) Land declared 'surplus' under the urban Land (Ceiling and Regularisation) Act.	15.85	1,585,000
b) Land under Ex. Patil watan Land	10.71	1,079,000
c) Private owners	33.91	33,000,000

The Pune Municipal Commissioner approached the Collector of Pune for the demand of these lands under the Bombay Land acquisition Act of 1948.

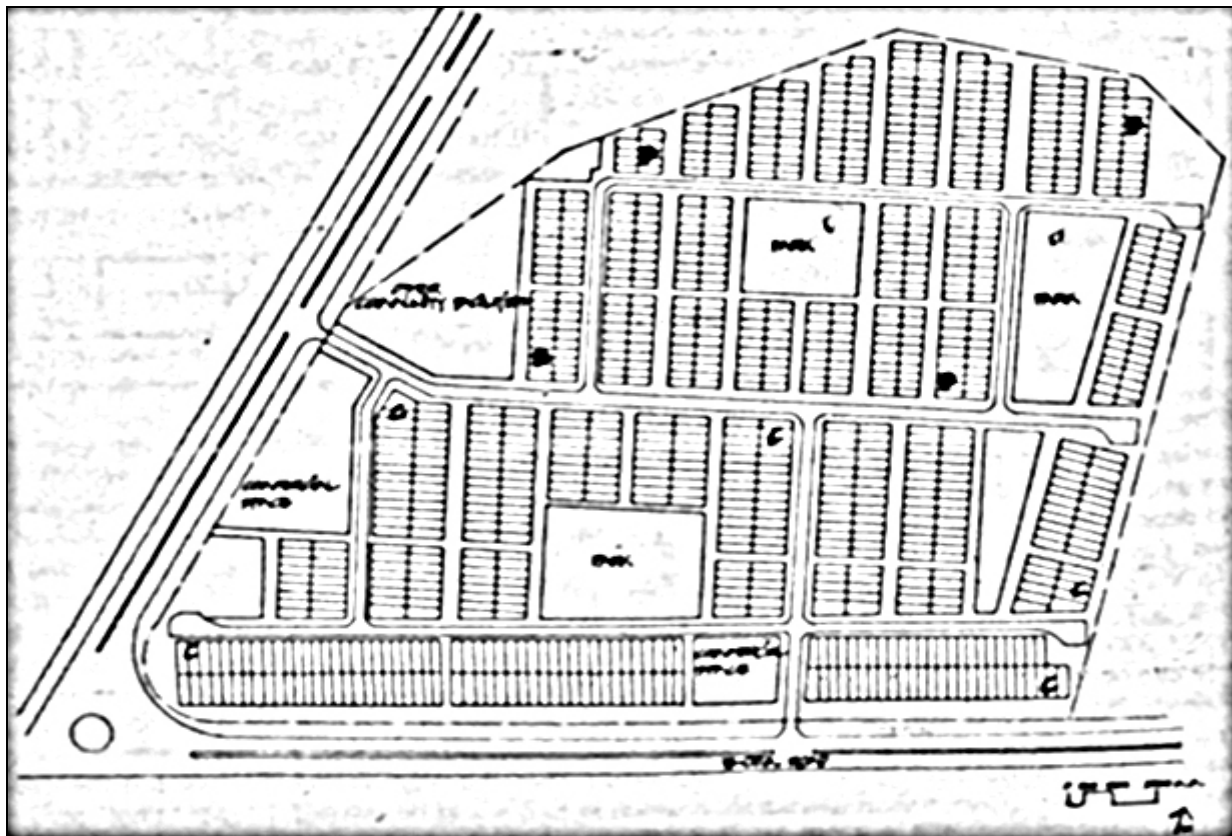
A survey of selected settlement for the project was started and completed. About 700 employees of the Corporation were involved in this operation. Identity cards were

involved in this operation. Identity cards with photographs were issued to nearly 11,000 households from the selected settlements on November 1983.

Detailed survey of the settlement had generated interest as well as protests from various sections of concerned Pune authorities and citizens. An official announcement of the project was made public on December 1983. Several concern groups arranged the protest marches. The Municipal Commissioner of Pune and the entire slum division of the Pune Municipal Corporation held a series of meetings and explanation gathering with the slum dwellers to convince them of the project merits and the benefits that would accrue from it.

The commissioner of Pune started hearing cases on land requisition for new, legal sites. The first order for land acquisition was passed during this month and the Pune Commissioner was asked to acquire about 27 hectare of land.

Figure 6.26: Showing layout plan for Dhankavadi site



After that Pune Municipal Corporation announced an architectural competition for the design of low cost dwelling units and layout plans. Several local architects and planners participated. The Pune Municipal Corporation and the Pune architects, engineers and surveyors Association jointly contributed the prize money for the best designs.

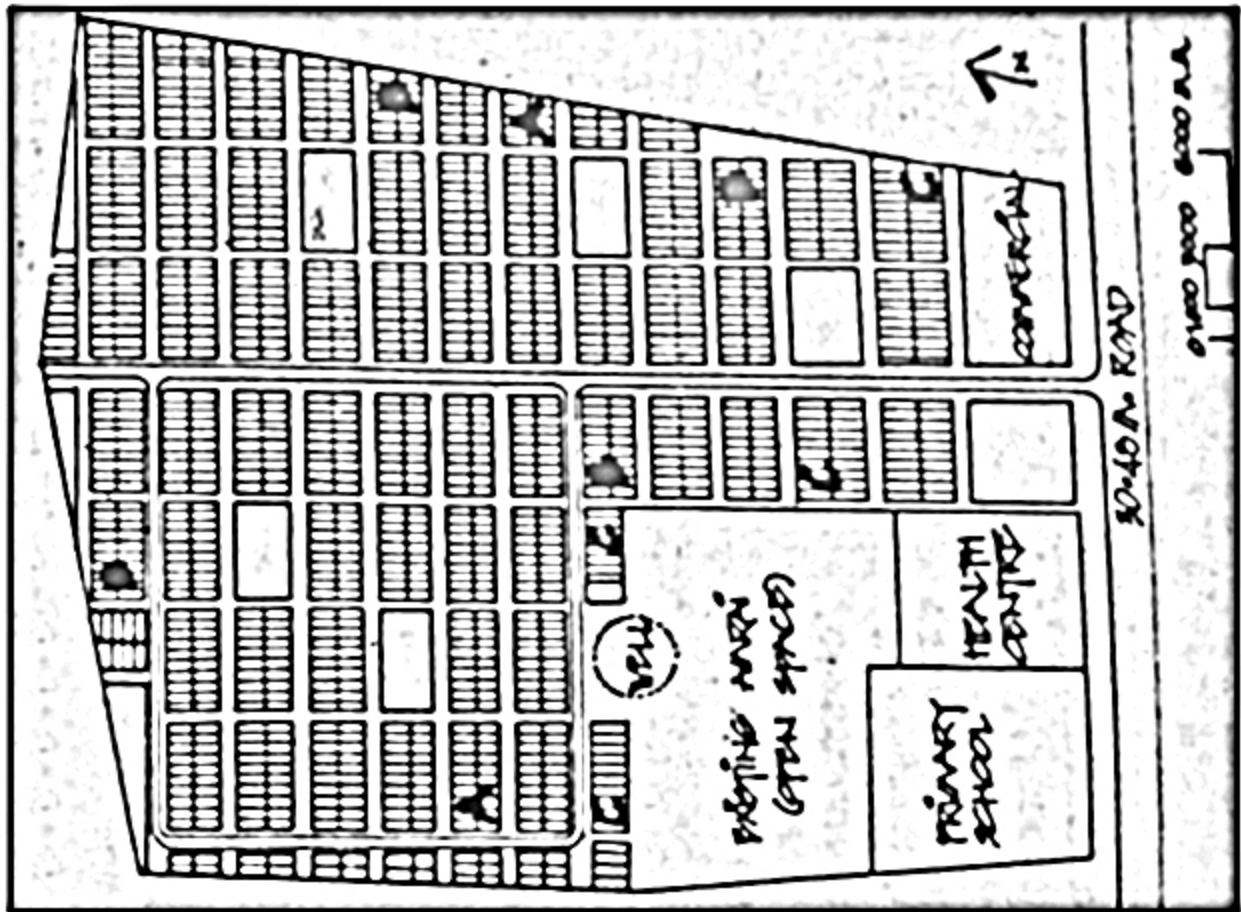
Project was inaugurated by the Chief Secretary, GOM on 19.03.1984 site development and extension of trunk services to the new sites were started. The total investment in extending drinking water lines and main drainage lines to these areas was estimated at around Rupees 15.30 million. About half of this amount was envisioned to be recovered from the beneficiaries. Land development and provision of amenities were also started during this period. These works included construction of roads and lanes, laying individual drinking water taps, extending internal drainage lines, street lighting, land leveling and developing gardens and parks. An amount of Rupees 34.40 million was estimated towards this expenditure. About fifty percent of this expenditure was expected to be met from reimbursement at the rate of Rupees 1,600 per beneficiary as betterment charges.

Dwelling unit design and layout plans were finalised with the help of the director town Planning, Maharashtra State and the consultancy cell of the Housing and Urban Development Corporation (HUDCO). Before finalised the schemes it was decided to have three types of plot-type A with an area of 25.6 sq.mt. Type B with 28.00 sq.mt. and C Type with 37.12 sq.mt. An average density of 147 dwelling units per hectare was achieved.

For construction of dwelling units with the help of competition entries, tender notices were advertised in local newspapers for the selection of building contractor to take up 'turn key' jobs. Three offers were received of which Messrs. Buildwell construction company and Messrs. B.G. Shirke and Company was selected. The construction consists of one room of 12.65 sq.mt. Carpet area and 0.90 sq.mt. latrine. The latrine is not provided with the door and the roof M/s. B. G. Shirke have used a six inch pre cast slab with full water proofing treatment and the walls are six inch hollow cement blocks. Cement tiles are used for flooring. Messrs. Buildwell Construction Company offered a traditional design where bricks were used for walls; cement tiles for flooring and

asbestos cement sheets or galvanized iron sheets for roofing. During this period all the land requisition cases were cleared and the orders were passed to the Corporation also approached the Housing and Urban Development Corporation for Housing loans to the individuals.

Figure 6.27: Showing layout plan for the Lower Indira Nagar Site



During the period of May-June 1984 two sample houses were constructed on the site and the beneficiaries were asked to see them and give their preferences. The beneficiaries visited the site in large numbers and saw the samples for themselves. The beneficiaries were also given detailed specifications of the structure selected, the cost, the layout of the plot and the room that would be located on this plot. They were also told that they would be allowed expand the existing structure on the rear portion of the plot. Interested beneficiaries were told to open non-withdrawal bank accounts with the Bank of Maharashtra and deposit the initial down payment. The down payment amount as shown in the table for the plot and the house varied from Rupees 3,000/- to

Rupees 4,250/- per unit. About 3000 slum dwellers gave their preference and opened accounts in the prescribed bank.

Messrs. B.G. Shirke was asked to build 1000 units and Messrs. Buildwell Construction Co. was asked to build 1600 units. Last order for takeover of land was passed and joint land measurements of additional site were carried out. Land for acquisition was notified. Negotiations with HUDCO and the Bank of Maharashtra were completed and the first installment of Rupees 0.69 millions, was received by the Corporation towards housing loans to individuals. It was decided that HUDCO would give the loan to the Corporation which in turn would be passed on to the Bank of Maharashtra for disbursement of individuals. The Bank of Maharashtra was contracted to collect the repayment of the installments from the individuals and pay back these amounts to HUDCO with a nominal commission. Such an arrangement towards housing finance management was the first of its type in the Country. The loan available to the beneficiaries was based on HUDCO pattern in which 80 per cent of the total cost of the house is the loan portion at the rate of eight per cent per annum with 15 years of repayment period. Repayment installments vary from Rupees 33/- to Rupees 96/- per month. The Bank has also employed persons who if necessary visit the beneficiaries and collect their installments. So far there are no defaulters.

December 1984- January 1985:

- Total number of beneficiaries who opened accounts in the Bank – 5,384
- No. of persons who have paid more than fifty per cent of the down payment – 1,800
- No. of beneficiaries who paid more than Rs.500 but less than 50% of the total down payment amount – 2,090
- No. of beneficiaries who paid less than Rs.500/- towards down payment - 664
- No. of beneficiaries who paid full down payment amount – 830
- Total amount paid by the Beneficiaries – 10,530, 260
- Total number of beneficiaries interviewed - 1,284

- No. of cases sanctioned and loan disbursed - 766
- No. of cases sanctioned but kept pending as the houses were not complete - 376
- No. of rejected cases - 118
- No. of cases under consideration - 24

The Pune Municipal Corporation through Department of Revenue and Forests managed to obtain exemption towards payment stamp duty and registration fees by beneficiaries. This would, on an average, give a benefit of about Rupees 300/- to Rupees 400/- to each beneficiary.

On February - March 1985 Pune Municipal Corporation requested the Social Welfare Department, Government of Maharashtra to give subsidies and sanction loans to backward class slum dwellers under the P.W.R. 21 Scheme. During the period from March 1985 to April 1986 about 360 slum dwellers were given subsidies of Rupee 2,500/- each.

Table 6.5: Details of the housing units constructed by the different Builder

Site	Houses to be constructed		Houses constructed & occupied		Total Completed and occupied
	M/s. B. G Shirke & Co.	M/s. Buildwell Const. Co.	M/s. B. G Shirke & Co.	M/s. Buildwell Const. Co.	
Total	3276	1660	3276	1660	4936

Source: PMC, Pune.

4936 households had shifted to the above new housing sites during this period and 289 houses were incomplete. The households at the time of taking possession of the new houses were required to pull down the existing structure themselves and hand over the vacant possession of the land under occupation of their structure. This was irrespective of whether the beneficiaries were tenants of the existing hut or not. The beneficiaries were allowed to take their building materials to the new site for house extension work.

They were supplied with municipal trucks to shift their household goods and building materials. The beneficiaries paid only diesel charges.

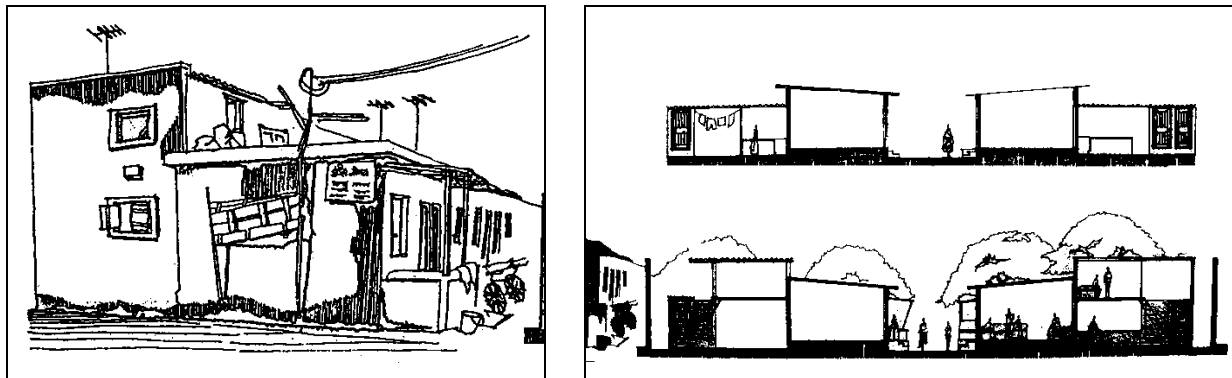
400 developed housing sites were also made available to those beneficiaries who could not afford to have a built dwelling unit. 42 households had taken possession of these sites and with the help of their old housing materials; about five households had re-built their houses.

6.3.1.4 HOUSING

All the households who have shifted or who are about to shift originated from slum settlements. Majority of these, households lived in semi-pucca houses. In their old houses some walls, flooring, or roofs were made of permanent building materials. These houses were built over a 10-15 year period or had been rented over that period.

A sizeable percentage of the old houses were "pucca". The walls, floors and roofs were constructed with permanent materials. A substantially large number of houses were "semi-pucca", that is, at least two of the three components were of permanent materials. Thus, it appears that acquiring a pucca house was not a key factor which could discourage participants to shift. Legal ownership and security of tenure were most important.

Figure 6.28: Showing housing unit and section provided at Indira Nagar



The fact that most walls which were 'pucca' were made of mud mortar with brick and roofs of tin sheets or tiles may have also played a role. These materials can easily be disassembled and shifted for improving or expanding the new house.

In the case of the nonparticipating group, those having pucca and semi-pucca shelter components have invested most of their funds in their present shelter. Whenever possible they borrowed money or took loans to upgrade their houses. Today they have no sources left for down payments. They are hesitant about the HUDCO loans. Bibwewadi project has made them aware of prospects for a more secure tenure and better housing with services on a planned environment. However, Investments of non participants in their existing shelters have contributed to the increased market value of their houses. The market values represent the money which would be paid to these households as a "consideration" for vacating and handing over their possession to new dweller Prime location and pressure on the low income housing market appear to be the main factors which have pushed up these values, which are now out of the low income range. Table fourteen also indicates that there is a substantial number of nonparticipants not because of their poverty but because of their relative wealth. Substantial investments made in their hoses including operating shops or businesses in their houses have rendered a shift to the rehabilitation project uneconomical.

6.3.1.5 CURRENT SCENARIO – CASE STUDIES

A random sample survey study is taken along this area and people interviewed. After talking to them many things came into focus regarding the past and present situations faced by the people living there, about the facilities and approaches taken by PMC for provision of amenities etc.

Figure 6.29: Showing current development of Bibwewadi housing



6.3.1.6 SMT. USHA SUHAS GADWE

She is now a resident of Upper Bibwewadi lives along with her two sons, daughter in laws and grand children. She is happy with her life style over there and gives thanks to PMC for incorporating such a project. She was living in Kasba Peth after her marriage along with her in laws. Later on she with her husband shifted to Janata Vasahat. She remembers her days of struggle at Janata Vasahat, she use to fill water from the canal which had a tuff path to travel and that to along with the filled vessel. She had to fall many times. Her family growth really started at Janata Vasahat. She wished to have an own house. This dream came true in 1984 when she and her husband were convinced about the new habitation or say rehabilitation at Bibwewadi. They had to pay Rs. 3000/- as down payment to take possession of their new house. They had to pay an EMI of Rs. 250/- to Rs. 300/- which was not possible for them due to their low income. Later on they planned to buy a rationing shop of their own, for this reason they had to clear off their loan amount of Rs. 11,000/-. They cleared it off immediately and got their new shop. She is now renovating her old house into a three storied building, which will provide space for her growing family. For time being she has taken another house on rent of Rs. 2500/- per month. Her both sons and daughter in laws are earning. According to her the two basic problems the locality facing are low pressure of water supply and existence of Chaitraban slum, which is causing nuisance for them. Every lane hires a lady for cleaning the common road. Also there was a lagging in the planning of the whole area about the open space; small kids are not having play ground. Passage between the two buildings is being used for the same purpose.

Figure 6.30: Showing current development of Bibwewadi housing



6.3.1.7 MARUTI NAVELKAR

Along with his wife Suma is living at Bibwewadi since 1986. They enrolled their name the Bibwewadi Scheme by paying Rs. 3000/- only. They got an area of 300 Sq. Ft. in 1986. He is working in Pat Bandhare Department, PMC. He has not made the re-payment of the loan given to him while taking this house. He still lives in the old house with some modifications made. He does pay the yearly taxes and electric bills. His wife is happy about the local amenities provided. The reason behind not paying the balance loan he says that he is the only member earning and there are 5 family members depending on him.

6.3.1.8 BORUDE BHAGWAN PUNDALIK

Resident of Bibwewadi Scheme stays here since 1986, He use to live at Parvati slum area. His wife use to sell dry fishes in that area. When he enrolled his name in this scheme his wife felt very sad to shift to Bibwewadi as she would lose her business. After coming to Bibwewadi she started making some household items and sold them in the nearby shops. Bhagwan started working as a driver after coming to stay at Bibwewadi. They are satisfactory regarding the amenities provided by corporation. He has not been able to repay the loan as there are many members depending on him alone.

6.3.1.9 MRS. PREMA GOSAVI

Mrs. Prema Gosavi and her husband own their house in Bibwewadi Scheme since 1990. They use to live in Hadapsar area where the rent was very high for them to pay. After hearing about this scheme they enrolled their name. Due to some family problems they could not shift to their own house. In 1990 they shifted here. In the beginning they couldn't make for the payment of the loan as they had to face financial crisis. Later on they applied for business loan in the Ramrajya Society established by the Bibwewadi scheme people. Their loan was sanctioned and they started welding business. This was their growing period in life by which they could re-pay their loan amount as well as rebuild their existing house. Now their two sons also look after the business. They regularly pay electricity charges and taxes. They pay about Rs. 1000/- per year as tax.

6.3.1.10 SMT. MANISHA P. UTMARI

Smt. Manisha P. Utmari lives here since 1986. She and her husband started this business of paper bags first. They use to supply these paper bags to the nearby shops. Later on they started making envelopes. Now as the polythene bags have replaced the paper bags, they only make envelopes. They own a 300 Sq. Ft. house and have constructed its top floor. Later on her husband died. Smt. Manisha was left alone with their only daughter. Taking care of her daughter and the business, Smt. Manisha faced many problems but she re-paid the whole loan amount. Now her daughter also looks after the envelope business. They have reconstructed their house and have many facilities like gas geyser, dish T.V. They regularly pay their taxes.

6.3.1.11 SANDEEP NANAWARE (BIBWEWADI, OTTA SCHEME)

He came with his father and mother to Bibwewadi when he was a child. His childhood days were very happy days says Sandeep. He use to help his mother to fill water from the common tap nearby his house. This was very years ago, now they have separate tap connection in each house at Bibwewadi. His father working as a barber during those days had very less income. Sandeep had to complete his school education from Bibwewadi Corporation School, which was also at far distance. He had to walk about one to one and a half kilometres from his house. His father had taken this otta by paying Rs. 600/- as an advance or say down payment. He got 250 Sq. Ft. area on which according to his income he built a kaccha house of mud walls and a tin slab. Later on they developed their house by modifying slowly and slowly. Now Sandeep also works as a barber in that area. Sandeep's father is happy to stay here, which is much better place than Janata Vasahat where he could have spoiled Sandeep's future. Now Sandeep along with his father, mother and his wife stays happily at Bibwewadi.

6.3.1.12 ANKUSH DHARVARKAR (BIBWEWADI, OTTA SCHEME)

Ankush Dharvarkar stays in his house with his wife since last 20 years. He purchased this house from Mr. Durve for Rs. 5000/- , 20 years ago. He was staying first in Kasba Peth. He does not remember his parents as they died in his early childhood. He was brought up at his relatives place where he used to distribute newspaper in the morning. Then he worked as a helper at a small hotel in Kasba. While doing all this he completed his studies and learned electrician jobs as he was growing. Now he works as a fitter. Twenty

years ago he borrowed this Rs. 5000/- from many people and took this house of his own. Today he is happy about his decision taken twenty years ago. He has re-paid all the amount borrowed. He is happy to have his own house in such a locality with all the basic facilities.

Figure 6.31: Showing lack in parking facility and development of Bibwewadi housing



6.3.1.13 BHIMRAO KANADE (BIBWEWADI, OTTA SCHEME)

Twenty six years ago Bhimrao Kanade, his wife Sita and their eldest son lived in Kasba Peth in the heart of the city in a rented room. He used to work in a workshop over there. As the rent over there was more which they could not afford, they shifted to Janata Vasahat in 1984. Bhimrao couldn't find a job easily near-by so he continued to come to Kasba Peth. Sita started selling sweets and other item in near-by place. In 1984 they came to know about the rehabilitation scheme and decided to enroll their name. Bhimrao opened an account in Maharashtra Bank and started paying the down payment amount. He could make the Rs. 3000/- as down payment amount which allotted him his own house at Bibwewadi. This period was very difficult for the family as they had to cut short their necessary demands for saving money. Sita had to also work very hard and also take care of her two sons. In 1986 they shifted to their own house with a very happy heart. Bhimrao also got his new job in a private company. He also re-paid the remaining amount by monthly EMI of Rs. 200/- to Rs. 250/-. Slowly and slowly they renewed their house. Today they are happy and satisfied about their present situation. Few days efforts in the past could show them today's day. Now Bhimrao and

Sita are grandparents of two children. Both his sons and daughter in law are working. The Kanade family is very happy in this Bibwewadi Scheme.

6.3.1.14 EXISTING HOUSING CONDITIONS

Primary survey has done to observe the existing housing conditions at these three locations where relocation was done to analyse how the occupants has evolved their housing demand by constructing housing unit above the provided ground structure to cater their extended families housing demand.

From above analysis it is clear that 68% of the HH has constructed additional housing units above their ground structure which was provided by PMC. Density has increased tremendously, 488 HH/ha at Lower Bibwewadi to 522 HH/ha at Upper Bibwewadi. FSI consumed at plot level has also increased which is found to be more than 1.

Table 6.6: Existing scenario at relocations sites at Bibwewadi

Parameter	Lower Bibwewadi	Upper Bibwewadi	Dhankawadi
Land Area (sq.mt.)	44200	35700	36900
Total HH Surveyed	1209	1011	799
No. of HH converted to (G+1)	773	819	474
No. of HH converted to (G+2)	88	17	193
After extension Total No. of HH	2158	1864	1659
Existing built up area (sq.mt.)	64740	55920	49770
Ground Coverage	82%	84%	64%
Density (HH/ha)	488	522	449
FSI consumed at Plot level	1.46	1.56	1.34

Source: Primary survey, MASHAL, Pune

6.3.1.15 LESSONS FROM THE STUDY

The urban poor have been recognized as contributors to the economic, social and political life of the city. Their low wages subsidize the development of an emerging, modern industrial nation. While contributing through their low income they have been excluded from access to shelter as they have not been able to afford the costs of land, construction cost, shelter and overheads explicit in our existing urban development management system. The Bibwewadi Project is a courageous attempt to explore, through "action planning" a new formula. Indeed it throws light on the possible elements of a new, appropriate urban development management system which is capable of

including low income families in an orderly, affordable and legal growth pattern. It also indicates where greater understanding about the urban poor is required. In a society where about fifty per cent of the people live in "illegal" shelter and these same persons democratically elect the local government charged with controlling urban growth a contradiction generating urban decay and confusion is inevitable. What is important about this project is that it recognizes and deals with a range of issues and problems which at first glance appear to transcend the squatter phenomenon. The In depth study, of this project reveals the essential elements of an urban management system and its capability of making shelter accessible to the poor. These elements have been stated in the form of lessons from which we can learn and move forward. Thus, the project has significant repercussions on the future pattern and quality of urban life.

6.3.1.16 PEOPLE; NOT SLUMS

People are placed first in this project, not the housing units nor the slum scheme. There was active interaction which encouraged participation in decision making and exchange of information between the participants and the Pune Municipal Corporation. In many cases meetings were held between the Municipal Commissioner and the participants. On a weekly basis there were meetings with the people in their slums to discuss problems and to seek clarifications. This pattern evolved from an initial top down approach to one of constructive interaction.

6.3.1.17 UNBIASED TRADE-OFFS

The project involves unbiased trade-offs through land readjustment, compensations and subsidies wherein:

- a) The people gain ownership of well-developed plots which they could never have been able to obtain;
- b) The original owners, whose lands were stolen by slum "developers", receive compensation under the provisions of the land acquisition and land ceiling acts;
- c) The Municipal Corporation acquires land for public housing in return for its efforts;

Thus while the project has focused on ten thousand six hundred low income families, it takes a holistic view of legitimate interests involved and addresses itself to each.

6.3.1.18 CITIZENS NOT SQUATTERS

The project creates landowners, tax payers and in fact "city citizens" out of persons who were victims of slum lords, totally lacking security and with no civic responsibilities. Ownership of a plot and a house is a base from which the economic and social advancement of these participants proceed for the first time they are free from control of criminal elements who collected protection fees in the name of rent new status has been attained in the form of land ownership and a new opportunity to raise the level of development of one's own shelter on a secure ownership plot. Persons whose previous image of local government was that of a threatening body now see it as an agency which is a facilitator and to whom they have responsibilities.

6.3.1.19 GUARANTEED SHELTER

The project involves a guaranteed shelter. The participants shift in phases as their new homes and sites become available, not spending a single night without a roof over their heads. No police power or coercion is used to force any one to leave his house. Everyone who shifts moves in directly to their new home':

6.3.1.20 FROM EXPLOITED TO COMPENSATED

Slum dwellers are often doubly exploited. On one hand since the poor have no legal shelter opportunities they are forced to squat in schemes developed by persons to whom they pay rents or "protection money" On the other hand they lack security of ownership they live with a constant fear of demolition as they know plots and houses are illegal. In traditional "slum clearance" schemes they are exploited, a second time by being physically evicted and their shelter investments destroyed. In the Bibwewadi project the squatters' existing investment is recognized and protected through provision of transport to shift their building materials. Access to a long term, low interest loan is also a compensating facility.

6.3.1.21 FACE IN THE CROWD

The project recognizes that the hutment families are not faceless numbers, but that a range of needs and means exists within poor households. This recognition is officially expressed by

- a) Shifting in different phases;

- b) Making participation in each phase voluntary;
- c) Offering a range of choices from a completed house to a serviced plot.

This allows each family to judge the proper time and affordability for change. By starting with the higher range of affordability, the poorer families who are more sensitive to risk gain confidence from seeing the effectiveness of the scheme as better-off households participate successfully.

At the same time it would be advisable to open some of the lower options at earlier stages to expand choices and to make these choices more visible. The findings of CDSA's surveys, presented earlier, indicate that "nonparticipants" are primarily those who cannot afford the new scheme. Greater understanding is required of the wide per capita income ranges amongst the poor and the appropriate actions required facilitating participation of each sub-group.

6.3.1.22 ADEQUATE ENVIRONMENTAL SUPPORTS

Figure 6.32: Showing current evolution of housing units into amenities Bibwewadi housing



The participants now have "user-end" access to critical environmental supports. These include:

- a) Potable water;
- b) Sewerage and sanitation facilities;
- c) Bathing places;
- d) Solid waste disposal;

- e) Storm water drainage;
- f) Street lighting and electrical connections; (g) paved approach paths; and,
- g) Basic health care

These environmental supports are envisaged to reduce mortality rates, significantly reduce morbidity levels and increase the expectancy of participants. These effects could be amplified by supporting a committed voluntary agency which could also increased access to skill development opportunities and employment information.

6.3.1.23 APPROPRIATE LOCATION

The location of the new plots is in a similar zone of the city as the one where participants presently live. It is an area which has proven to be conveniently sited for low income groups. It is near low skill employment centers, the district market and mass transport arteries. Obviously, the selections of sites for such a large population were not easy. Considering site constraints and potentials the choice of Bibwewadi & Dhankavadi site was made accordingly and has proven to be favorable to the low income families. There are many factors however which indicate that smaller clusters of sites in dispersed locations would have been more advisable. The users would have had more choices in optimising their accessibility to work and social services.

6.3.1.24 EFFICIENCY AND EFFECTIVENESS

The speedy and smooth running of the project reaffirms confidence in the local authority. It supports the concept of law working people as

- a) Original land owners were compensated for their lost properties;
- b) Civic organizations replaced gangster s-m
- c) Various procedures were carried out without delay and with due public notice and hearings;
- d) No false promises were made;
- e) Action substantiated words.

6.3.1.25 COMMUNITIES AS SUPPORT SYSTEMS

Communities of the poor have interdependent social relations from which they derive economic and social security. In this project the members were not dispersed to different locations in odd corners of the city but as a group who has obtained a new "home land" They are no longer dependent on paternalistic politicians and "charity" from social worker. As they shift they rediscover their former neighbours, friends and relatives. The process of participation and change has generated a self-organized and indigenous leadership. However, as the richer and more capable members of the community leave their old slums, the poorer 'families who stay behind will be more subject to external exploitation.

6.3.1.26 LAND SUPPLY: CODE WORDS FOR ACCESS TO SHELTER

The project acts as a mechanism of land supply for shelter. Because of the speedy operation of the land acquisition machinery, original owners of land did not lose in compensation made on the basis of its value on the date of the project's announcement as opposed to the reduced value of that amount at the time of actual acquisition. This enhanced the creditability of government and demonstrated the potentials and effectiveness of land acquisition. The land at the new site was readjusted into affordable, serviceable plots. Through relaxed standards a number of adaptations appropriate to the needs of low income households can be made on the plots.

6.3.1.27 FINANCING SHELTER FOR THE POOR

The project provides institutional finance to the poor. Through the co-operation of HUDCO long term, low interest loans were made available. The Bank of Maharashtra acts as a facilitator being a local institutional body which can more effectively collect payments and manage accounts. These institutional mechanisms have been further strengthened by integrating various grants and subsidies made available to disadvantaged social and economic groups. In addition the participants, for the first time, have basic assets and equity upon which to participate in the institutional financial system for their economic up lift. A great deal, however, still needs to be done to make finance more accessible like,

- a) Loans must be made available to purchase shops and work places. Many, families who require loan facilities are not being reached, even though such structures have been built.
- b) Wage earners are finding it difficult to obtain loans due to conservative banking procedures even though these loans are fully guaranteed. Salaried households have found it relatively easier to obtain loans
- c) The cost of documentation required to obtain subsidies can amount to ten per cent of the cost of a serviced plot. Such procedures must be simplified
- d) More flexible range of loans should be marketed by banks including,
 - I. "Telescoped" loans in which payments are lower in the initial years and higher in the last years. This would allow repayment, of secondary loans for the initial deposit and other "settling - in" expenses. This would reflect inflation and growth of real income over time more effectively.
 - II. Small, short term loans, with high interest rates and no collateral would be welcomed as this pattern would allow families to benefit from opportunities which arise such as the serviced plots.
 - III. Loans for self help building on serviced plots should be made available.

6.3.1.28 PROFESSIONALISM IN GOVERNMENT

The project is an example of using professional administrative methods, urban planning and management supported by local politicians. This is a noteworthy case of a local authority functioning for the best interest of all its citizens in a constructive manner. It represents a welcome breath of fresh air and a change of style in the functioning of local bodies wherein personal and vested interests often take priority over public goals and objectives. Moreover, the scheme serves as an example of action planning wherein key goals of providing the poor with secure land tenure, basic services and self determination are achieved through appropriate relaxation of standards and procedures. This can be seen as a preview to new appropriate development management systems which support orderly growth of the city within a predictable structure.

6.3.1.29 CO- ORDINATION

Another lesson from the project was the effective co-ordination between diverse legal, financial and administrative institutions. This represents a maturing of government as end results were put before bureaucratic rules and procedures. The Punjab Municipal Corporation, the Maharashtra Housing and Area Development Authority the Revenue branches of the Pune Division and the Pune Collectorate the Departments of Urban Development. Co-operation and Social Welfare (Government of Maharashtra) the Housing and urban Development Corporation (HUDCO) and the Bank of Maharashtra all have worked together on the project. Each opened their doors to co-operate with the others.

Development, Co-operation and Social Welfare (Government of Maharashtra), the Housing and Urban Development Corporation (HUDCO) and the Bank of Maharashtra all have worked together on the project. Each opened their doors to co-operate with the others.

6.3.1.30 INTEGRATED PLANNING

The scheme is an integrated project incorporating ration and convenience shops, basic health services, primary education, recreational facilities and adequate public transport linkage. It is adjacent to the district market, burgeoning small scale industrial estate and is within a medium scale industrial zone. A special cell has been set up by the Pune Municipal Corporation to facilitate the development of shelters by their new residents. The site planning approaches required for high density, low income settlements leave much to be desired. More care should be focused on the use of open spaces, design of clusters and planning of a hierarchy of public spaces and functions. Comparatively low densities have resulted in more burden in the form of land payment being charged on each household.

6.3.1.31 LABOUR: INDIA'S SURPLUS RESOURCE

In the first phase several types of house designs were completed in record time by competent builders using industrialized, mass housing techniques and efficient management. The approach uses scarce capital and involves greater overheads and profits as cost components. As opposed to this, a system using self managed and self

help construction by the people themselves would have been more appropriate. Sites of various sizes and levels of development offering a range of choice would be advisable.

6.3.1.32 PLOT PATTERNS: LIMITING THE FUTURE

The legal minimum plot sizes required by most Municipal Corporation are as large as to price land out of the reach of most city dwellers. Relaxation of these sizes and planning them in a narrow pattern which makes efficient use of infrastructure by reducing street frontage is commendable. However, as in most transformations, the pendulum often moves too dramatically from one extreme to the other. A minimum plot size of 500 square feet with a bathing space, W.C. and water connection is advisable because:

- a) The larger the small plot the more adaptability exists, and greater future flexibility is allowed.
- b) Larger, small plot can accommodate, within reasonable limits, expectations which will rise within one to three generations. Rot boundaries are amongst the most persistent structural components of cities. Tiny plots close future options.
- c) Initial investments can be more effectively used by the poor. For example, the buyer can accommodate an immediate relative who may have his own kitchen but may share the W.C., water tap and other costly infrastructure, in a crisis a participant may rent out a space to gain a subsistence income or to repay a housing loan.

6.3.1.33 INNOVATIVE ADMINISTRATION

By creating a special cell for the project the participants gained greater access to the processes and mechanisms of the city government. While design and construction standards were lowered for the project procedures for passing plans have also been streamlined. This work can be done directly at the cell level as opposed to highly professionalized and technical procedures, required at the City Engineer's regular building clearances. The conduct of weekly participation meetings is another innovation.

Handing over management of basic services to non-government organizations makes good management sense. However, care must be taken to see that education societies do not for example obtain subsidized land only to build school for the elite.

6.3.1.34 VIGILANCE

Any program which helps the poor is bound to undercut vested interests who prey on the poor is bound to undercut vested interest who prey on the poor's disadvantaged position. Landlords who collect large illegal rents off of "pattas" carved out of stolen lands are the biggest losers. Politicians who patronize the poor will lose captive supporters. Social workers, who promise "charity" and gain status amongst the elite parading as protectors of the poor, will also be losers. Often one individual or agency may encompass all of these interests. This represents a formative adversary to progressive action such as the Bibwewadi Project Vigilance must be constant over the key points where sidetracking of such projects takes place through legal, political or administrative tactics. Support from the public through appropriate information and development support communications is essential. In the Bibwewadi Project this has been done both in a well considered objective manner and as a reaction to crisis. As experience builds up key areas of information dissemination must be identified.

6.3.1.35 GOING TO SCALE

The Bibwewadi Project must become the Bibwewadi Approach. It must become a continuous process. Combined machinery for land acquisition, participant's involvement, land development, institutional co-ordination, infrastructure development, finance, etc. does not exist. Lessons of one year must become built-in mechanisms of the next. Supply must reach demand. An adequately planned organizational structure using an appropriate urban development management system must be established to replace the regulatory system now in practice. A primitive form of local development administration must replace the present restrictive government. Going to scale in shelter is the objective. Reaching the poor is the goal. Combined with slum enhancement, this project approach opens the door to a replicable affordable pattern of providing shelter for the poor.

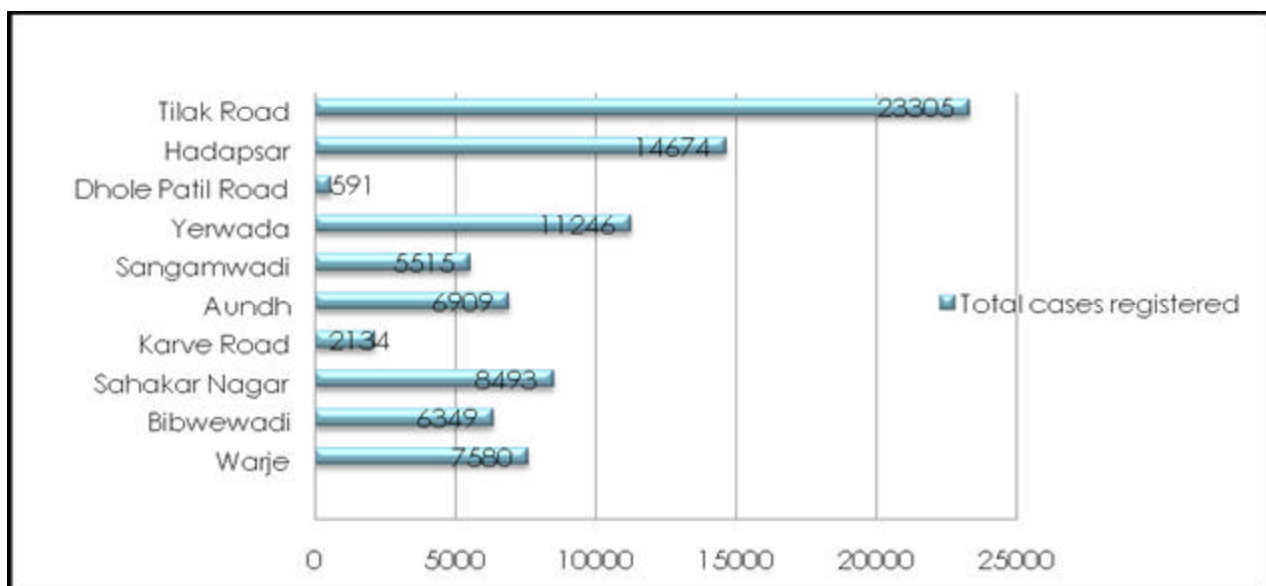
The above twenty lessons from the bases for new projects which reach the poor. If these lessons are studied and used by practitioners we will be able to "go to scale" in providing all the urban poor with secure existence and tenure in hygienic environment.

6.3.2 GUNTHEWARI REGULARIZATION

6.3.2.1 PROCESS FOR REGULARIZATION

- 1) The concerned plot holder shall apply for regularization of gunthewari development within a period of six months from the date of the coming into force of this act.
- 2) Gunthewari for open plots is applicable only for the plots before year 2000.
- 3) The application shall be accompanied.
 - a) Existing layout Plan inter alia by -
 - b) Plan of existing construction on such plot
 - c) Rectification Plan
 - d) An undertaking by the applicant to rectify infringement.
 - e) Demand draft, drawn on any schedule bank to cover the amount due as compounding fee and development charge.
- 4) The Planning authority shall scrutinize the case for fulfillment of the stipulated requirement.

Figure 6.33: Gunthewari cases registered till date 30/11/2008 as per ward office



Source: PMC.

6.3.2.2 CASE STUDY: VITTHAL PATIL NAGAR, HADAPSAR

Located at survey no. 210,211 at Hadapsar. It is 8 km away from Pune airport and 9 km from Pune railway station. The major shopping hub and recreational area i.e. Pune camp is about 7.5 km from the Location. Hadapsar Bus stop is about 2.5 km away. Ayurvedic College acts as landmark for this colony.

Figure 6.34: Location of Vitthal Patil Nagar, Hadapsar



The Vitthal Patil Nagar is established in year 1991 earlier the name of the colony was Vidya Vihar society. It is located along the canal. The land was under the ownership of one single person who further subdivided the land into one Guntha area and sold it almost illegally. With the increased awareness almost 80% of the structures have been regularized or under the process of regularization. The Targeted Group is LIG having varying income between Rs 5000 to 10,000 per month.

It is observed that there is complete violation of building byelaws at the site, 90% of the plots have FSI utilization of 1 whereas permitted is only 0.75. No setbacks has been left, the ground coverage is 100%, with no provision of committed open space in the layout. Open plots are used by children for playing. There is no fire clearance obtained as the colony is unauthorized access is through only 3 M wide road.

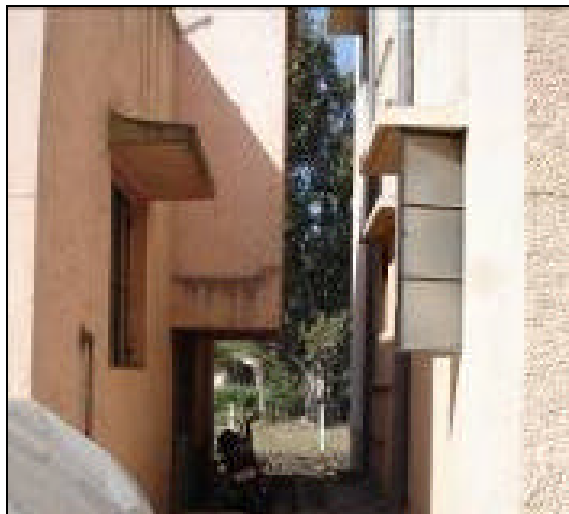
Table 6.7: Details of Vitthal Patil Nagar

Description	Unit
Total area of Colony	4 acre
Total Built up area	4.9 acre
Total No of Tenement	150
Total Population	1000
Gross Residential Density	125 HH/Ha
Net Residential Density	147 HH/Ha
Tenure ship	Freehold

Source: Primary Survey

From survey it is found that all the inhabitants of the colony are migrants from the city or outside the city, no occupant is from the village Hadapsar itself. It shows that investors did investment in land outside the city and further sold it to make more profit.

Figure 6.35: showing actual site with no setbacks and Parking facility at site



Those who can travel more than 30 Km to their work place in a industry which are in PMC or PCMC are staying on rent basis in this colony because of unavailability of affordable housing in that areas.

6.3.2.3 ISSUES FROM THE STUDY

- 1) FSI is consumed more than 1.
- 2) The average plot size is 1 Guntha i.e 100 Sq.mt.
- 3) Plots having area 100 Sq.mt. are still better than those having less than 100 sq.mt.
- 4) Plot area left after the leaving setbacks is very small which does not satisfy the requirement of the occupant.
- 5) Violation of byelaws, No Privacy at Dwelling Unit level, Lack of light and ventilation, Busy roads, No Security of Tenure ship.
- 6) Gunthewari is a major issue confronting the planned development of Pune city which is increasing by frequent violation of the Planning and DCR. It is therefore essential that development plan policies should be implemented in effective manner and forcefully enforced.

6.3.3 SLUM REHABILITATION AUTHORITY

Total 76 projects are registered at SRA covering total area of 627390.56 sq.mt. which will benefit to total 29677 numbers of households. Out of total 76 projects 16 are ongoing project including 4, 839 numbers of households of area about 1, 20,975 sq.mt. also including non residential units i.e. 73 numbers. Till date 648 number of households are got benefitted from the projects. 35 number of projects are under approval stage for which list of beneficiaries has been sanctioned. This 35 projects are going to benefit 16, 696 number of households, and rest 25 projects still has to complete their 70% approval, building permission and other procedures¹³.

¹³ SRA Pune

6.3.3.1 SHELAR WASTI AT KOTHRUD PUNE

It is located at S. No. 135 and 136 at Kothrud, Pune. This is slum redevelopment schemes took place since about last two years. Project benefitted total 111 number of slum dwellers. It falls under 'C' zone so the rehab component is 1:3. The beneficiaries are given housing units at backside of the plot and the free sale component is used at the front side of the plot facing the road. All legislations are followed suggested by the SRA for the execution of the project like 70% consent of the slum dwellers n etc. The other details of the projects are as given in the table given below,

Table 6.8: Details of the Project

Plot area (sq.mt.)	3397
Declared slum area	3397
Park Reservation kept @ 40%	1358.8
Net plot area under SRD	2038.2
Min. Rehab tenanments @ 360/ha	74
Existing eligible slum dwellers	111
Rehab area @ 25 sq.mt.	2775
Zone as per TDR	C
Total sale area @ 1.4	8325
Total Permissible FSI of SRD scheme	11100
Max. permissible FSI on Site @ 2.50	5095.5
Slum TDR Over & above 2.50	6006

Source: Omkar Associates, Pune

Figure 6.35: showing the old slum settlement at location

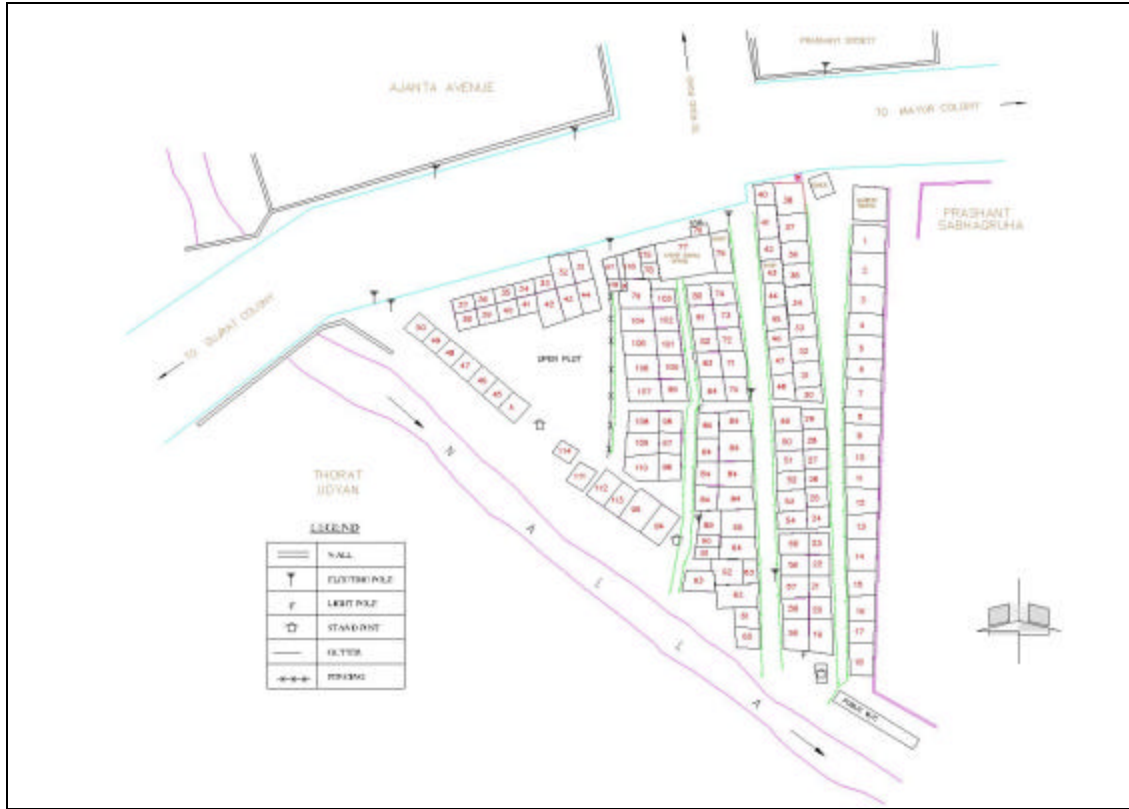
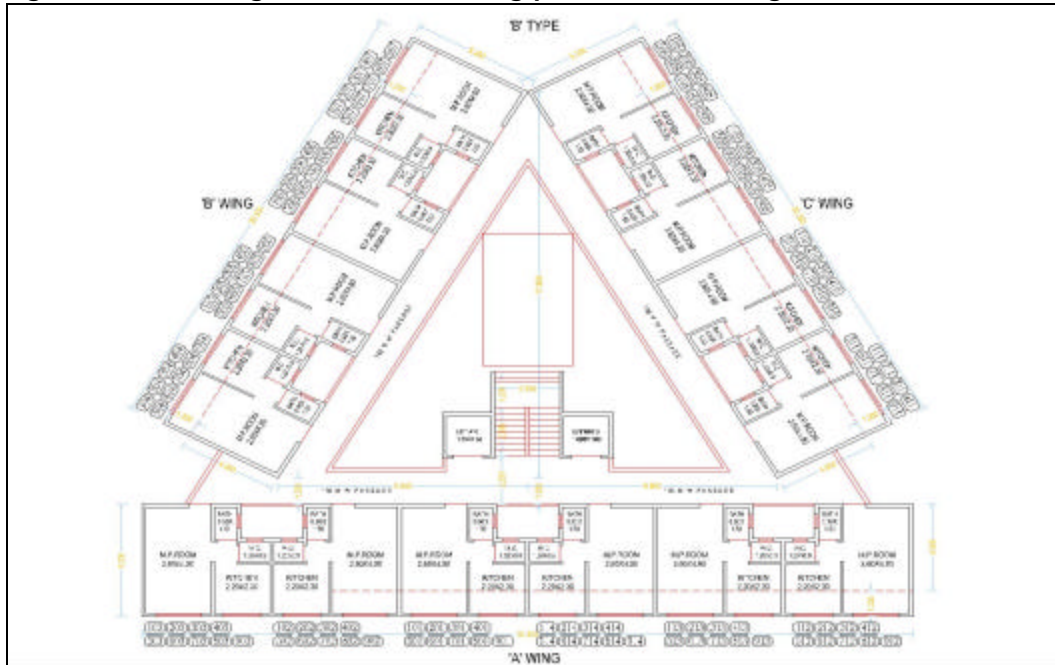


Figure 6.35: showing the current building plan of the building



7. TDR

7.1 LAND MANAGEMENT TECHNIQUES

Land issues of large cities in many states of India are of an acute nature and are getting worse as we pass from one economic growth and urbanization cycle to another one. Most of the Indian cities are adopting the master plan and land use control technique that could not ensure the supply of land particularly for the low income groups. Moreover restrictions on the supply of land and the density of residential development greatly affect the land cost. Assessment of land policies reveal that many of land policies are ineffective and, in many instances, frequently result in adverse effect on social well being and economic productivity.

There are many different land management techniques which have been tried in different cities as a part of implementing master plans. These are discussed as follows:

7.1.1 LAND ACQUISITION

Land acquisition act, 1984 it is the most effective tool through which public agencies can take possession of privately owned land for larger public interest. The loss of valuable land of owner is compensated as per the provision of law. Most of the time discrepancies occur for deciding the compensation amount and it is no more an efficient solution for the cash attentive public agencies in India.

The Act applied to large cities because the shortage of land was felt more critically in urban areas and where in migration more is.

Main objectives of Act are as follows,

- To discourage construction of luxury housing leading to conspicuous consumption of scarce building materials and to ensure the equitable utilization of such materials
- To secure orderly urbanization

- To prevent concentration of urban property in the hands of a few persons and speculation and profiteering therein
- To bring about socialization of urban land in urban agglomerations to sub serve the common good by ensuring its equitable distribution

7.1.2 PLOT RECONSTRUCTION TECHNIQUES

This technique popularly known as TP scheme, by which a group of land holding is created from privately owned land in a notified area to rearrange and subdivide the plots in order to provide access to all parcels and infrastructure. Compensation is paid to the owners for loss of land and a betterment charge is levied up to 50% of the appreciated land value to individual plot owners.¹⁴

7.1.3 LAND POOLING/READJUSTMENT TECHNIQUE

In this method fringe area of a city is identified and city agencies then engage different landowners in a compulsory partnership for design and servicing the pooled land treating as a one estate. The group has to provide for final plan a re-plotting as well as financial plan. The agency provides a small working capital which they recover by selling a part of the developed land. This model has found favor in several Asian countries like Taiwan, Japan and Korea.

7.1.4 NEGOTIATED LAND PURCHASES

This mechanism enables the developers to negotiate and purchase land directly from farmers around the city boundary and consolidate them for urban development. This model eliminates the financial burdens of urban authority and the farmers are also happy as they get five to six times more than the market value of their land. This is an improved version of compulsory land acquisition employed in Haryana through Urban Areas Act 1975.

¹⁴ Ansari, 1996

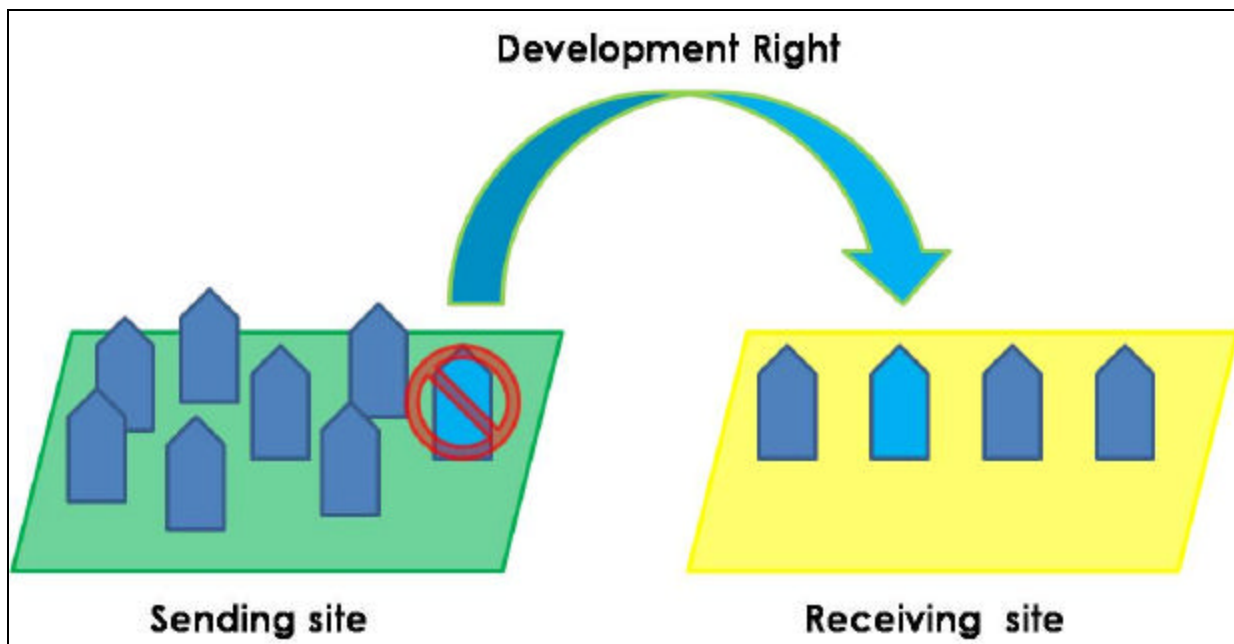
7.1.5 TRANSFER OF DEVELOPMENT RIGHTS (TDR)

TDR is a handy instrument in the hands of the PMC to implement the development plan. Transfer of development right is a notion which utilizes the potential of land for a particular location. Right to develop i.e. built up of a land is taken away from one land parcel and an incentive is given to another land parcel where there is a high demand for built up space. The receiver of development right pays a sum of rupees to the donor of development right according to market price of such TDR. Unorganised and haphazard development of the city which is determined by the high land prices can be controlled with the help of TDR.

7.1.5.1 DEVELOPMENT RIGHTS

Land ownership is commonly described as consisting of a bundle of different rights. Usually when someone purchases a parcel they purchase the entire bundle of rights that might be associated with the land. Owning a development right means, you own the right to build a structure on that land parcel. Development rights may be voluntarily separated and sold off from the land.

Figure 7.1: Concept of TDR



Source: MASHAL

7.1.5.2 SENDING SITES

Parcels that have productive agricultural or forestry values provide critical wildlife habitat or provide other public benefits such as open space, regional trail connectors or urban separators. Preservation of these types of areas has been identified as a goal of TDR. By selling the development rights, landowners may voluntarily achieve an economic return on their property while maintaining it in farming, forestry, habitat or parks and open space in perpetuity.

7.1.5.3 RECEIVING SITE

Development rights that are “sent” off of an Owing a development right means that you own the right to build a structure on the receiving parcel. Development rights may be voluntarily separated and sold off from the land (sending site) and placed on a receiving site. A receiving site is a parcel of land located where the existing services and infrastructure can accommodate additional growth. Landowners may place development rights onto a receiving site either by transferring them from a qualifying parcel they own, by purchasing the development rights from a qualified sending site landowner, or purchasing them from the Municipal Corporation. With transferred development rights a landowner may develop the receiving site at a higher density than is otherwise allowed by the base zoning.

7.2 TYPES OF TDR

7.2.1.1 RESERVATION TDR

The owner (or lessee) of a plot of land which is reserved for a public purpose in the development plan and for additional amenities deemed to be reservations provided in accordance with these regulation, excepting in the case of an existing or retention user or any required compulsory or recreational open space, shall be eligible for the award of Transferable Development Rights in the form of floor space index to the extent and on the conditions.

7.2.1.2 ROAD TDR

For the purpose of Road widening and construction of new Roads, the commissioner may permit additional floor space index on the 100% of the area required for road

widening or for construction of new roads proposed under development plan or those proposed under proposed under Bombay Municipal corporation Act 1888 excluding internal means of access if the owner (or lessee) of such land surrenders the land without claiming any compensation. The owner is entailed to use the additional FSI on the on the reaming plot or shall be allowed to utilize as development right as per the regulations of TDR.

7.2.1.3 HERITAGE TDR

The owner/lessee of any heritage buildings who suffers loss of Development Right due to any restrictions imposed by the commissioner or government shall be eligible for award of TDR in the form of FSI or built up area.

7.2.1.4 SLUM TDR

According to the provision of regulation if any person voluntarily donates his plot for slum rehabilitation then and also construct the rehabilitation building on the same plot then he is entitled to receive TDR for the building. The same is also applicable for the making any amenities for the slum dwellers or for constructing slum-transit camps.

7.3 TDR AT MUMBAI

TDR in India is first observed in the Proposal of Ford foundation consultants Kingsley and Kristof, for improvement of the slums in Kolkata, 1971, where it was suggested that in slums of Gross low density in attractive locations, slum dwellers be resettled on the original sites in high rise housing and excess right to be sold at market rate to create cross-subsidy for the slum dwellers¹⁵. However, the recommendations were not implemented. The concept was in use in the form of floating FSI in Mumbai from early '70s and was included in the Development plan of Mumbai for the period of 1981-2001. After a few modifications in the modalities by De Souza committee, which was set up to review development plan, it was finally adopted in March 1991 through new development control regulation sanctioned by government of Maharashtra. At present six types of TDR are awarded they are Reservation TDR, Road TDR, Slum TDR, Old Property TDR, Heritage TDR and amenity TDR.

¹⁵ Dwyer, 1979, p227

In Mumbai TDR is issued by MCGM to the owner of a land parcel in order to compensate the loss that he has incurred out of restriction of development on his plot. The Owner is given a certificate called Development Right Certificate (DRC) as compensation. The DRC is issued in a proportionate amount (in sq. m) of the plot area. Normally for City area the ratio of Land area to DRC area is 1:0.75 and in Suburb the ratio is 1:1. The plot for which the DRC is issued is called as TDR generating plot and the plot where TDR is used or is intended to be used called as receiving plot. The owner loses the right to develop any built up property on generating plot.

The DRC holder can use the area specified in the certificate to construct additional floor space in another plot which he owns (receiving plot), provided that the FSI in the receiving plot does not exceed 2 (in some cases 2.5). If the DRC holder does not have any other plot then he can sell the certificate to another person in the open market at a market price of the TDR. The DRC can be sold wholly or by part, with prior intimation to TDR cell of MCGM. The buyers of DRC then become eligible to construct additional floor space of the purchased amount. The DRC cannot be used in already existing buildings and the receiving plot must be at the north of the generating plot.

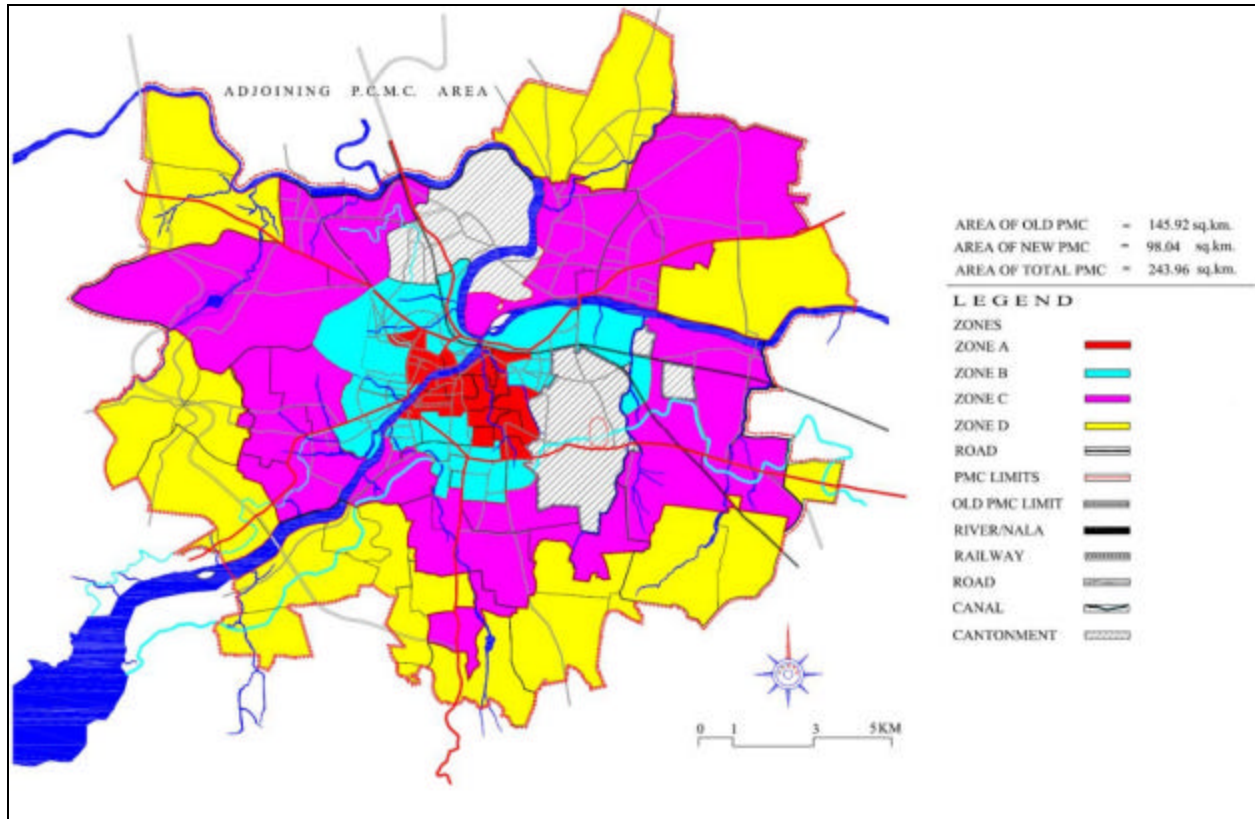
The owners of DRC have to pay to MCGM at the time of construction of additional floors in excess to the permissible FSI of the plot towards the infrastructure development cost. The market price of the TDR varies according to the demand-supply situation of TDR and the price could be more or less than the TDR generating plot. Usually TDR is sold through advertisement in the news paper or through property agents. For a lay person the only option remains to sell the DRC to developer.

7.4 TDR AT PUNE

PMC has divided the Pune city area into three different zones. Inner, middle and outer ring orderly, inner congested areas and the old PMC limits is zone A which is total area of 5.37sq.km. Middle ring is known as zone B of total area 28.30sq.km. While the outer ring area 112.25 sq.km. within the old PMC limit is zone C. All 23 villages in new PMC area are yet to be designated a zone name that is of total area 97.84 sq.km excluding Panchgaon and 100.06 sq.km including Panchgaon.

TDR generated in zone A can be transferred in zone B or C zone. In congested areas or say zone A, TDR cannot be used. Similarly TRD generated in zone C cannot be shifted inwards like zone B or zone A.

Figure 7.2: TDR zone at Pune



Source: MASHAL, 2009

TDR utilization capacity of TDR receiving plot is controlled by PMC. TDR concept is effective, as PMC does not have to assure the monetary compensation while taking land for DP roads or for public amenities. Compared to land acquisition this takes less time & encroachments are cleared by the owner. Owner is free to sell TDR at market price and PMC continue to tax property that has used TDR.

7.5 RESERVATIONS IN 1987'S DP

There are total 581 reservations along the whole DP of PMC for public purposes and the total area reserved as about 744.79 ha. The reservations are divided into 36 categories as listed below,

Table 7.1: DP reservations

Primary School	Civil & cultural center
High school	Economically weaker sections
Dispensary, Maternity homes & hospitals	Housing for disc-housed
Shopping centers	Cremation ground & Burial Ground
Children Playground	Museum
Playground	Cattle Pond
Garden	Dhobi ghat
Fire Brigade	Washing Haud
Parking	Municipal Purpose
Pune Municipal transport	Office Complex / C2
Slum Improvement	Community center
Post office	Railway Goods Yards
Maharashtra State Electricity Board	Bird sanctuary
Park	Police station
Green Belt	Agricultural market
Treatment Station	Telephone exchange
Pumping station	All India radio
Television center	Timber industries

7.6 IMPLEMENTATION OF 1987 DP OF PUNE UPTO 1997 BEFORE TDR

The proposals in 1987 DP of Pune were expected to be implemented at least by 50% by 1997. A total area of 770.30 ha was reserved under the DP, but PMC managed to acquire only 244.25 ha and developed 193.57 ha. Thus the overall implemented level of the plan was 28.50%¹⁶. This was not satisfactory and was much below the expected level. Finding the major reasons which affected the implementation of 1987's DP of Pune up to 1997 can be stated as follows

7.6.1.1 INADEQUANCY OF FINANCE AVAILABILITY FOR DP IMPLEMENTATION

There are about 770.30 ha in the area admeasuring about 525 sites reserved for various public amenities in the 1987's Development Plan for Pune. The total cost of acquisition proposed then in year 1982 was Rs. 98.69 crores, of which PMC was estimated to carve up Rs. 70.83 Crores. But in spite of considerable rate of inflation the amount made available for land acquisition is Rs. 18.04 crores, from 1987 to 1997 and Rs. 89.57 crores

¹⁶ PUNE City Development Plan

from 1997 to 2006. Thus total amount made available for land acquisition is Rs.107.61 crores. This is may be mainly due to revenue incomes are used to meet revenue expenditures, the support from state for plan implementation is inadequate and there is no specific/separate financial source/provision for plan implementation. The idea of Development Charge introduced in 1992 by amendment to MR&TP Act, 1966 is arbitrary and don't have any relevance to the benefit credited with landholder and is not responsive to cost escalation. Assistance available from Government under various schemes through DPDC for acquisition and development of various sites reserved is very meager as compared to the today's cost of acquisition and development. No TPS is prepared for implementation of this DP; hence no assistance is available in form of free amenity sites and betterment contribution.

Resistance to implementation from vested interests, arising on account of the inbuilt nature of the system for reservation of land under the DP, in which lands of few owners gets reserved, while the rest of the owners gathers the benefits. To solve this problem, either there should be no reservations on private lands, which is prima-facie undesirable for long term planning or a system like TPS shall be renovated and strengthened under which land loss of all owners will be equalized.

7.6.1.2 LEGAL LOOPHOLES

While the act makes it obligatory for Municipal Corporation to prepare the DP, it does not make implementation obligatory. Hence DP is looked up on by the Planning Authority as nothing more than the instrument for controlling developments and enforcing land use provisions. Section 42 of MRTP Act of 1966 does mention duties of Planning Authorities to work towards implementation of plan.

Hence looking to the experience of TDR with MCGM (NMC) and recommendations made by the "Paranjape Committee" to expedite the pace of implementation of the DP the State Government, vide its order dated 5th June, 1997, allowed the PMC by Section 37 of MR&TP Act of 1966 to bring in the concept of TDR in June 1997 under regulation No.N-2.1.5 in their Development Control Regulations. Actually TDR policy for Pune goes back to 1987 when DP was sanctioned and which allowed additional FSI for area under road widening line to the extent of only 40% of remaining plot area.

7.6.1.3 DP IMPLEMENTATION AFTER 1997 FOR ROADS

It is seen that DP has not got implemented even after the implementation of TDR as per as roads are concern. This is because Pune is not giving attention towards the right compensation given to the land owners affected by road widening of by new DP roads.

Table 7.3: Showing the implementation of DP after TDR implementation (for Roads)

Sector	Reserved, ha	Developed, ha	% Developed
I	24.18	14.91	61.64
II	104.52	41.43	39.63
III	147.59	53.10	35.98
IV	98.40	34.33	34.89
V	159.61	70.28	44.03
VI	88.32	60.85	68.89
Total	622.61	274.87	44.15

Source: PMC

This analysis is done on the basis of the data from the PMC about undeveloped road area measuring about 347.741 ha which constitutes 55.85%.

7.7 ZONE WISE TDR GENERATION

Table 7.4: Details of TDR generated and Utilized

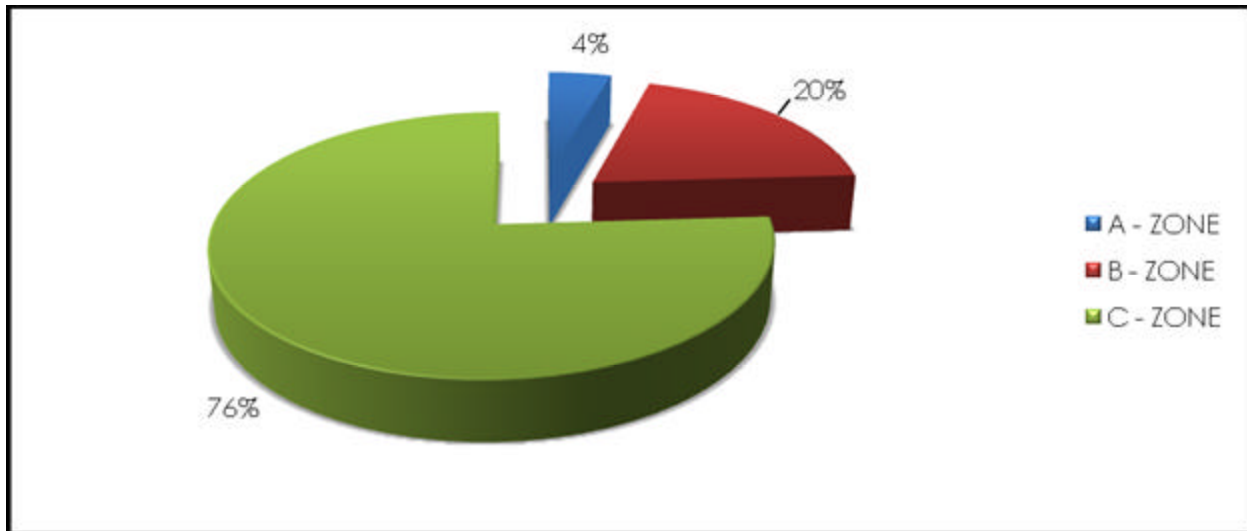
	GENERATION OF TDR (sq.mt)	UTILISATION OF TDR (sq.mt.)	BALANCE TDR (sq.mt.)
A – ZONE	87484.22	80217.13	7267.09
B – ZONE	356630.31	310580.47	46049.84
C – ZONE	1336488.28	1148833.03	187655.25
D1 – ZONE	6859.62	5729.50	1130.12
TOTAL	1787462.43	1545360.13	242102.30
(Ha)	178.75	154.54	24.21

Source: PMC, 2009

It can be seen that the maximum TDR generated is in the C-zone as more reservations are allocated in this zone also the land area in C-zone is more compared to other zones which is allocated on the outer suburbs of the city. A very small amount of TDR is

generated in Azone as this zone is already congested and maximum FSI is already utilized for the maximum built up area, also the plot areas in most of the locations of A-zone are not big enough to absorb total TDR along with the full FSI.

Figure 7.3: Zone wise % of TDR generation

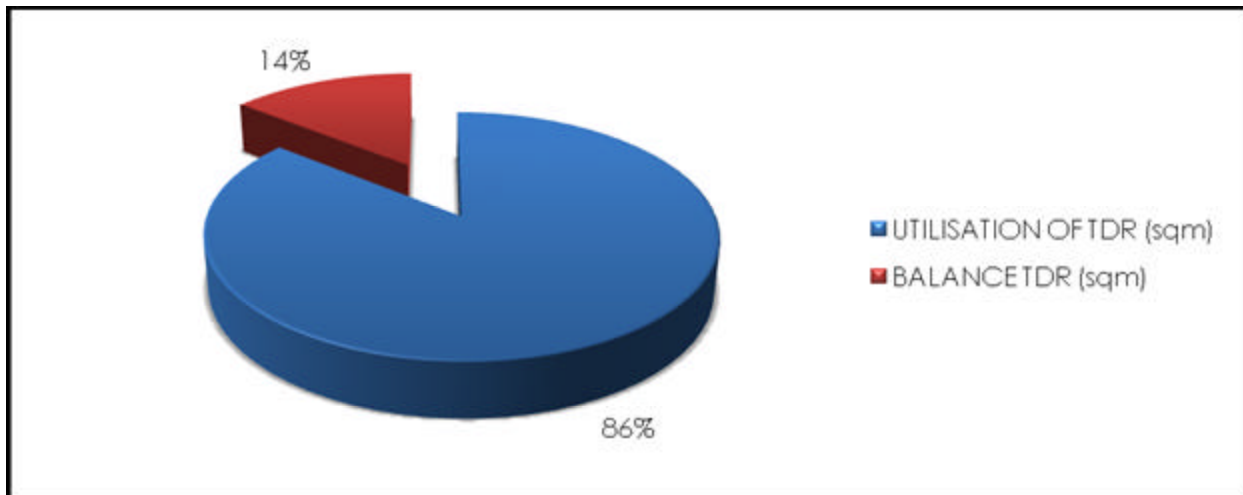


Source: PMC, 2009

7.8 UTILISATION OF TDR

TDR is generated should get utilized in active TDR market. If we have a look on TDR generated, out of 162.40 ha total 139.35 ha is utilised in various permissible places leaving 14 % balanced.

Figure 7.4: TDR utilised and Balance till 2009



Source: PMC, 2009

From TDR generation and utilisation analysis it can be seen that its pattern and preferences are different. It can be observed that the total TDR generated in Pune core city area is 71219.04 sq.mt. out of which 95% is utilised this may be because of high land values and also it can be transferred to other zones like B and C.

7.9 POTENTIAL TDR CALCULATION

Taking into consideration the total area reserved under 1987 development plan total potential TDR that can be generated is calculated for the total reserved land out of which TDR used till now is deducted and available TDR that can be used is calculated which comes out to be about 1951 ha as shows in table.

Table 7.5: Details of total potential TDR calculation

Parameters	Area under reservations in DP (ha)	TDR potential	
		(Area in ha)	(Area in sq.mt.)
RESERVATIONS	602.66	843.73	8437324
SLUM	213.09	532.72	5327250
ROAD	622.60	871.64	8716400
Total Potential TDR	1438.35	2248.09	22480974
TDR utilized (till 2009)		139.34	1393479
Available TDR		1951.54	19515494

Source: MASHAL, Pune

It may be noted that realistic TDR potential will be almost half of the above figures as considerable FSI will be use on site and TDR aspect will be approx. 50%. This TDR can be utilised into the suburbs of the city the land available into the areas where large land parcel having bigger plot sizes can be utilised along with the FSI allotted for that particular plots. As out of total reserved land for residential use under DP taken into consideration which is around 10374 ha and its capacity to absorb the potential TDR is calculated deducting the total commercial lands potential to absorb the total commercial potential.

It can be seen from the calculation that if 40% of total land which is reserved for residential use in DP is considered has a potential that it can absorb the TDR generated there will be a surplus TDR of 291.70 ha.

Table 7.6: Land Potential calculation that can absorb total TDR generated

Parameter	Area (ha)	Area (sq.mt.)
Potential land % of total residential land	40%	
Total potential land that can absorb TDR	4149.60	41496000
TDR receiving capacity	1659.84	16598400
Total surplus TDR	291.70	2917094

Source: MASHAL, Pune

If exercise is done on how to absorb all this TDR in the available land reservation the receiving capacity has to be increase to absorb potential TDR that will be generated it is seen from the table that if the receiving capacity is increased to 0.47 from 0.4 all potential TDR will be absorbed within the land reserved for residential use in old DP. It is against the total potential TDR generated i.e.19515494 sq.mt. leaving surplus of 12374.2 sq.mt.

7.10 SLUM TDR

Government of Maharashtra has issued the Regulation for Slum Rehabilitation Authority vide order under section 154 of MR&TP Act, 1966 issued on 20th March, 2007. As per these regulations, for every TDR Zone, rehabilitation component and free sale components are stipulated as follows Zone A - 1:2, Zone B - 1:2.5, Zone C - 1:3.

7.11 LESSONS FROM THE STUDY

7.11.1 STRENGTHEN PUBLIC HOUSING SECTOR

Main actors on behalf of Govt. are MHADA, CIDCO to provide housing to Economically Weaker Sections (EWS) and Lower Income Groups (LIG). Due to lack of rationalized comprehension, and failure to keep pace with private market and also increasing overhead costs, these bodies are not efficiently doing their functions. Government lands should preferably be allotted to these agencies only. Thus reducing burden of TDR substantially, concessions given to slum TDR may be withdrawn.

7.11.2 FLEXIBILITY

Flexibility to Planning Authority's rehabilitation plans can be achieved with the help of TDR. Deserving social institutions could be granted TDR at nominal price to encourage strengthening supply of Rental housing, accommodation for working bachelors and students.

7.11.3 TARGET ORIENTATION

Target should be set by planning authority to aim at least 15% of the TDR annually entering into market so that the other overall development of land reservations, slums and roads will take place simultaneously.

8. AFFORDABLE HOUSING

8.1 AFFORDABLE HOUSING CRISIS IN PUNE

The most stark and visible sign of the severe shortage of affordable housing that afflicts Pune, much like other fast growing cities across India, is the incessant growth of the number of slums and the overall slum population in the city. In case of Pune it is estimated that 40.56 percent of the city's population residents live in slums currently as compared to under 20 percent 15 years ago. The housing stock periodically created over the years, by both, Public and Private sectors, under labels like "Economically Weaker Section" or "Low Income Group (LIG)" have proved to be grossly inadequate to provide for the growing squatter settlements and slums in urban areas.



The terminology of the issue has been 'politically' corrected over the years, from "Slum Removal" to "Slum Improvement" to "Slum Rehabilitation" but the word "Slum" has apparently come to stay in the Indian Urban Development scenario.

Recent surveys indicate that over 70 % of the slum population of Pune has been living in Pune for over 10 years, which clearly suggests that affordable housing options are unavailable to even those who have been long time residents and have relatively stable incomes.

However the scale of the affordable housing problem is not just limited to those living in slums. Another 10-15% of Pune's population live in Wada's, Gaothan, dilapidated buildings, or extremely cramped regular housing because there are few if any alternatives for these residents that offer better yet affordable housing. Thus the problem of affordable housing affects almost 50% of city's current population is only likely to get worse as the city continues to grow. Or in other words, **the affordable housing deficit is in the range of 2.5 to 3.0 lakh units already and will likely double over the next 15 years as the city and the metro region continues to grow.**

Today, an entry level home in the Pune metro area starts in the range of 8 to 10 lakh. This is the general trend amongst developers being one of the moving to larger and more expensive dwellings units, which tend to be more profitable. Using the general rule of thumb that one can afford a home no more than 4 times one's annual income. This means that the formal housing market only caters to the needs of those earnings Rs. 2 lakh or more per annum. The problem of lack of affordable housing for those who want to buy but have meager or modest means, is compounded by the virtue lack of affordable housing on a rental basis. – other than in slums – for those who do not have either the future stability of the down payment required to own their own home

Table 8.1: Market segmentation of Pune Affordable Housing sector

Annual income levels (Rs)	Price of affordable house (Rs.)
40,000-60,000	1.25 lakhs
60,000-1,00,000	2.5 lakhs
1,00,000-2,00,000	7 lakhs
2,00,000-3,00,000	10 lakhs

High land prices is one of the main reason of affordable housing shortage, since land prices are increased roughly tenfold over past 15 years. Construction cost has also increased but what has gone up even more is the various taxes, duties, and levies as well the regulation and corresponding cost of compliance, those are imposed by the centre, state and city.

Further complexity in the evaluation of "affordability" is added by the dimension of 'quality'. The quality of the construction, the quality of the neighborhood, the quality of the environment, all contribute to the determination of 'affordability'. Decent and legal affordable housing has remained an unfulfilled dream for many in Pune, as in order cities across India, due to a slew of factors. Past efforts at addressing this issue have been fragmented, reactive, and narrowly focused on symptoms rather than root causes. However there is an opportunity to take advantage of the natural forces of urbanization to create massive amounts of affordable housing by redirecting market forces though policies, regulation and incentives-which can be augmented by direct

governmental involvement in creating certain specialized type of affordable housing as required. Doing so will not only provide shelter to a large portion of the city and region's unserved population, it will also catalyze the additional economic growth and employment in the region and create more equitable cities that provide both employment and living options to all.

Attempts to address the affordable housing crisis have focused mainly on the redevelopment of existing slums via a variety of mechanisms ranging from in-situ owner driven up gradation combined with better infrastructure and services by the city to a complete makeover by is paid for by freeing up part of the slum plot for commercial development. However despite a decade or more of these various schemes being in place, the total impact has been negligible.

8.1.1 AFFORDABLE HOUSING CRISIS REASONS

- a) Mainly due to alarming increase in the slums. 40.56% of the total population constitutes the slums, which was only 25% in 1995. There are almost 564 slums with over 2.2 lakhs families in Pune.
- b) Large number of congested gaothans, crumbling wadas and dilapidated buildings which consume larger area. These areas are more affordable due to rent control and tenancy laws there is congestion in
- c) Flat prices in new developments cost more than Rs. 10 lakhs, which is affordable only for the high level income group.

These different approaches are appropriate as affordability considerations are likely to differ for different income groups.

8.1.2 GOVERNMENT INITIATIVES

There have been attempts at both national and state level to address affordable housing crisis through various institutional mechanisms. Some major steps of the government are Valmiki Ambedkar Awas Yojana (VAMBAY), National housing bank, SRA and JNNURM, Sites and services

Attempts to address the affordable housing crisis have focused mainly on the redevelopment of existing slums via a variety of mechanisms ranging from in-situ owner driven up gradation combined with better infrastructure and services by the city to a complete makeover by demolishing existing structures and rehousing the existing residents in mid to high rise tenements that is paid for by freeing up part of the slum plot for commercial development.

There have also been some recent measures to create more affordable housing stock for future residents and migrants to city. Key among these is granting for higher FSI for housing schemes with small sized units

8.1.3 AFFORDABLE HOUSING FOR THE URBAN POOR

A house is the product of a process of creating or providing a shelter for oneself to live in. the process of creation of shelter is the 'housing' process. Affordability is viewed as a function of one's income which indicates one's ability to pay. Thus, affordability is not just a financial concept but also socio-cultural and psychological concept. People are in the market for 'shelter' and not for a commodity called house. What is the most appropriate Shelter/Habitat for our needs on the basis of the following criteria:

8.1.3.1 LOCATION/SITUATION

The most critical consideration while selecting a location is nearness to multiple sources for earning a livelihood and no fear of social alienation, where one lives with neighbours who form a community and help each other in need.

8.1.3.2 SIZE

Most rural migrants are accustomed to storing their belongings inside a built structure while they live outside the built structure at least eight months of the year. A vast majority of the urban poor are rural migrants who would rather live on their own terms in a squatter hutment where they choose how to live than in the chicken coops built under rehabilitation programmes. They simply cannot "AFFORD" to live in congested vertical slum where they have no choice.

8.1.3.3 DURABILITY

More than the durability of the entire dwelling the durability of the roof is of paramount significance. A plinth and walls which prevent rodents from entering the dwelling is much appreciated. Maintenance should be easy and cheap.

8.1.3.4 OWNERSHIP/TENURE

Let us examine the current situation within the framework of the Slum Rehabilitation Act or SRA. Under SRA the slum dwellers are going to be rehabilitated in situ and are going to be given either 225 Sq. Ft. or 270 Sq. Ft. or 350 Sq. Ft. of 'flat' in a high-rise building for free. In return an additional urban land will be created to the extent of 2.5 times to 4 times the plot area in the form of additional FSI to the developer. A portion of it 0.5 of the total will be handed to the local body to accommodate their class IV workers or use for anything else they deem fit.

The builder-developer is expected to sell the additional space created at market rate and a part of his profit will be considered a cross subsidy given to the rehabilitated slum dwellers. There is no more involvement of slum dwellers that are being rehabilitated.

8.1.4 CONSTRAINTS IN SLUM:

1. The slum dwellers hold a legal tenure for their house but no tenure for the land. They are quasi or semi legal and must have consent of the landlord to make any improvements.
2. Their credit worthiness is nil or limited as far as financial institutions are concerned so access to credit is difficult and expensive
3. They are not united and there is fierce competition for increasing areas of their dwellings as well as earning livelihoods. They may have different political alliances.
4. They lack confidence due to illiteracy, misinformation and a suspicious attitude.

8.1.4.1 THREATS SEEN IN SLUM

1. Given the quasi legal tenure once the dwelling is demolished they will be left with no proof any legal right what so ever and will have to accept whatever they are given
2. The house will be hypothecated to a banking institution by the builder and they will be repossessed so they are really getting nothing for free.
3. They will be dispossessed with nothing to fall back on and will become destitute.

8.1.4.2 POTENTIALS IN DECLARED SLUM

1. They have quasi legal tenure since this is a declared slum and nobody can evict them
2. That the land is extremely valuable and to encash it the landlords will have them on board.
3. The SRA advocates in situ rehabilitation
4. The additional FSI if shared between them in some predetermined proportion their share will pay for their houses as well as maintenance and many even create opportunities for livelihood
5. They can build homes which meet their household as well as neighborhood community requirements including common spaces to celebrate festivals and other events.

8.1.4.3 OPPORTUNITIES IN SLUM

1. They can use the SRA and participate in the housing process to create their own shelter
2. The opportunity to get legal tenure to their house
3. To create an “affordable” and sustainable shelter.

8.2 HOUSING SCENARIO IN DEVELOPED COUNTRIES

As per housing cost analysis survey conducted in 2006-2007 houses in Los Angeles remained the world’s most expensive, while the most affordable houses are in Canada’s remote Thunder Bay, followed by Youngstown in Ohio and Fort Wayne in

Indiana. The 'affordability' aspect of this formulation of the housing problem has its roots in 19th century studies of household budgets and in the commonly used turn-of-the-century expression 'one week's pay for a month's rent.

8.2.1 HIGHLY UNAFFORDABLE COUNTRY: AUSTRALIA

Australia is said to be one of the most unaffordable country from housing point of view. Affordability can be measured considering data on median house prices, income levels and mortgages to determine what percentage of income that residents used to service their mortgage, where anything out of 30% is considered mortgage stress. According to a social survey the most unaffordable market was the Gold Coast, with properties demanding an average repayment of 93% of income. Sydney followed closely behind, with average repayments of 82%. The study also shows that regional areas are now becoming more affordable, with house and unit buyers as little as 24% of income for mortgage repayments. Rising interest rates, population growth and price increases caused by a shortfall in the supply of new homes are contributing to a 22 year low in affordability. As a result many home buyers are considering medium and higher density housing as more affordable options.

8.2.2 STATUS OF HOUSING IN NEW-ZEALAND

The Australians claims the land of unaffordable housing but New Zealand is not far behind in that respect. A home in the country costs 6.3 times the average annual household income, which is much higher as the rule of thumb for affordable homes-that they should cost no more than three times annual household income. Comparing investment in housing with other developed countries in Canada the "median multiple" is 3.5 while it is 3.2 in United States.

United States, Australia, Britain, Ireland, Canada and New Zealand were studied, and the results reveal NZ house hunters face the biggest gap between earnings and house prices. Wages are so low and house prices are so high that it takes 18 years and six months of a household's entire annual income to pay for a home. According to the International Housing Affordability Survey, the root of the problem is planners – specifically the way their zoning rules and regulations constrain the supply of land. This

research proves that many first home buyers are excluded from entering the property market by a number of factors, including restrictive zoning and consent laws, which not only make life difficult for ordinary Kiwis but are major factors in New Zealand's poor productivity and economic growth levels. For most of the last decade New Zealand has the highest interest rates which make housing far less affordable in New Zealand than elsewhere.

8.2.3 HOUSING REFORM IN CHINA

Housing in China has proved problematic for many years. Since economic reform started in the year 1980's urbanization has been a token of modernization, and consequently housing provision in urban areas has been a major social and economic issue. The major housing problem in China is the scarcity of supply of housing provision. The reforms have been proved disappointing. Although privatisation of housing has been the major objective of housing reforms, the reforms are still focused on the rental sector. Although economic growth has been rapid in China since the launching of economic reforms in the late 1970's, not every household is ready to purchase their dwelling through the market. It is assumed that more than 60% of urban households in China belong to middle or low-income level groups. Purchasing 'market-price' housing is not easy for them. As they constitute the majority of the population, their satisfaction has a deep and broad meaning in politics and society. Protection of their advantages in developing economy with a transitional system is one of the responsibilities of the government.

8.3 ECONOMICAL HOUSING

Economical housing is the main aspect of the new system. Economical housing is a type of low-profit commodity housing with government subsidies and policy support aimed at providing a large number of decent homes for middle and low middle income households. The government is giving a helping hand to the middle and the low middle income households who are the majority of the population by specific preferential policies, which can potentially lead to an explosion in demand for housing and to an efficient expansion of housing supply.

8.4 COMMODITY HOUSING

Commodity housing is housing that is invested in and built by private developers according to principles of the market economics. The supply, sale prices and building standards depend on market demand and affordability. The ownership of commodity housing is not limited in the least. Residents can buy commodity housing as residential consumption or as marketable investment.

8.5 INCOME WISE DISTRIBUTION OF HH

From primary survey analysis it is observed that the average monthly HH income at Pune is observed INR 16495. Average monthly HH income in slums is observed INR 4275 which includes 40.56% population of Pune. Excluding the HH income of slum population from the total population it is observed that average HH income is INR 28714. From analysis it is found that if the individual is not capable to pay the current prices of housing at Pune has found the solution to stay at slum which is very alarming.

Table 8.2: Income wise percentage distribution of population at Pune

Income Group	% Distribution
EWS	44.14
LIG	20.03
MIG	26.25
HIG	9.58

Source: Primary Survey, MASHAL Pune

From the above table it is observed that 44% population fall in EWS group at Pune which is mainly part of the slum followed by LIG and MIG. To drop off the population at slum and to improve living standard at city it become very significant to provide affordable housing at Pune.

8.6 RESIDENTIAL REAL ESTATE SCENARIO AT PUNE

With booming market economy Pune has seen credential increase in cost of the residential units in year 2007 to 2008 market was fully driven by the investors front but is

has observed a decline in year 2009 as a effect of market economy. Residential units are not at all in reach of the common individual at Pune.

Table 8.3: Residential Property rate in sq.ft.at major locations of Pune

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Koregaon Park	2750	2750	3000	3500	3500	4500	8000	9000	7500
Boat Club Road	3000	3000	3100	3200	3500	4500	7000	7500	7000
Deccan	2400	2450	2500	2600	3500	4500	7000	7500	6600
Sopan bag	2100	2150	2000	1700	1900	3100	4500	5000	4500
Kalyani Nagar	1550	1450	1800	2300	2500	3500	4750	5000	4500
Aundh	1350	1350	1500	1700	2300	3000	5000	5500	4800

Source: MASHAL, Pune

From above table it is quite clear that the residential unit price at Pune for a unit having area 55 sq.mt is found to be in the range of 24 lacks to 41 lacks depending upon the locality of the area.

The city is increasingly becoming an end user destination as it has shown considerable depreciation in property values coupled with strong space demand. Also new townships are coming up increasing supply of residential micro market mainly in the outskirts of the city and also the Maharashtra Industrial Development Corporation (MIDC) has been offering various incentives like exemption in stamp duty, electricity waivers etc. This has lured many IT/ITES companies to set up home in the city. This may lead to increase the demand in residential micro market.

The JNNURM fund is also facilitating the infrastructure development. Three major flyovers have become operational across the city. In addition to this, development of newer roads, metro rail and construction of a new airport is underway. These initiatives are expected to provide requisite environment to support future residential micro market growth in the city.

8.7 AFFORDABILITY OF POPULATION AT PUNE

First affordability of different income group has to be known to provide affordable housing unit for different groups. For the same average HH income is considered as

standard to provide affordable units which will cater maximum population of the city, ultimately resulting into reduction into slum population, improving healthy and living conditions at Pune.

Table 8.4: Calculation for price of affordable housing unit

Household income	16495	INR
Cost of House	800000	INR
Maximum loan Available To the Family	85%	of Cost of House
Percentage amount of total income can be taken for the housing loan	35%	
Affordability for housing expenditure	5773.25	INR
Rate of Interest	8.50%	
Time period (years)	20	YEARS
PVIFA	9.6436	
Amount of loan affordable	668098	INR
Loan given as 85% of housing Value	680000	INR
Total Down payment required	131901.0356	INR
EMI	5773	

IF MAXIMUM LOAN IS GIVEN	680000	WHAT WILL BE EMI?
PVA =	Annuity * PVIFA	
EMI =	5876	

Source: MASHAL, Pune

Note: Area of Apartment is considered 55 sq. mt. i.e. 1 BHK unit

From above table it is clear that in current housing market scenario if an individual of Pune is willing to purchase housing unit with HH income INR 16495 then the individual can afford housing unit of price INR 8, 00,000 considering that 85% of housing loan at the rate of 8.5% which is current rate of interest for housing loan is available to the individual for which he has to pay EMI INR 5876 which is more than that of his housing affordability. If loan is available on the basis of affordability then the individual has to pay total down payment of INR 131901 with EMI INR 5773 which is Individuals housing affordability. So, the housing unit having cost INR 8, 00,000 is affordable for individual at Pune.

To decrease slum population at slum housing unit has to be available to them within their affordability. Average HH income at slum INR 4275 is considered and if prize affordable housing unit for an individual from slum is calculated then it is found that housing unit having cost INR 3, 62,000 is affordable for individual from slum at Pune. For which individual has to pay a down payment of INR 26056.

Table 8.5: Affordability of Slum population at Pune

Household income	4275	INR
Cost of House	362000	INR
Maximum loan Available To the Family	85%	of Cost of House
Percentage amount of total income can be taken for the housing loan	20%	
Affordability for housing expenditure	855	INR
Rate of Interest	8.50%	
Time period (years)	20	YEARS
PVIFA	9.6436	
Amount of loan affordable	98943	INR
Loan given as 85% of housing Value	307700	INR
Total Down payment required	263056	INR
EMI	855	

IF MAXIMUM LOAN IS GIVEN	307700	WHAT WILL BE EMI?
PVA =	Annuity * PVIFA	
EMI =	2658	

Source: MASHAL, Pune

Note: Area of Apartment is considered 25 sq. mt. i.e. 1 RK unit

8.8 LESSONS FROM THE STUDY

Affordability of INR 8, 00,000 for a housing unit is found to be in reach of average population of Pune and that is for slum is found to be INR 3, 62,000. In providing affordable housing both cooperative sector and PMC have to make sizeable contribution. The approach needs to be reoriented by providing an active role also to the private sector and also by incorporating the involvement of numerous institutions engaged in the business of finance for housing. Affordable housing has to be brought

within the reach of economical weaker sections and new migrants to the capital. Housing is not sellers market to be able to successfully market its housing units PMC has to effect improvement in good quality and cutback in selling prices.

9. HOUSING DEMAND ASSESSMENT

Housing demand is a product of "Household formation" as a consequence of net population growth. Demand has two aspects "Absolute" and "Effective" Absolute demand is a physical phenomena of number of houseless households, while the "Effective demand" is a consequence of the Household affordability. While the Developers are primarily interested in latter, Policy makers cannot ignore former as they have to cater to the group that has no affordability. It is the lack of attention to the former that leads to the growth of slums and housing shortage.

9.1 HOUSING DEMAND

Table 9.1: Total housing demand by 2027 in Old PMC limit

Total no. of households in 2007	475165	Projected
No. of residential units in 2007	384884	Estimated
Total Numeric Shortage (HH) till 2007	90281	Calculated
Total number of Dilapidated houses	11309	Primary Survey, MASHAL
Total number of Kutchha houses	123543	Primary Survey, MASHAL
Up gradation need for slum (HH)	76026	40% slum removal till 2027
Total shortage up to 2007	301160	

Projected population	3,356,121	(2027)¹⁷
Total housing need in 2027	734381	Estimated
Total housing stock up to 2007	384884	Estimated
Total housing required in 2007-2027	349497	Calculated
Total number of Dilapidated houses that are to be added during 2007-2027	8318	Estimated
Total housing need from 2007-2027	357815	Calculated
Total housing need in 2027 (Nos.)		658975

Source: MASHAL, Pune

¹⁷ Demographic Projections for Pune Municipal Corporation, Gokhale Institute of Economics and Political Science, Pune 2001-2027

Housing demand is the net result of gap that exists between the houseless households and Pucca / upgradeable housing stock. Housing Demand Assessment therefore has to address the demographic characteristics and Housing conditions in a time perspective.

It is clear from above table that the within the old P M C limits, housing supply required is of the order of 33,000 houses per year. It is not only a stupendous task, but the qualitative magnitude required becomes clear once the housing requirement is disaggregated in terms income groups , affordability and grant or subsidy needs.

9.2 LAND REQUIREMENT

Based upon primary survey future housing requirement for different housing group is as follows,

Table 9.2: Housing requirement by income group

Income Group	% Distribution	HH units in Nos.
EWS	44.14	290873
LIG	20.03	132022
MIG	26.24	172977
HIG	9.58	63103

Source: Primary Survey, MASHAL, Pune

Table 9.3: Housing requirement in different typology

Income Group	Plotted development in %	Group development in %	Total no. of Plotted Development	Total no. of Group development
EWS	10%	90%	29087	261786
LIG	15%	85%	19803	112218
MIG	25%	75%	43244	129733
HIG	40%	60%	25241	37862

Source: MASHAL, Pune

- 4) In the last phase, the percentage of the EWS is considered to be very less compared to other group and a substantial growth of the MIG and HIG group is predicted.

Table 9.5: anticipated development of housing stock in different groups Phase wise

Income Group	PHASE								Total no. of HH
	I		II		III		IV		
EWS	101806	35%	87262	30%	58175	20%	43631	15%	290873
LIG	39607	30%	33006	25%	33006	25%	26404	20%	132022
MIG	34595	20%	43244	25%	43244	25%	51893	30%	172977
HIG	9465	15%	12621	20%	18931	30%	22086	35%	63103
Total	185473	100%	176132	100%	153355	100%	144015	100%	658975

Source: MASHAL, Pune

9.4 PROPOSED METRO LINES AND THEIR PHASING

The Pune Metro consisting of two corridors are proposed to be constructed with an estimated cost of Rs 7128 Crores.

Corridor 1: Pimpri Chinchwad (PCMC) to Swargate via Shivaji Nagar, Pune Municipal Corporation having length of 16.59 km with 9 elevated stations & 6 underground Stations.

Corridor 2: Vanaz (Kothrud Depot) to Ramvadi via Pune Railway Station, Bund Garden having length of 14.93 km with 16 stations all elevated.

Figure 9.1: Proposed Metro Corridors



Source: DETAILED PROJECT REPORT FOR PUNE METRO by Delhi Metro Rail Corporation, May 2009

9.5 METRO LINE CORRIDOR AND FSI PROVISION¹⁸

An FAR of 4.0 has been assumed for a distance of 500m on either side of the Metro corridors and for a distance of 200m on either side of the BRT corridors. This will ultimately result into the residential development which is transportation oriented and not the

¹⁸ Analysis is done only on Metro rail proposal considering some assumptions however if do nothing scenario is considered then housing stock will not increase in large amount along the corridor

travelers oriented as it is in Pune. An exercise is done to work out the calculation for width of corridor for more favorable condition to increase the housing stock along the metro corridor which is as shown in table below

Table 9.6: Exercise for calculation of width

Corridor I (km)	16.59		
Corridor II (km)	14.93		
Length of Metro line (km)	31.52		
Width of development corridor considered (m)	500		on either side
width of development on both side	1000		
Gross land area under development (sq.mt.)	31520000		
Area for open space of total land (sq.mt.)	3152000	10%	of total land
Area for amenities (sq.mt.)	1576000	5%	of total land
Area for Road of total land (sq.mt.)	4728000	15%	of total land
Net Land available for development (sq.mt.)	22064000		
FSI allowed	4		
Gross B/u area for development with allowed FSI (sq.mt.)	88256000		
Total B/u area for development of Amenity (sq.mt.)	6304000		
Net B/u area (sq.mt.)	81952000		
Total B/u area under residential use (sq.mt.)	40976000	50%	of total B/u area
Average size of the housing unit considered (sq.mt.)	100		Including circulation area
Total no. of housing units generated	409760		
Average HH size of PMC	4.74		
Residing population	1942262		
Density	1232.4		

Source: MASHAL, Pune

If the development takes place then 4, 09,760 units will generate along Metro corridor with residing population 19, 42,262.

10. UNDERSTANDING RAY

10.1. Rajiv Awas Yojana: Objectives

Rajiv Awas Yojana (RAY) for the slum dwellers and the urban poor envisages a 'Slum-free India' through encouraging States/Union Territories to tackle the problem of slums in a definitive manner. It calls for a multi-pronged approach focusing on:

- Bringing existing slums Within the formal system and enabling them to avail of the same level of basic amenities as the rest of the town:
- Redressing the failures of the formal system that lie behind the creation of slums: and
- Tackling the shortages of urban land and housing that keep shelter out of reach of the urban poor and force them to resort t extra-legal solutions in a bid to retain their sources of livelihood and employment.

An outline of the broad policy issues that need to be addressed by States/UTs under RAY is provided in Annexure I.

10.2. Central support: Pre-Conditions

10.2.1. As in JNNURM, the goals of RAY will be driven and incentivized by the provision of central support for slum redevelopment and construction of affordable housing conditional to a set of reforms necessary for urban development to become inclusive. Annexure it describes the admissible and inadmissible components currently envisaged under RAY.

10.2.2. As regards reforms under RAY, security of tenure through entitlement will be critical for the overarching aim of promoting inclusive cities. Accordingly, Central Assistance under RAY will be predicated on the condition that States/UTs assign legal title to slum-dwellers over their dwelling space. The other reforms include the continuation of the three pro-poor reforms of JNNURM till they are legislated and internalized as part of the system: legislation for property rights to all slum dwellers; and review and amendment to the legislations, rules and regulations governing urban

planning and development structures and systems towards an adequate response to the demands, process and pace of urbanisation. The three pro- poor reforms under JNNURM are reiterated as follows:

- i) Internal earmarking within local body budgets for basic services to the urban poor;
- ii) Provision of basic services to urban poor including security of tenure at affordable prices, improved housing, water supply, sanitation and ensuring delivery of other already existing universal services of the government for education, health and social security; and
- iii) Earmarking at least 20-25% of developed land in all housing projects (both public and private agencies) for EWS/LIG category with a system of cross-subsidization.

10.3. State Slum-free Plan of Action (POA)

10.3.1. Rajiv Awas Yojana envisages that each State would prepare a State Slum-free Plan of Action (POA). The preparation of legislation for assignment of property rights to slum- dwellers would be the first step for State POA. The POA would need to be in two parts, Part-1 regarding the up gradation of existing slums and Part -2 regarding the action to prevent new slums. In Part – 1 the State would need to survey and map all exiting slums in selected cities proposed by the State for coverage under RAY. In Part- 2 the Plan would need to assess the rate of growth of the city with a 20 year perspective, and based on the numbers specify the actions proposed to be taken to obtain commensurate lands or virtual lands and promote the construction of affordable EWS houses so as to stay abreast of the demand. This part would need also to make necessary legislative and administrative changes to enable urban land expansion, and in town planning regulations to legislate reservations for EWS/LIG housing in all new development. Annexure III indicates the broad outline of a State Slum-free Plan of Action (POA).

10.3.2. The State POA would include the cities identified by the State and intended to be covered under RAY in five years, and their phasing. It will commit to a 'whole city' approach, so that an integrated and holistic plan is prepared for the up gradation of all existing slums, notified or non-notified , in each identified city. Within a city, in each slum taken up for redevelopment, a holistic coverage would be required, with provision of all basic civic infrastructure and services as well as decent housing, with emphasis on planned layouts (after reconfiguration of plots based on

existing/ modified building bye-laws wherever necessary) and on total sanitation (by provision of individual toilets and water supply to each household). With regard to housing, the state may adopt a flexible approach as to the manner of construction and arrangement of funds for construction, to follow a beneficiary-built housing model with design and technical support from the Municipality/ State, or to construct housing through state parastatal or private partners or by delineating a mix of methods. The POA would be expected to give primacy to a Public-Private-Partnership model that would enable it to cross-subsidies through FSI and land use concessions as much of the slum redevelopment as possible. The POA would be required to describe the model proposed to be followed in each slum, the efforts for obtaining the community's participation and the financial strategy for holistic development along with timelines.

10.3.3. The State POA will include Slum-free City Plans of Action for the cities identified for inclusion under RAY. While the City POA has to be developed for each city included under RAY as a whole, the pace of slum up gradation within the city can be phased out. For the purpose of phasing, each city may be divided into zones and each zone be taken up as a whole to ensure the universal provision of basic infrastructure and services and decent housing in all slums in the zone, and to attain slum-freeness. A city-wide/zone based approach would enable shifting untenable slums to the nearest possible available vacant land or notified slum which has the space to receive them.

10.3.4. States would be required to forward the Slum-free City Plans of Action (POA) to the Centre for clearance along with the bill for assignment of property rights cleared by the State Cabinet and the commitment of the Government as to the session of the State Assembly before which it will be placed. In considering the POA, the Centre would particularly assess that the cities have been chosen to maximize cross-subsidization, that the extent of commitment for cross-subsidization through PPP has been fully explored; and that the mechanisms for community participation have been clearly delineated and activated.

10.4. Slum-free City Planning: Methodology

10.4.1. Conceptual Framework

Slum-free City Cell in Urban Local Body headed by the Municipal Commissioner/ Executive Officer will be primarily responsible for the preparation of Slum-free City Plans based on guidelines provided by the

concerned State Government and support extended by the Nodal Agency for Rajiv Awas Yojana at the State level. The diagram in the next page provides a conceptual framework for the preparation of Slum-free City Plan.

10.4.2. Planning Methodology

The preparation of Slum-free City Plan will broadly involve Slum Redevelopment/ Rehabilitation Plans based on (a) survey of all slums-notified; (b) mapping of slums using the state-of-art technology; (c) integration of geo-spatial and socio-economic data; and (d) identification of development model proposed for each slum. Base maps at an appropriate scale would be a pre-requisite of the preparation of Slum Redevelopment Plan/slum-free City Plan. States/UTs may need to proceed in the following steps for the preparation of Slum-free City Plans.

- (i) Securing CARTOSAT II/latest satellite images from NRSC/ISRO and preparation of base maps for the whole city and its fringes using the images;
- (ii) Identification and inventory of all slum clusters of all descriptions in the urban agglomeration with the help of satellite image and other available data;
- (iii) Inventory of all possible vacant lands in each zone of the urban agglomeration that could be used for slum redevelopment/ rehabilitation development purposes;
- (iv) Development of Slum Map of every slum within the city and its fringes using GIS with CARTOSAT II images, ground level spatial data collected through total station survey, collating spatial information with respect to plot boundaries, network of basic infrastructure like roads, sewerage, storm drainage and water lines, etc and superimposing this on the satellite image and importing them into GIS platform as the first step towards the preparation of Slum Development Plans and Slum Free City Plan. This may be undertaken with the help of technical partners of NRSC/ ISRO/ other technical institutions/ agencies;

- (v) Identification and engagement of Lead NGO/ CBO to guide and anchor community mobilization for the purpose of slum survey, (May be more than one NGO/CBO in different slum zones) of the city. These Lead NGOs/ CBOs should also be associated in slum survey operations and dialogues for preparation of slum level redevelopment plans;
- (vi) Conduct of Slum Survey based on the detailed formats (with or without changes) prepared by the Ministry of Housing & Urban Poverty Alleviation with the help of National Buildings Organization (NBO) – after due training of trainers, training of survey personnel / canvassers and canvassing. It would be helpful for community mobilization to pick as many canvassers from the sourced slum or nearby slum pockets;
- (vii) Collection of bio-metric identification data of slum dwellers based on the above survey (subject to guidelines issued by Unique Identity Authority of India (UIDAI));
- (viii) Entry of data from Slum Surveys in the web-enabled MIS application (to be provided by Ministry of HUPA), compilations and collation of data, preparation of Slum-wise, City and State Slum Survey Database and Baseline Reports. The MIS will assist in developing a robust Slum and Slum Households information System. (Guidelines and software for development of the MIS will be issued by the Ministry of HUPA);
- (ix) Integration of Slum MIS with GIS Maps to enable the preparation of GIS-enabled Slum information System that is to be used for the preparation of meaningful Slum Development Plans and Slum-free City Plan using a city-wide/zone-based approach. (Guidelines and software for development of GIS platform and its integration with the MIS will be issued by the Ministry of HUPA);
- (x) For each slum identified, slum Redevelopment Plan to be decided based on models like PPP development, infrastructure provision only, community-based development through Rajiv Awas Housing Societies, etc. this decision – making should necessarily be done with the involvement of the community after community mobilization and dialogue for deciding the model to be adopted. Each slum redevelopment plan should have the timeline against each of the activities; and

- (xi) Preparation of Slum-free City Plan should be based on the development plans for all slums and strategies for the prevention of future slums, including reservation of land and housing for the urban poor. The plan should contain timeline of activities for achieving slum-free city, phasing information and financial estimates against each of the activities.

The steps that will need to be adopted for guiding the State and City Governments in the above exercise have been described in greater detail in Annexure IV.

10.4.3. Slum-free City Planning Team (State Government/ULB)

It is suggested that the State needs to first establish a slum-free City/ Technical Cell at the State Nodal Agency level and in each city identified for the preparation of Slum-free City Plan. At the State level, the Secretary dealing with JNNURM/ RAY will head the Slum-free City/ Technical Cell, coordinated by the State Nodal Officer for RAY. The composition of the Cell will be decided by the State Government. At the city level, the Municipal Commissioner or Executive Officer of the Urban Local Body, assisted by the Additional / Deputy Commissioner/ Officer in charge of Slums/Urban Community Development/ Planning, will head the Slum-free City Cell, which will include the chiefs of all municipal departments. Each city included under RAY must be enabled to have a competent Slum-free City Planning / Technical Team which can undertake procurement and coordinate with various agencies such as : National Remote Sensing Centre (NRSC)/ Indian Space Research Organization (ISRO) and other Technical Agencies.

The Technical Cell at the State Nodal Agency for RAY/ Urban Local Body (identified for the preparation of Slum-free City Plan) may have the following experts on contract basis selected on a transparent process (monthly remuneration will be commensurate with qualification and experience – not exceeding Rs.75,000 per Month);

- MIS Specialist – 1
- GIS Specialist – 1
- Town Planning Specialist – 1

- Social development Specialist – 1
- Project/ engineering Specialist – 1 and
- Capacity Building/ training Coordinator – 1

10.5. Government of India's Support

The activities for which the Centre intends to lend support towards the preparation of Slum-free City Plans to States/UTs would include:

10.5.1. Financial Support

- Conducting Slum Surveys in cities based on the detailed formats worked out by the Ministry of Housing & Urban Poverty Alleviation with the help of National Buildings Organization (NBO), including training of trainers, undertaking training, canvassing and surveying for City/State MIS;
- Entry of data from Slum Surveys into MIS database, compilation and collation of data in MIS to aid preparation of City Slum-free Plans of Action;
- Development of City and Slum Base Maps using GIS- including cost of CARTOSAT II/ latest images, spatial total station slum surveys, integration of slum MID with GIS Maps (to enable preparation of GIS-enabled Slum Information System that is to be used to prepare meaningful Slum Development Plans and Slum-free City Plans), procurement of hardware and software at State and ULB levels based on recommendation by the Technical Committee;
- Engagement of consultants/ technical agencies/ institutions for the preparation of detailed Slum-free City Plans for each selected City/Urban Agglomeration;
- Engagement of Lead NGOs/CBOs to guide and anchor community mobilization for Slum-free City in the selected Cities/Urban Agglomerations;
- Carrying out biometric identification survey of slum-dwellers and hardware for the storage of bio-metric information (excluding issue of biometric identity cards to the slum dwellers) – duly taking into account the imperatives of the Unique Identity Card initiative; and

- Training programmers in Slum MIS/GIS, Slum Mapping, Slum Development/ Slum -free City and Slum-free State Planning, Project Management, Pro-poor Reforms etc. with the involvement of National Technical Institutions and National Network of Resource Centers.

10.5.2. Handholding/Capacity development support

The Ministry of HUPA will be involved in developing Slum-free City/State Plan e- Tools and Manuals covering the following to aid the State/city Governments:

- a. Slum Survey MIS – e- Tool (including storage of bio-metric information) and Manual for the use of the same;
- b. Tool for Slum Mapping using GIS – drawing up guidelines for Slum Mapping exercises and providing technical inputs to States/Urban Local Bodies;
- c. GIS-MIS integration and development of a dynamic tool “GIS-enabled Slum MIS” for being operated as a tool for Slum-free City planning and monitoring the implementation of slum- free City Plans and projects. Software and Guidelines are to be developed for integration of MIS-based on Slum Surveys covering spatial and socio-economic data with GIS-based Slum Maps based geo- spatial data from sources of remote sensing/aerial surveys and ground level corrections;
- d. Manual for use of latest gadgets, tools and techniques required for GIS mapping of slums within the framework of Spatial Planning for cities. The Slum Mapping exercised have to keep in view the Master Plan framework;
- e. Step-by Step Guidelines for drawing up Slum Development Plans, Slum-free City and Slum-free State Plans; and
- f. Guidelines for Reforms required to usher in Slum-free Cities and States.

In connection with the above activities and providing assistance to States/UTs as and when required, the Ministry of Housing & Urban Poverty Alleviation will establish a Technical Cell with composition and remuneration as indicated in para 4.3 and engage appropriate

personnel on outsourcing basis. For the purpose of capacity building and training to State/City level officials and non-officials in various guidelines, manuals, tools and techniques for Slum-free City Planning, the Ministry will support select nodal institutions with specialized Capacity Building & Training Cells. These institutions would undertake capacity building/training Cells. These institutions would undertake capacity building / training programmes and provide handholding support to States/UTs in the following areas; (a) GIS Mapping, (b) Slum Survey & MIS, (c) Slum-free City Planning and (d) Legislative Framework for inclusive City Planning.

10.6. Other Modalities of Scheme

- 10.6.1. The Slum-free City Planning scheme will be implemented under the guidance of National Steering Committee under the chairpersonship of Secretary (HUPA) – composition at Annexure V. This Committee will steer and monitor the entire process of preparation of Slum-free City Plans by States/UTs in a time – bound manner. A Technical Committee (composition at Annexure VI) Will guide the States/UTs through the formulation of operational guidelines in technical, costing, procurement of hardware/software, planning and other aspects and will assist the National Steering Committee.
- 10.6.2. States/UTs will be required to send Detailed Proposals seeking support under the Slum-free City Planning- Rajiv Awas Yojana scheme which will be considered by the Central Sanctioning & Monitoring Committee for JNNURM/ RAY. Following the sanctions, funds will be released by the Ministry of Finance/Housing & Urban Poverty Alleviation.
- 10.6.3. The National Steering Committee for Slum-free City Planning- Rajiv Awas Yojana will monitor the financial and physical progress under the scheme.

Slum – free India Vision

Some Key Policy Issues to be addressed on Priority

Urban Planning:

City master plans follow an exclusionary model that reserves land for housing for high and middle income groups, commercial, institutional, recreational and other uses, with no earmarking for Economical Weaker Sections and Low Income Groups. These plans are not in consonance with the income distribution structure of cities and towns. The norms of planning including density and development controls favor the comparatively better off sections. These factors, coupled with sky-rocketing urban land prices, have squeezed the urban poor out of formal urban land markets. Slums are an inevitable outcome of this deficiency in urban policy and planning. It is necessary that the master plans make provision for EWS/LIG categories by treating them as distinct segments for the purpose of land use and urban planning. There is also a need for 'small lot zoning' in layouts for housing approved by city authorities, creating EWS and LIG plots along with MIG and HIG. The population density norms also required a re-look, not only to rationalize them across cities, but, in understanding of the basic tenet that the poor are deprived of housing where land values are high, to enable better utilization of valuable land by building vertically on it. It is necessary to catalyze and assist the review of these issues with capacity building and expertise.

Land:

Cost of land is a very significant component of the cost of housing. Not only the master plans but also state, development authority and urban local body policies in the past have made no provision for ensuring adequate supply of serviced land towards housing the EWS and LIG segments. In fact, some states and urban development authorities have resorted to auction of the limited land available with them in cities, setting exorbitant benchmarks for the market price of land. There is need for a well-defined policy for allocation of land to EWS and LIG segments to compensate for the 'historic lack of earmarked space' for them in the formal master plans. There is also need to continue, till completion and internalization into practice, the reform of JNNURM for reservation of 20%-25% of developed land in all new housing colonies for EWS/LIG housing. In respect of slum areas, and in line with the practice followed globally in upgrading slums, the occupied land or a part thereof should be allocated to

the slum-dwellers to enable them to have access to housing and basic amenities. Both reforms need to be pursued.

Housing & Infrastructure:

Affordable housing and provision of basic infrastructure in urban areas, especially slums, would generally require the intermediation of civil society, government and private entities that can engage the community, undertake planning, reconfigure slums to enable cost-effective provision of infrastructure facilities and construct group housing colonies. Given the massive needs for affordable housing and the capacity constraints faced by public agencies like housing boards, urban development authorities and municipalities to take up group housing on large scale, it is necessary to involve private sector entities in the creation of affordable housing stock on ownership, rental or rental-cum-ownership basis and in scaling up the programme to the desired scale. There is also a need for resource mobilization and earmarking of resources by public agencies to meet the cost of affordable housing, civic infrastructure and services for the urban poor where the private sector participation is not possible.

Financing:

Banks and other financial institutions are reluctant to lend to the EWS/LIG segments for affordable housing in view of perceived credit risks, these categories having no credit history and due to difficulties of foreclosure of loans. There is need for credit enhancement through appropriate fiscal, legal and institutional mechanisms, including intermediation of public and private housing agencies to ensure the flow of capital for this priority programme.

10.7. Admissible & Inadmissible Components

Admissible Components

The scope of RAY envisaged is as follows

- i. Project involving-
 - a. Integrated development of all existing slums, notified or non-notified, i.e, development of infrastructure and housing in the slums/rehabilitation colonies for the slum dwellers/urban poor, including rental housing;

- b. Development/improvement/maintenance of basic services to the urban poor, including water supply, sewerage, drainage, solid waste management, approach and internal road, street lighting, community facilities such as community toilets/baths, informal sector markets, livelihoods centre, etc. and other community facilities like pre-schools, child care centres, schools, health centres to be undertaken in convergence with programmes of respective Ministries;
 - c. Convergence with health, education and social security schemes for the urban poor and connectivity infrastructure for duly connecting slums with city wide infrastructure facilities/projects; and
 - d. Creation of affordable housing stock, including rental housing with the provision of civic infrastructure and services, on ownership, rental or rental-purchase basis.
- ii. Capacity Building, Community Mobilisation, Planning & Other Support.

Note: Land cost will not be financed except for acquisition of private land for schemes/projects in the North Eastern and hilly States, viz. Himachal Pradesh, Uttarakhand and Jammu & Kashmir.

Inadmissible components

Project pertaining to the following will not be considered for support under RAY:

- i) Power generation
- ii) Telecom
- iii) Employment generation programmes and
- iv) Staffing

10.8. Rajiv Awas Yojana: State Plan of Action

1. The state Slum Free Plan of Action would need the State to prepare legislation for the assignment of property rights to slum dwellers/urban poor as the first step. The State Nodal Agency for RAY will coordinate all legislative and policy formulation/implementation aspects of RAY. The legislative framework would cover all legislative issues necessary for redevelopment / rehabilitation of slums, including spatial planning norms covering density, development controls and other parameters.

2. The State plan of Action would require identifying the cities intended to be covered in five years. And their phasing, and commit to a 'whole city' approach, so that an integrated and holistic plan is prepared for up gradation of all existing slums, notified or non-notified, in each identified city. Within each city, in each slum taken up for redevelopment, a holistic coverage would be required, with provision of all basic civic infrastructure and services as well as decent housing, with emphasis on planned layouts (after reconfiguration of plots as per existing / modified building byelaws wherever necessary) and on total sanitation (by provision of individual toilets and water supply to each household). With regard to housing, flexibility of approach would be available with the state as to the manner of construction and arrangement of funds for construction, viz. to follow a beneficiary-built housing model with design and technical support from the Municipality/State, or to construct housing through state parastatal or private partners or by delineating a mix of methods. The POA would be required to describe the model proposed to be followed in each slum, the efforts for obtaining the model proposed to be followed in each slum, the efforts for obtaining the community's participation and the financial strategy for holistic development. Annexure VII provides at list of possible models that States may consider.
3. The State POA would need to be in two parts, part – 1 regarding the up gradation of existing slums and Part-2 regarding the action to prevent new slums with a 20 year perspective. In part-2 the plan would need to assess the rate of growth of the city, and based on the numbers specify the action proposed to be taken to obtain commensurate lands or virtual lands and promote the construction of affordable EWS houses as to stay abreast of the demand. This part would need also to make necessary legislative and administrative changes to enable urban land expansion, and in town planning regulations to legislate reservation for EWS/LIG housing in all new developments.
4. The Slum-free State Plan would include the following suggestive steps/actions:
 - (a) Preparation of State – wide Legislation –
 - For Assignment of Property Rights to slum households: the legislation should provide that the legal title is conferred either on the woman or jointly with the main male householder Provision may be made for the legal entitlement to property to be on the house or on the land, as suits the cityscape. The title must be mortgagable and heritable, so as to enable access to formal credit mechanisms. It must be alienable, after a certain number of years as decided by the State, during which period of time transfer back to the State should be permissible.

(b) Other Legislations necessary would be for –

- Legislative changes for commitment to reservation of 10-15% of land in every new public/private housing projects or 20-25% FAR, whichever is greater, earmarking of 25% of municipal budget for the urban poor and provision of 7 point basic services and entitlements to the poor as enlisted under the 7 point Charter of JNNURM in order to make serviced land available for the poor for the future, and to prevent slums. Several states have issued executive orders as part of JNNURM reforms for this purpose-action would be required to give them the force of law;
- Amendment to enactments governing town planning, urban development and municipalities to enable revision of population density norms, FAR, land use, tec. And permit local zoning and other relaxations required, for accommodation of in situ regularization to incentivize private sector participation wherever reasonably feasible and , for future requirements;
- Amendment to legislations under which land is obtained for expansion of urban areas, to enable expansion of urban land at the expected rate of growth of the city. One of the main reasons for the haphazard growth of towns is the housing shortages and the slow pace of planned expansion, resulting in the mushrooming of unauthorized colonies that live outside the ambit of municipal services or taxation; and
- Amendment to Rent Control Legislation, at least to the extent that will enable new rental housing stock to be created, and on terms governed by the market.

(c) Identification and phasing of towns and cities to be covered; the states may decide if they want to cover all the towns and urban areas, or decide to choose on the basis of size or other criterion, taking PPP potential as one clear reason for the particular decision, this would require that Slum-free city plans are prepared for the mission cities and cities with the higher population and growth rates in the first instance. In the phasing within a city, priority in redevelopment would be required to be given to slums where the conditions are the most inadequate. The eligibility for central assistance of unauthorized colonies or regularized unauthorized colonies that are unserved by municipal services will, however be predicated on the implementation of Part 2 of the State POA.

(d) For each city identified, a whole city approach would be taken, to map all the slums, notified as well as non-notified, and all unauthorized colonies and

regularized unauthorized colonies unserved by municipal services. In each city, a total slum survey would be carried out, with biometric identification, to identify each slum dweller (resident, rather than owner of the shanty) for purposes of conferment of rights. Identification would be made of slums that can be upgraded holistically on site, with or without enabling changes in land use and FAR; and those which are untenable and have to be relocated. With a whole city approach, vacant land inventory would be made. A citywide plan would be made to shift untenable slums to the nearest possible available vacant land or notified slum which has the space to receive them. Such slum mapping would also include mapping of the ownership categories of the encroached land viz. municipal, state, central government, public sector undertaking and private in order to find or work out solutions for regularization and reconstruction suitable to each ownership category, ensuring land use modification, additional FAR. Wherever infrastructure permits etc., to create virtual space and provide incentives, the whole city approach would ensure that no slum is left out of the process of reconstruction and rehabilitation, either in situ or by relocation to another appropriate site.

- (e) In each slum, taking a whole slum approach, primacy would be given to the provision of infrastructure within a declared time frame. Every effort would be made to provide infrastructure, civic services on par with the rest of the town, and to create sufficient green spaces and civic amenities of community centre, livelihood centre, school, medical centre, etc wherever these are lacking; reconfiguring the arrangement of houses and plots to enable this. Special emphasis must be placed on the provision of total sanitation with individual water sealed toilets and water connections to each household. External connectivity for sewerage and water mains, wherever available in the vicinity, would be provided for, either under the JNNURM sub-mission of UIG or UIDSSMT or directly.
- (f) In addition to existing slum up gradation, the commitment to a Slum-free Status would need to be spelt out by delineating the steps proposed to be taken, the projects to promote construction of affordable houses and the time lines. Such steps would include:
- Assessment of the rate of growth of urban population in different cities and agglomerations;
 - Assessment of the requirement of land and housing over the next two decades to meet this requirement taking into consideration the current population densities and available infrastructure;

- Review of the current urban land expansion approaches, models and mechanisms, and the delineation of the proposal for revision to enable expansion at the envisaged rate;
 - Proposal to tackle the existing housing shortages and to meet the future requirements, especially for the EWS/LIG who are otherwise forced into extralegal spaces, and preferably through private sector and state parastatal involvement;
 - Review of and proposal for revision of the town planning model (largely of differentiated land use and sprawl with thought to the location of EWS living spaces along transport nodes and corridors) and the population density norms; and
 - A timetable to introduce legislation to enable orderly town planning and growth.
- (g) Capacity building for town planning, and for review and revision of the urban land planning and development approaches must necessarily be a part of the action plan.

10.9. Guidelines for Preparation of City Slum-Free Plan of Action

City slum-free plans of action will require slum redevelopment/rehabilitation plans based on (a) survey of all slums- notified; (b) database creation of slums using the geospatial technologies; (c) integration of spatial and socio-economic data; and (d) identification of redevelopment model proposed for each slum. It will also require policies and measure for the non-proliferation of growth of slums in the future.

States/UTs may consider the following steps for preparation of slum-free city / slum redevelopment/rehabilitation plans subject to the stipulation that the entire process of slum-free city planning will have to be professionally managed and also be participatory, duly involving the slum communities, NGOs, CBOs, municipal elected representatives, including Mayors and Municipal Chairpersons, experts etc.

Step 1: Preparation of Geo-referenced City Base Map

1.1 Inventory of existing Spatial Data

The slum-free city cell at the urban local body shall build an inventory of existing spatial data available with various agencies in partnership with the Technical agency (ies) engaged for GIS Mapping. The cell shall collect the existing digital/ hard copy maps/data from state Governments, urban local bodies, national remote sensing centre (NRSC), survey of India (SOI), National informatics centre (NIC) etc. in case such maps/spatial data (which meet the technical requirements specified by the technical committee at the national level) already exist for portions of urban agglomeration with different urban authorities or specialized agencies (e.g. DMRC in the case of Delhi , then these will need to be brought onto a common platform and integrated. The usability and accuracy/reliability of existing maps/spatial data would need to be checked through ground truthing exercises while integrating them.

Based on the availability of existing data-including those available from national urban information system (NUIS) scheme of Ministry of urban development (MOUD) being implemented by town & country planning organization (TCPO)- and their usability, fresh data acquisition and the modalities for collection of the same will be demined by the slum free city cell in consultation with the state level nodal agency. The methodology, scale of mapping and standards for the above will be as prescribed by the national technical committee.

1.2 Obtaining satellite image of the city and its Fringes

1.2.1 CARTOSAT images (CARTOSAT/CARTOSAT II images of 2.5 meter / 1 meter resolution respectively) from NRSC/ISRO may be procured for city and its urbanizing fringes. i.e. planning area boundary in order to prepare base maps. The likely urban extensions beyond the existing municipal limits in the next two decades may need to be included while procuring satellite images. This will be necessary in order to address the issue of slums in fringes (peri-urban) areas that are most likely to develop as the city expands. The demarcation of

planning area (for which images need to be procured for mapping purpose) has to be done with the full involvement of the urban local body and the metropolitan planning committee/ urban development authority (or authorities in the case of larger city agglomerations). In the case of smaller cities/towns not falling under the jurisdiction of any urban development authority, delineation of the planning area for mapping purpose may be done in consultation with the municipality and district urban development agency/ district office of town planning department/ district planning committee.

- 1.2.2 The slum free city cell in the urban local body/state nodal agency will procure the required imagery from NRSC/ISRO and engage one or more technical agencies- partners of NRSC/ISRO such as state remote sensing center, other technically competent agencies in the public and private sectors and reputed institution for preparing base maps using the images.

1.3 Geo – referencing of satellite images and preparing base map for entire urban agglomeration area

Base map for the demarcated area of the urban agglomeration (planning area) needs to be prepared at 1:5000 scale or other appropriate scale in GIS format using a standardized reference frame (which defines datum, projection) as decided by the national technical committee. This will be done by the slum free city cell with assistance from the technical agency/state town planning department/urban development authority/state remote sensing centre and others.

1.4 identification & demarcation of slum areas & vacant lands on base map

- 1.4.1 Criteria for identification of slums as provided by the state government under the relevant slum act or policy/executive instructions will be followed by cities. Slum-free city cells in the urban local bodies, with support from revenue and other authorities, including urban development authority will prepare the list of slums in their respective areas (ward/zone-wise) which meet the above criteria. Cross-examination of the list in each zone needs to be undertaken based on the following exercised:

- i. ULB list will be cross-checked with satellite image to check for any missing slum pockets, which will be added to the list.
- ii. Simultaneously, satellite images will also be updated by identifying those slums which are not identifiable by their physical characteristics in the images- with the help of municipal officers and NGO/CBO representatives who will undertake ground trusting exercise.

Note: ward and one boundaries will be added to the map and slums will be categorized zone wise. Where administrative/ planning zones do not exist, the same will prepared taking some contiguous wards into one zone of appropriate size.

1.4.2 reputed NGOs/CBOs (with experience of working in urban slums) may be involved in both the above exercise for the identification of slums in each zone in the city and lead the community mobilization process. Ideally, these lead NGO/CBOs should ne identified and engaged through a transparent process during this stage, as the community rapport building and mobilization process have to begin before the total station and socio-economic surveys start.

1.4.3 Vacant lands, which offer possibilities for accommodating slum population in a zone/within the same area, will need to be identified during this stage. Thus, an inventory of all possible lands that could be used for slum redevelopment will be made and marked out on the base map (zone -wise). The areas of vacant lands will have to be cross-checked at a later stage as to their appropriateness and adequacy to house the existing slum population, after exact data on slum densities' are available from slum level spatial and socio-economic surveys. Other emerging city needs which are likely to arise in the future and which are crucial to city planning (example; transport nodes, BRTS , MRTS etc) also need to be kept in mind while making an inventory of vacant lands for the purpose of housing the slum-dwellers.

1.5 Delineation of slum areas and mapping slum infrastructure with total station survey

1.5.1 After slum pockets are identified, detailed footprint of each listed slum settlement and parcel of vacant land available in the city will need to be mapped using total station survey, on a scale of 1:500

of larger scale as decided by the National technical committee. This will be geo-referenced with the base map and the exact area dimensions and contours of the slum pockets would have to be delineated on the base map and satellite images.

- 1.5.2 To determine the vulnerability of the slums to floods, it is necessary to create a digital elevation model of the slum and also the adjoining areas. The same is also to be done for inventoried vacant lands available in the city to identify their usability for relocation purposes. For this it is essential to carry out a contour survey, of appropriate intervals as decided by national technical committee. This would be particularly relevant to settlements in hilly/ uneven terrains or settlements in flood plains. Those slum area lands (or portions thereof) found vulnerable should be declared as untenable. Similarly all the vacant lands which are prone to natural hazards like flooding, landslides etc. shall not be used for slum relocation purposes.

Note: it is important that lead NGO/CBO start community mobilization exercise in each slum pocket simultaneously with or prior to the total station/socio- economic survey in order to avoid conflicts arising from mis-communication with the slum communities during the survey process.

- 1.5.3 During the total station survey various infrastructural facilities like water supply, drainage, roads, street lighting, schools, hospitals, community halls, etc. and other features, including underground utilities will also need to be mapped covering the slum pockets and their vicinities, to plan for the provision of basic services for slum dwellers in later stages, the underground utilities like water supply, sewerage/drainage, gas and cables can be mapped using ground penetrating radar. All the spatial and non-spatial infrastructure data may be captured using a combination of GPS technology, ground penetrating radar (GPR) and field survey. The utilities data thus captured will need to be integrated with the base map database. The same exercise will need to be done for vacant lands identified in case the lands are to be used for development and relocation of slum households.

Note: if the slums are very dense, total station surveying cannot be adopted due to indivisibility problem. In such a case, a combination of

plane table survey, total station survey and / or satellite data may be considered.

1.5.4 total station survey and other surveys could be a joint effort of the survey team of the GIS technicians of the Technical Agency/Bidder/ vendor and the slum-free city cell / town planning wing of the urban local body (ULB) the ULB personnel and representative from lead NGO/CBO may accompany the survey team to guide them in identifying various infrastructure networks and render help in the collection of required data.

1.5.5 The technical committee at the national level will provide guidelines for total station survey and mapping of various infrastructure and other features.

Step 2: Slum Socio-economic survey & preparation of slum MIS

2.1 House holds Socio-economic & Bio-metric surveys

2.1.1 Socio-economic survey will capture the details of slums and slum households in various slum pockets – land status, demographic profile , housing status, economic status, occupational status access to infrastructure, household level information etc. the national Building Organization (NBO) has circulated model formats for the conduct of slum, slum households and livelihoods surveys in cities and also a manual for the training of functionaries in slum survey operations and compilation of database. The survey formats may be adopted, with or without suitable modification as considered appropriate, by the state / UT concerned.

2.1.2. The bio-metric survey will capture the unique bio-identification marks for the head of the house hold and other member. This will be subject to the guideline issued by unique identity authority of India (UIDAI)

2.1.1 Data entry, data compilation, collation and analysis processes will take place simultaneously at the ward/zone level for all the information generated in the slum surveys. Data will be entered into a MIS format based on national guidelines/ software developed by the ministry of housing & urban poverty alleviation.

2.2 Mapping Land ownership/Tenure Status

Land ownership/legal title may not belong to a single entity for the entire slum pocket or parcel of vacant lands. Therefore, mapping the land ownership titles/ land tenure status for parcels of land within the demarcated slum area and vacant lands identified is necessary. This involves collecting information on land ownership details and plot boundaries from land revenue/ municipal records for the entire slum pocket and vacant lands (being identified for relocation). While doing the exercise, land parcels with unclear/ disputed titles will need to be identified to initiate dispute resolution process for getting clear land titles. All plot boundaries showing ownership/tenure status will be digitized and geo referenced.

Note: Cities may combine the spatial and socio-economic surveys together or take them up separately depending on availability of competent and trained total station survey/slum survey teams.

Step 3: Integration of spatial data and socio-economic (including Bio- metric) information at slum/city level to create GIS-enabled slum MIS

Digitized maps from total station survey, slum contour survey, and land title information, socio-economic survey etc will all be put into different layers in GIS platform and integrated to enable data analysis using different parameters for the preparation of slum-free city plans. This step will involve the integration of slum socio-economic and biometric information generated from GIS enabled slum MIS, slums can be categorized based on parameters such as land value, slum density, socio-economic characteristics of slum dwellers, etc. this will enable data analysis to be done at different spatial scales to arrive at different typologies of slums and facilitate informed debate of the choice of development model/option to be adopted.

Step 4: Formulation of Slum Redevelopment Plans

4.1 Categorization of Slums- Evaluating Options available to slum communities for redevelopment.

- 4.1.1 The categorization of slums on a zonal basis using GIS-enabled slum MIS would help in formulating separate redevelopment models/mechanisms for different categories of slums. In this context, due consideration will have to be given to tenability / untenability, existing density of each slum pocket within a zone, additional density that can be accommodated, etc. Slums and vacant lands will first be categorized as tenable, semi-tenable or untenable. Untenable slums/ vacant lands will be only those which are a 'safety' or 'health hazard' to the inhabitants or their neighborhoods, even if redeveloped. Such untenable sites or portions will be earmarked for relocation to other redevelopment / vacant sites, preferably within the same zone.
- 4.1.2 The slums and vacant lands will need to be further classified into sub-categories based on the land ownership information and land value (market price) to decide the redevelopment model to be followed for each slum pocket within the zone thus, the options available for slum redevelopment would be formulated by the slum-free city cell /ULB based on critical considerations taking into account the key aspects-tenability, density, ownership and land price.
- 4.1.3 Guidelines will be issued by the National Technical Committee to identify untenable sites and for categorizing slums.

4.2 Reconfiguration of Slums – Choice Slum Redevelopment Model

- 4.2.1 Based on the spatial analysis and situation assessment done, a participative process will need to be undertaken with slum communities with the assistance from Lead NGO/CBO to decide on the choice of the redevelopment/ rehabilitation model-PPP, Viability Gap Funding, by Community, by Governmental Agency, etc. Annexure VII provides an indicative list of alternative slum redevelopment/ rehabilitation /affordable housing models. The dialogue for choice of the model will also explore the possibilities of relocating slum households from high density/ untenable slums to low-density tenable slums within the same zone with incentives provided for relocation, while undertaking dialogue and deciding the slum redevelopment model due consideration must be given to exploring PPP and Viability Gap Funding options. Slum that can be developed on PPP model will be given preference.

4.2.2 Once slum communities decide the option best suited to them, the reconfiguration of slums and marking of internal plot boundaries will be done based on land pooling/ amalgamation mechanism, taking in to account the plan for internal infrastructure: water supply sewerage; storm drainage; solid waste management; roads; power transmission lines and substations; parks and playgrounds; education and health infrastructure; livelihoods centers / workplaces; informal sector markets etc. External infrastructure connectivity should also be planned simultaneously with internal infrastructure.

4.2.3 Each slum redevelopment/ relocation plan will make arrangements for transit/ temporary shelter as a part of the redevelopment/ relocation exercise with definite timelines before the redevelopment/ relocation process is initiated.

Step 5 Formulating Slum-free city plan & review / modification of master/ development plan.

5.1 Formulation of Slum-free city Plan

5.1.1 Slum-free city plan (including the phasing of the plan) would emerge after amalgamating all the different slum redevelopment plans and mechanisms proposed for redevelopment/ rehabilitation of various categories of slums in the city.

5.1.2 The slum-free City Plan is a short-term development plan for a period of 5 years and shall indicate the manner in which the city shall be made slum-free by carrying out redevelopment/ rehabilitation of slums and undertaking preventive measures. The Plan shall include the existing status and proposals for Land Use and Infrastructure (external and internal). It will also include the redevelopment/ rehabilitation models proposed for adoption.

5.1.3 The contents of Slum-free City plan may cover the following aspects:

- Delineation of areas under slums and proposed relocations areas including vacant lands identified and their suitability for housing the slum-dwellers;
- Spatial, demographic and socio-economic profile of slums;

- Land ownership (existing and post-redevelopment) of the slum areas and the proposed relocation areas/vacant lands;
- Land values of slum area (based on land values in the vicinity obtained from registration/ revenue department) and proposed relocation areas;
- Land use, FSI and other details of the slum areas and the proposed relocation areas (including any charges proposed in development control regulations to facilitate slum redevelopment or relocation);
- Physical infrastructure within and in the vicinity of slums of proposed relocation areas including connectivity infrastructure: road network (within and in the vicinity of slums), other transport network (in the vicinity of existing slum pockets and proposed relocation pockets), water supply, sewerage, drainage, electricity and communication networks and other physical infrastructure facilities;
- Social infrastructure facilities (education, health, banking, community hall, livelihoods centre, informal sector market etc.) in or near the slum pockets and proposed relocation sites;
- Shelter – existing status with respect to age, condition and height of structure and proposed changes including redefined plot boundaries:
- Tenorial Status – analysis of the existing tenorial arrangement between the owners and occupiers or any other parties involved; proposed tenorial arrangements, including assignment of property rights etc;
- Choice of development model for housing and/or infrastructure – PPP, Beneficiary Built, Community – based, Public agency-led, etc;
- Resource mobilization strategy;
- Implementation strategy, including phasing and monitoring and community mobilization;
- Measures for preventing future growth of slum – reservation of land for EWS /LIG in all future housing colonies, undertaking affordable housing in partnership, adopting slum-free city policy, addressing regional and urban planning issues to make the same inclusive, tec.
- Public participation and stakeholders consultation undertaken and mechanisms put in place for resolving conflicts; and
- Institutional framework for the implementation of slum-free city plans – development of key institutions and building essential capacity.

5.2 Review /Modification to Master Plan/CDP

Based on the slum free plan of action the development plan/ master plan/CDP of the city will be reviewed / modified wherever necessary to accommodate the slum redevelopment/ rehabilitation plans.

11. OBJERVATIONS AND RECOMMENDATIONS

11.00 This study has brought in focus certain major areas of concern. These are primarily identified as follows.

1. Time lag between development of infrastructure and housing construction activities.
2. Slow pace of development of housing for the poor and slum rehabilitation.
3. Inability of master plan to assemble land for affordable housing through development plans and development control rules. For example inability to have zonal development plans.
4. Feedback, review and rationalization of TDR system in operation. Success of TDR in promoting affordable housing is yet to be established.
5. Measures for public participation in housing delivery through mechanisms available to Pune corporation. For example inability to promote Co-Operative sector in weaker section and low income housing, where decision making process is with users.
6. Lack of incentives to encourage rental housing.
7. Policy for development of Wada's – a housing typology unique to Pune city.
8. Policy, planning and programming for Pune central area in the context of housing.
9. National and state housing policy implementation.
10. It is essential that problem of Pune city has to be seen in the context of Pune metropolitan region. There is considerable interdependence between PMC, PCMC and PCNTDA area. People live in PCMC work in PMC area and vice versa. Transportation linkages (rapid) and high level amenities like hospitals and colleges draw the users irrespective of administrative boundaries. It is therefore recommended that it will be appropriate to have a unified metropolitan development authority to tackle development problems. (as per agreed terms, scope of this study was limited to PMC area only)

11.1. National and state housing habitat policy implementation.

1. Major focus of National housing policy has been on functioning of urban local bodies as facilitators than providers. In this context it is important for PMC to stop engaging itself in direct construction of housing and built amenities. Main role of PMC in the context of affordable housing would have to be land assembly & infrastructure development or its facilitation.
2. PMC should take measures to incorporate public participation system particularly in slum rehabilitation projects. It is important to insist on formation of eligible user co-operatives and involve them in the planning and implementation process.
3. As a facilitator of housing provision, PMC should take lead in making available finance required for, in situ slum redevelopment projects for user co-operatives in slums. PMC should tie up with banks, state or national level agencies for grant or loans where PMC could organize collaterals with adequate safeguards. PMC's efforts in these directions in Bibwewadi low income housing project are examples to be revived.
4. To be able to take lead as above it will be necessary for PMC to build required capacity of the staff. This can be done through participation in state or national level training programs. In fact PMC should have a vigorous human resource development (HRD) group to train in-house as well as external workers including NGO's.
5. JNNURM is a broad based and multi-functional program which includes funding for such activities. While implementing JNNURM schemes funding for HRD activities should be availed.

11.2. Development plan and DCR based activities

1. Identification of adequate land for housing. The city of Pune needs adequate land for future development in housing. The land requirement for various income group categories is shown below in table No. 10.2
2. This land availability would be in the direction towards Lohagaon, Samgamwadi, Pashan and Hadapsar.

Table 11.2 Land requirement for future housing development

Income Group	Total no. of		Area of Plot size per DU for Plotted (sq.mt.)	Net density considered for group housing (DU/ha)	Area Required for	
	Plotted Development	Group development			Plotted Development (ha)	Group Development (ha)
EWS	29087	261786	30	550	87.262	475.974
LIG	19803	112218	100	450	198.033	249.374
MIG	43244	129733	225	350	972.995	370.665
HIG	25241	37862	400	250	1009.65	151.447
TOTAL LAND AREA REQUIRED (ha)					2267.94	1247.46

3. Vacant land where no development proposal is coming up for a period of five years from a date to be stipulated by PMC , should be taken over by PMC, to constitute "land bank" for economically weaker and low income housing groups. Such land would have to designated in Master Plan for Affordable housing and remunerative uses and not for amenities or open spaces. This land can be allotted to NGO for PPT under government programmes like JNNURM.
4. Re densification is another way for generation of land for shelter. Most of the G or G+1structures in the main city can be granted more FSI to reconstruct housing not more than G+3storied construction.
5. Large institutional areas that need not be in developed city, need to be relocated. Substantial land in Pune city is occupied by defense. Originally these lands are located on outskirts of the city for security reasons. The phenomenal growth of the city has brought them in the middle of the developed city which is adversely affecting the efficiency of transportation system. A detailed study of defense and railway land needs to be undertaken to determine which land can be relocated. Vacated land to be made available for development of housing and related amenities.

11.3. Development plan and DC rules modifications

1. Recommended policy for FAR

FAR increase has to be cautiously recommended. As a matter of policy FAR to be recommended should be higher only in case of non housing and MIG/HIG housing. FAR to be recommended should also be based on the width of the road fronting the plot, efficiency of vehicular access and overall parking norms. If the access through road is satisfactory, in case of commercial plots above 5000 sq.m and minimum road width of 30 m, full and proper parking provisions must be insisted at rate of 2 PCU per 100 sq.m and FSI of 3 to 4 can be provided. Some suggested norms for housing are as follows.

Plot area in sq.m	FAR	Parking norms	Access road width
10000 up to 5 Ha	3	2 PCU for 100 sq.m	24 m
4000 to 10000	2.5	1.5 PCU for 100 sq.m	12 m
Less than 4000	1.5	1.2 PCU for 100 sq.m	Less than 12 m but more than 7.5 m

- For house construction of EWS and LIG houses (i.e. up to 40 sq.m), FSI permitted should be 1.5 subject to total built up area of the existing dwelling units, whichever is higher. Maximum height permitted should be such that provision of lift is not required.
- FSI to be permitted in congested area should be limited to 1.5. No increase in existing built up area to be permitted and excess FSI should be under TDR. For housing development height should be restricted where lift is not required. Incentive FSI should be provided only in case of front road width less than 7.5 m, provided owner surrenders a depth of 1.5mts. along the road so that road width can be 10.5 m at least, where such surrenders takes place on either sides of the road.

11.4. SRA housing for urban poor

Concept to be incorporated as DC rules while sanctioning the SRA project.

1. Permit low rise high density housing where lift is not required.
2. Minimum distance between two parallel buildings to be as recommended in National building code. Idea is not to create narrow vertical shafts.
3. On site construction to be permitted should not exceed existing built up area or FSI of 1.5 whichever is higher.
4. Out of 2.5 FSI unused FSI will be transferable.
5. 50% transferable FSI can be used for remunerative purposes including housing with per unit built up area above 60 sq.m. and commercial area etc.
6. While implementing 3^d point above if provision of lift is necessary it can be provided subject to a condition that promoter/builder creates a maintenance fund where that will fetch the monthly amount required for maintenance.
7. A housing co operative, responsible for the maintenance fund. should be created

11.5. Housing in Metro corridors

1. Development Plan to include appropriate land reservation on either side (500 mts.) of the Metro corridor, stating the F S I value. Commercial development to be permitted should not exceed 30%. Rest of the housing should be with built up area per unit less than 60 sq.mts. This will facilitate availability of land (with better accessibility) for housing. There should be height relaxation up to 100 m and density relaxation of 666 HH/ ha.
2. Housing having 60 sq.m and above, built up area per unit, can be high rise

11.6. Redevelopment of Wada – a unique housing typology of Pune city.

1. Corporation should recognize the importance of this unique typology. To the extent possible strengthening and retrofitting proposal with adoptive reuse such as hostels, small tenements where parking is not required should be considered. In such cases a transferable FSI, equal to existing built up area be permitted.

2. In case of Wada's having smaller plot area where redevelopment is not feasible on its own, redevelopment through plot amalgamation be permitted.
3. In case of access by roads smaller than 7.5 m, half the difference in road width should be surrendered for the purpose of having a road width of at least 7.5 m. in such cases transferable FSI to the extent of 30 % should be permitted.
4. Revised building design should reflect the essential character of Wada such as central court yard.
5. Since most of the Wada's are in congested areas of the city, FSI to be permitted should not exceed 1.5

11.7. Rental housing to be promoted

This is necessary as stop gap shelter need for fresh migrant population, affordable housing solution and student hostel.

Sr. No.	Particular
1	For construction of Rental Houses on unencumbered land by land owner or any other agency approved by PMC within the limits of PMC & suburbs of Pune with tenement size up to 60 sq.mt. the FSI shall be 2.50 subject to a maximum density of 450 dwelling units per ha and 15 mts height
2	For construction of Rental Houses on unencumbered lands by PMC on land vested with them within the limits of PMC & suburbs of Pune with tenement size 25 sq.mt. the FSI shall be 3.00, with 25% FSI shall be allowed for commercial use which can be sold in open market to subsidize the component of Rental housing.
3	PMC shall be the implementing Agency and owner for Projects of Rental housing. Municipal Commissioner, PMC shall be Chief Executive officer of such project. The Rental Housing Project for which PMC is the PIA (Project Implementing Agency) shall be a project for vital public purpose.
4	A 25 sq.mt. carpet area self contained residential unit to be given on leave and license for a period to be decided by PMC at a monthly charge to be decided by Municipal Commissioner, PMC considering the location of the project and type of residential unit, cost of construction, market condition and any other expenses.
5	If Rental Housing project is taken up on an unencumbered plot, Transferable Development Rights (TDR) equivalent to the plot area shall be sanctioned to the land owner who spares the plot for this purpose as Land TDR.

Sr. No.	Particular
6	Permissible FSI on site for construction of Rental Housing Project shall be maximum 3.00 and shall be used only for rental housing.
7	There shall be Welfare Hall and Balwadi in each project as a part of the construction of Rental Houses component. It shall be at the rate of 25 sq. Mts. for every multiple or part of 200 residential units but located so as to serve all the floors and buildings equitably and shall not be counted towards the FSI even while computing 3.00 FSI on site. This shall be given free of cost to the PIA i.e. PMC
8	There shall be manager's office space of size 25 sq.mt. carpet area for every multiple or part of 500 rental units located as desired by MC, PMC in the project as a part of construction of Rental Houses component and shall not be counted towards the FSI even while computing 3.00 FSI on site. This shall be given free of cost to the PIA i.e. PMC
9	Density shall be maximum 750 Rental units of 25 Sq.mts. carpet area per net hectare.
10	Plot of minimum 500 sq.mt. is required for the project. However, it may be relaxed with the special permission of Municipal Commissioner, PMC
11	Property tax concessions to be determined by corporation and should be offered as long as property is as rent.


11.8. Special provisions

1. Unused TDR, after a period of two years from a cut off date, should be made taxable like vacant land tax
2. Corporation can consider forming a land bank of land that remains vacant beyond a period of 3 years. Till 3 years, from a cutoff date to be determined by corporation, owner can retain the vacant land by paying tax. These measures will ensure the development within 3 years from cutoff date.
3. Similarly a TDR bank can be created by the corporation, where it is not used within 3 years from the date it gets created.
4. Both the TDR and vacant land as obtained through such banks should be exclusively used for affordable housing only.

5. A web site should be created for documenting the generated TDR where name of the owner and extent of the TDR is displayed. This is necessary for transparent operation of TDR.
6. Single window system for granting building permission should be created.
7. Housing designs up to 100 sq.m built up area per unit on plots smaller than 150 sq.m in case of individual house and development on sites having area up to one Ha. can be approved by licensed architects.
8. Corporation should set up a committee to review building by laws with a view to make these performance oriented.
9. It is seen that 78.01 % of slums are on private land and slums are redeveloped through SRA which is more of market oriented solution which did not consider basic needs of people. Also management and maintenance is not looked into. It is therefore suggested that PMC should take over the land from owner and give TDR against surrendered land. PMC shall promote In Situ development on those plots.
10. Promote integrated development of townships by considering people from different income categories on cross subsidy basis.

Example: Ambuja housing project at Kolkata, in partnership with West Bengal housing board. (Targeted at LIG/EWS and MIG/HIG)

ANNEXURE

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