

A COMPREHENSIVE PLAN FOR UPGRADING SLUMS IN GWALIOR

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Abstract - Slums are permeating worldwide, creating serious challenges in terms of living conditions, physical and social infrastructure requirements, health and socio-economic issues. India is also experiencing a huge challenge in this sector. This research paper critically analyzes the reasons for the development of these slums and more over aims to improve the infrastructure and socio-economic conditions of these slums, thereby improving the living standards of the marginalized sections of the society living in such places. As a part of the research, two pilot projects would be taken up to understand the issues of slums in the city of Gwalior. Population migration from rural areas to urban areas has increased enormously not only in India, but globally as well, but in India this issue prevails from the past two decades. This has led to the degradation of sustainability, environment and ecosystem in urban areas. Similar issues have emerged in the city of Gwalior, Madhya Pradesh. The study synthesizes existing literature and field surveys to analyze on ground realities in order to adopt different strategies for infrastructural improvements and access to basic services using existing reforms and prevention strategies. Furthermore, it scrutinizes the socio-economic impacts of these interventions and analyzes the existing status of transportation, education and health of the slum dwellers. The findings highlight both existing issues and challenges encountered in slum up gradation, offering insights and recommendations that are sustainable for the society.

Key Words: Notified Slums, Slum Up gradation, Urbanization, Migration, Tenable Slums

1. INTRODUCTION

The term "Slum" is coined for an organic informal settlement having scarcity of basic necessities with poor infrastructure and unhygienic living conditions. World Health Organization (WHO) defines 'Urban Slum Population' as "the proportion of urban population living in slum households. A slum household is defined as a group of individuals living under the same roof lacking one or more of the following conditions: •Access to improved water •Access to improved sanitation •Sufficient-living area •Durability of housing •Security of tenure." [1]

In other words, as stated above, Slum is defined as a 'condition' in which the dwellers lack one or more conditions outlined by WHO, for a healthy living. The slum dwellers live in the most pitiable conditions, with fragile social conditions,

health and infrastructure facilities. They live in dilapidated physical structures with weak socioeconomic status and limited awareness, leading to high mortality rate. The ballooning of slums will lead to mushrooming of high environmental concerns and abasement of the city. The prolific spread of slums has been an uncontrollable problem in urban areas. The main rationale behind slum proliferation is rapid Urbanization with increased migration from rural to urban areas.

1.1 Types of Slums (According to Census 2011)

NOTIFIED SLUM - All notified areas in a town or city notified as "slum" by state, UT administration or local government under any act including a 'slum act'. [2]

RECOGNIZED SLUM - All areas recognized as "slums" by state, UT administration or local government, housing and slum boards, but it may not be formally notified as slum under any act.

IDENTIFIED SLUMS - A compact area of at least 300 populations or about it should have 60-70 households. It is poorly built congested tenements, with unhygienic conditions usually with inadequate infrastructure and lacking in proper services such as sanitary and drinking water facilities.

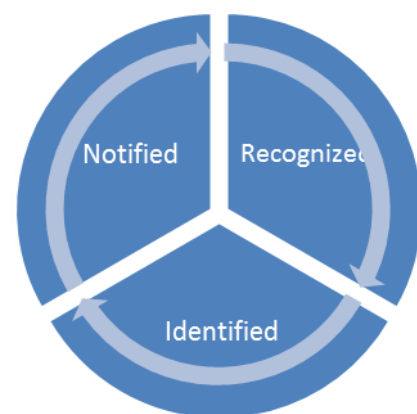


Fig -1: Types of Slums according to Census

2. AN OVERVIEW OF STATUS OF SLUMS IN INDIA

India's urban population is increasing profoundly than its total population. The current phase of urbanization will further accelerate due to the fast-increasing number of

towns. In 1901 the urban population was 25.8 million and it reached up to 377.1 million in 2011. The rate of urbanization augments promptly which needs to be checked periodically. India is a developing country and ‘urbanization’ plays a major role to account it into a developed country.

As per Census 2011, a total of 65.49 million slum population accounting for 13.9 million slum households have been enlisted in slums of 2613 cities or towns spread across 31 States and Union Territories of India. The non-slum population was 311.61 million. The slum population constitutes 17.4 percent of the total urban population of all the Indian States and Union Territories while 82.6 percent of the urban population was non-slum population as per Census 2011.

According to both census 2001 and census 2011, a 0.9 percent rise in the slum population has been observed, that is, from 17.4% to 18.3%, which accounts 1,31,23,015.

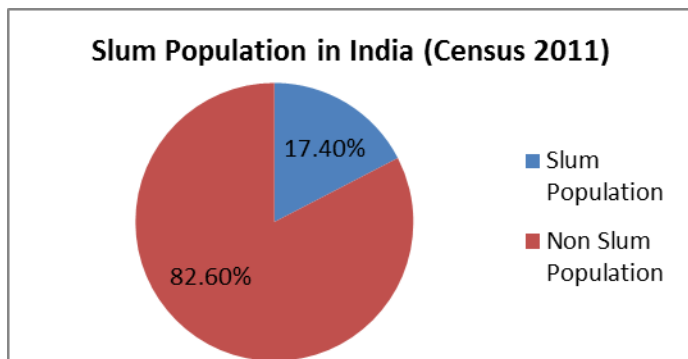


Fig -2: Graphical Representation of Distribution of Slum and Non Slum Population in India according to Census

3. AN OVERVIEW OF STATUS OF SLUMS IN MADHYA PRADESH

3.1 Demography- Madhya Pradesh

Madhya Pradesh is the second largest state of India with a population of 7.26 crores, out of which 3.76 crores are males and 3.50 crores are females, located in the center of the country and spans an area of 3.08 lakh square kilometer. 72% of the population of the state resides in rural areas. The decadal population growth has been 20%. The state comprises of 51 districts, divided in 362 tehsils and 313 community development blocks, 54903 villages and 476 towns. 14 urban towns lie under the administration of municipal corporations, 100 are administered by municipalities and the rest by Nagar Parishads. The population density is 236 persons per sq km as against 382 persons per sq km of India.

Madhya Pradesh has 149.68 lakh households. 52% of households are considered good for living, 44% are considered in livable condition and 4% are considered dilapidated. Out of 149.68 lakh households 24% have water

source in their home itself. Out of rest 76% households, 46% have water source near their house and 30% of the households have to travel far for water.

3.2 Status of Slums in Madhya Pradesh (According to Census 2011)

As per Census 2011, there are 10.87 lakhs houses in Madhya Pradesh, out of which 57.84 percent are good, 38.41 percent is livable, and 3.71 percent is in dilapidated condition. 79.01 percent of slum households live in their own homes and 17.24 percent of households live in rented homes. 1.46 percent of households have no exclusive rooms, 32.53 percent households have one dwelling room, 34.84 percent households have two dwelling rooms and 31.17 percent households live in three and above rooms.

39.86 percent have water source in their homes, 20.49 percent have water source in nearby area and rest 39.65 percent of the household have to travel far off for water source. 48.37 percent of household have access to treated tap water, 12.48 percent tap water from untreated source, 16.91 percent hand pump, 13.08 percent tube well and rest 9.16 percent use other sources of water. 23.6 percent of Slum Households in Madhya Pradesh have electricity, tap water and latrine within their home premises. 66.32 percent are pukka houses, 27.09 percent are semi-pakka and 5.83 percent are kutcha houses.

4. AN OVERVIEW OF THE STATUS OF SLUMS IN GWALIOR (M.P.)

4.1 Geographic Location and City Profile

Gwalior is one of the important cities in Madhya Pradesh in terms of employment opportunities and contributes in the GDP growth of the state. The city occupies a strategic location in the Grid region of North India and its fortress has historically been the center and one of the significant kingdoms of northern India. Gwalior city is the administrative headquarters of Gwalior District and Gwalior Division. The city is the largest urban center in the Gwalior – Agra region which comprises the districts of Gwalior, Bhind, Morena, Sheopur, Guna, Datia and Shivpuri. Gwalior is also considered as a counter magnet to the National Capital Region (NCR).

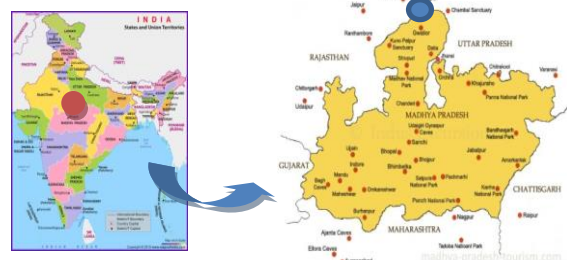


Fig -3: Geographic Location of Gwalior

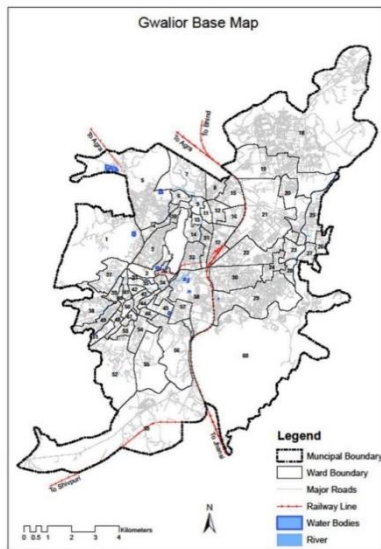


Fig -4: Map showing Connectivity and Administrative boundaries of Gwalior

Source: Housing for All Plan of Action (HFAPoA), Gwalior

Gwalior used to hold the position of the winter capital of the state of Madhya Bharat historically which later became a part of Madhya Pradesh. It has a rocky terrain within the city and is surrounded with hills from all sides. The northern part is embodied by the Ganga- Yamuna Drainage Basin. Gwalior's metropolitan area boundary comprises of Gwalior city centre, Morar Cantonment, Lashkar, Maharaj Bada, Phool Bagh and Thatipur.

Table -1: Demographic Profile- Gwalior

City Area	173.68 sq.km.
Density of Population	6157 persons per sq. km.
Average Literacy Rate (%)	84.14%
Male Literacy Rate (%)	89.64%
Female Literacy Rate (%)	77.92%
Sex Ratio	879
Child Sex Ratio	836
Child (0-6 years)	1,19,413

Source: Primary Census abstract- 2011, Registrar General of India.

4.2 Status of Slums in Gwalior

Volatile modifications from rural to urban growth lead to poverty drifting to urban areas. Slum growth is triggered by urban poverty. Urbanization constitutes a confrontation with infrastructure management in the developing countries like India which leads to mushrooming of slum areas.

According to Census 2011, in India, the urban population has risen to 377 million depicting a growth rate of 2.76 percent per annum during 2001-2011. Urbanization and economic growth are directly proportional to each other and germinate working and investment opportunities in urban areas which entice people towards cities and leads to humongous amount of migration.

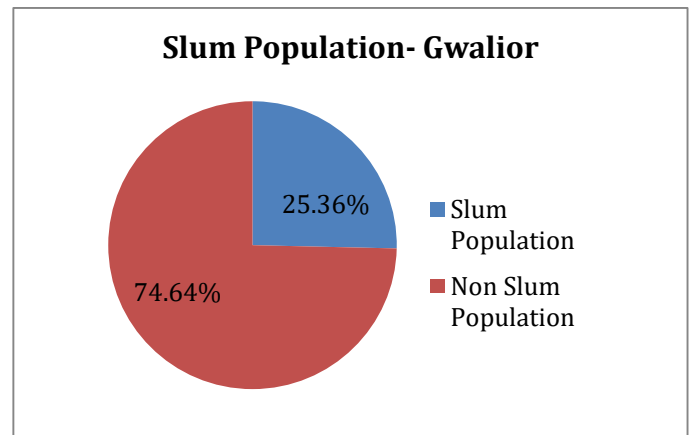


Fig -5: Graphical Representation of Distribution of Slum and Non-Slum Population in Gwalior

There are a total of 243 slums in the Gwalior Municipal Corporation accounting for a total population of 2.09 lakhs as per Census 2011. A detailed statistics along with the locations of the slums have been shown below. With such a high amount of slum population residing in the city, it becomes necessary to study the issues and work towards the up gradation of the slums in the city.

Table -2: Slum Data of ULBs in Gwalior Municipal Corporation

Census 2011									
S . N o .	ULBs	Total Population	Slum Population	% of Slum Population	Hou seh olds	Mal e	Fem ale	SC	ST
1	Gwali or M. Corp.)	8,27,026	2,09 ,769	25.36	35,348	1,12 ,220	97549	55,054	4,317

Source: Department of Urban Administration and Development, Government of Madhya Pradesh

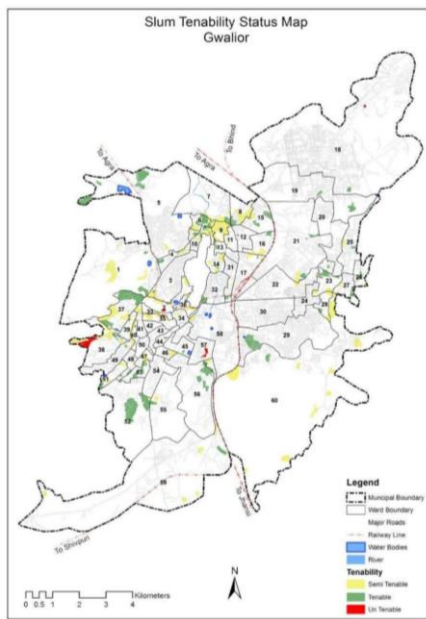


Fig -6: Map showing the Location of Slums and the Slum Tenability Status of Gwalior

Source: Housing for All Plan Of Action (HFAPoA), Gwalior

5. STUDY OF GOL- PAHADIYA SLUM, SANJAY NAGAR, GWALIOR

5.1 Geographic Location and City Profile

In order to understand the slum condition and issues in the slums, so that possible ways of up gradation can be deduced, we have studied this slum as a pilot project. The focus will be on understanding the existing socio economic and infrastructural status of the slum. Gol Pahadiya slum grabs the southern corner of the city and is located at a distance of 6.2 kms from Gwalior Railway Station and 16 kms from Gwalior Airport.

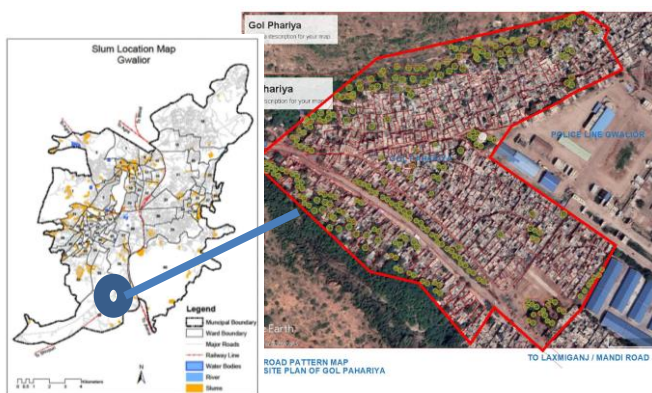


Fig -7: Location of Gol Pahadiya Slum, Sanjay Nagar, Gwalior

Source: Housing for All Plan of Action (HFAPoA), Gwalior; Google Earth

The slum is more than 40 years old. Most of the people are workers in nearby industries or are involved in cleaning and other menial jobs.



Fig -8: Site Plan of Gol Pahadiya Slum, Sanjay Nagar, Gwalior

Other details important for the study of the Gol Pahadiya slum have been enlisted in the table below.

Table -3: Details of Gol Pahadiya Slum, Sanjay Nagar, Gwalior

Slum ID	157
Land Ownership	Government
Site Area	16738.798 sq.m.
No. of Kutchha houses	209
No. of Pucca houses	585
Total No. of Houses	794
Total Population	3216
Ward No.	38
Type of Slum	Notified

Source: Nagar Nigam, Gwalior

5.2 Need for Intervention in the Slum

With a total population of 3,216 slum dwellers, Gol Pahadiya slum has poor sanitation facilities and arrangements for solid waste disposal and has unmaintained community toilet. Water logging, improper drainage conditions with mostly open and kutchha drains and cases of open defecation have been observed. Congested and narrow roads make it very difficult for the vehicles to pass through.

Lack of knowledge about various ongoing government schemes and programs for the benefit of the slum dwellers was observed. Lack of social infrastructural facilities like education, health care, dilapidated houses with improper roofing, lighting and ventilation was perceived.



Fig -9: Narrow streets and Solid waste Dumping in Gol Pahadiya Slum, Sanjay Nagar, Gwalior

Source: Primary Survey



Fig -10: House Conditions in Gol Pahadiya Slum, Sanjay Nagar, Gwalior

Source: Primary Survey

6. STUDY OF LAKSHMANPURA SLUM, GWALIOR

6.1 Geographic Location and City Profile

Laxmanpura is a 150 year old slum located in the heart of the city of Gwalior near Padav crossing. It is located near Gwalior railway station (at a distance of 0 kms aligned with platform No. 4) and 10 kms from Gwalior airport.

We have studied this slum as the second pilot project to understand the issues, and deduce possible methods of slum up gradation. The focus will be on understanding the existing socio economic and infrastructural status of the slum and to review and understand the available government policies and regulatory framework to give suggestions for up gradation in the slum in every possible way.

Laxmanpura was an open land, with not much settlement, no infrastructure and no approach road as it was near the railway lines it was considered as the outskirts area. Due to rapid growth of urban population and migration in the city, people from different satellite towns, nearby areas and from the rural areas migrated and settled in the Lakshmanpura slum of the city.

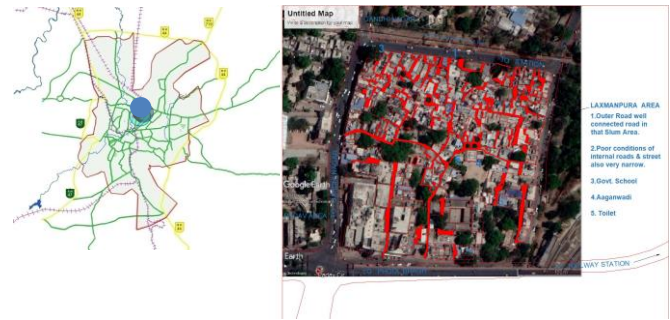


Fig -11: Location of Lakshmanpura Slum, Gwalior

Source: Google Earth

Most of the people migrated and settled in this area for employment opportunities. The unmanaged and uncontrolled growth in the settlement increased leading to the formation of the Lakshmanpura slum. Other details important for the study of the Laxmanpura slum have been enlisted in the table below.

Table -4: Details of Lakshmanpura Slum, Gwalior

Slum ID	128
Land Ownership	Government
Site Area	22,400 sq.m.
No. of Kutchha houses	08
No. of Pucca houses	54
Total No. of Houses	62
Total Population	237
Ward No.	31
Type of Slum	Notified
No. of Schools	01
No. of Anganwadis	02
No. of Community Toilets	01

Source: Nagar Nigam, Gwalior

6.2 Need for Intervention in the Slum

About 44 percent families have no toilet facilities and defecate openly on the railway lines nearby. There is no availability of drinking water, any solid waste management, poor hygiene and sanitation conditions. There is poor maintenance of community toilets along with narrow roads which make it very difficult for the vehicles to pass through. Instances of water logging and contaminated water at numerous locations create hot spots for diseases and contribute to the vulnerable status of health.

There is direct disposal of sewer in the adjacent Dharamshala site which creates an unhealthy environment for the slum dwellers. Absence of primary education facility has been observed within the site.



Fig -12: House Conditions and School in Lakshmanpura Slum, Gwalior



Fig -13: Open Drains and Streets in Lakshmanpura Slum, Gwalior
Source: Primary Survey

The most prevalent diseases identified in the area are diarrhea, cholera, typhoid and dysentery. 57 percent of population reported instances of poor sanitary conditions which are responsible for diseases that people frequently suffer from, followed by 23 percent responded poor water supply as a reason but only 3 percent reported overcrowding as a major issue within the settlement. Majority of the people were suffering from air and water borne diseases.

Majority females are suffering from asthma due to the daily cooking chores been done on 'chulha'. On the contrary, no government hospital is available in the nearby area.

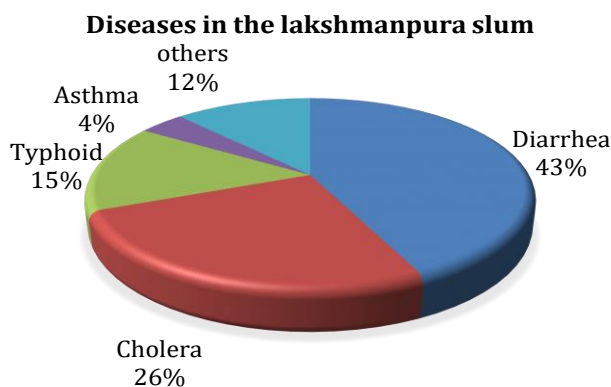


Fig -14: Graphical Representation of Percentage distribution of Diseases in Lakshmanpura Slum, Gwalior
Source: Primary Survey

7. OUTCOMES AND COMPARITIVE ANALYSIS

General issues and observations have been outlined on the basis of primary survey and other secondary studies in terms of 'socio economic conditions' and 'availability of basic amenities'. Apart from that a comparative analysis has been done to understand the subject in a more comprehensive way.

7.1 Availability of Basic Amenities

It was observed that all the households had electricity connections which the residents of the nearby residential complexes claimed to be illegal. Improper drainage leading to water logging was a very common issue in the slum which worsened during rainy season. There was no availability of water connections in the houses and the people were dependent on the public water taps in the nearby areas. There was absence of health care facilities in both the slums. In terms of education, anganwadis was present only in Lakshmanpura slum. A comparative analysis on the basis of primary survey done from the slum dwellers of both the slums on various parameters under basic amenities has been done as shown below.

SANITATION SERVICES

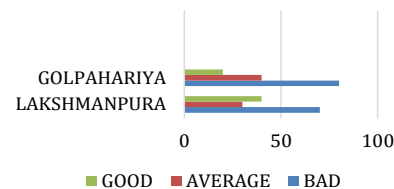


Chart -1: Comparative Qualitative Analysis of Sanitation Services in both the slums

As shown in the graphical representation above, 80 percent of the respondents feels that the sanitation in Gol Pahariya slum is bad while in Lakshmanpura slum, it was 70 percent.

WATER SUPPLY

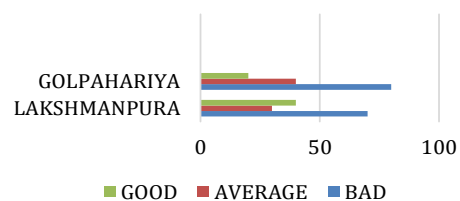


Chart -2: Comparative Qualitative Analysis of Water Supply in both the slums

As shown in the graphical representation above, 85 percent of the respondents feel that the water supply in Gol Pahariya slum is bad while in Lakshmanpura slum, it was 70 percent.

CONDITION OF OPEN DRAIN

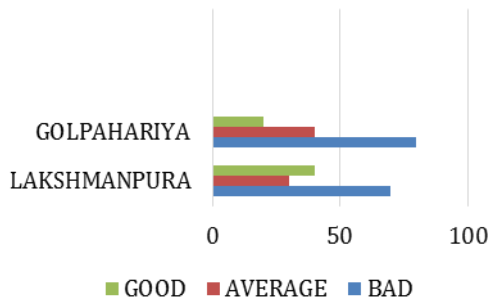


Chart -3: Comparative Qualitative Analysis of Condition of Open Drain in both the slums

As shown in the graphical representation above, 85 percent of the respondents feel that the condition of Open Drains in Gol Pahariya slum is bad while in Lakshmanpura slum, it was 65 percent.

CONDITION OF INTERNAL STREETS

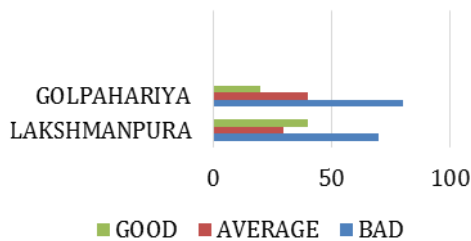


Chart -4: Comparative Qualitative Analysis of Condition of Internal Streets in both the slums

As shown in the graphical representation above, 75 percent of the respondents feel that the condition of Internal Streets in Gol Pahariya slum is bad while in Lakshmanpura slum, it was 60 percent.

CONDITION OF POWER SUPPLY

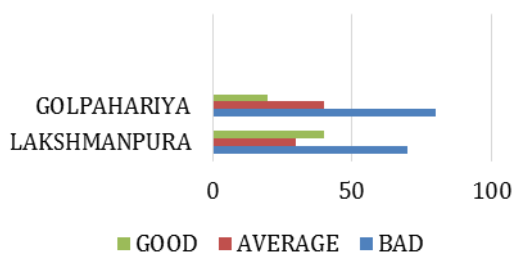


Chart -5: Comparative Qualitative Analysis of Condition of Power Supply in both the slums

As shown in the graphical representation above, 75 percent of the respondents feel that the condition of Power Supply in Gol Pahariya slum is bad while in Lakshmanpura slum, it was 60 percent.

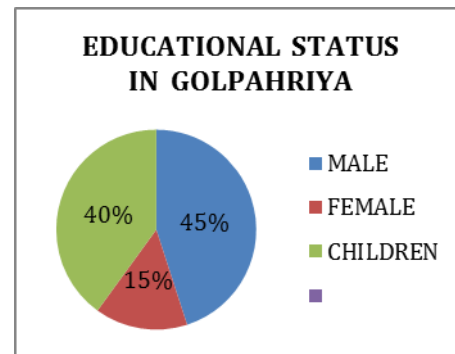
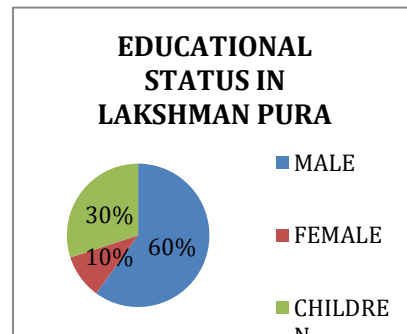


Fig -16: Graphical Representation of Educational Status in both the slums

As shown in the graphical representation above, maximum literates are in Lakshmanpura slum.

7.2 Socio Economic Status

The occupation of the slum dwellers was found to be varied. Nearly half of the respondents were engaged in daily wage jobs. The percentage of respondents engaged as construction worker, driver and painter was 17, 13.4 and 6.7 respectively. Further, some of the male respondents were working as sewage worker, welder, water supplier, security guard and plumber.

The salary of the respondents varied according to their occupation ranging from Rs 9000 per month to Rs 20,000 per month. It was found that people who were engaged in technical works were getting higher wages than those who were engaged in occupations involving physical labor.

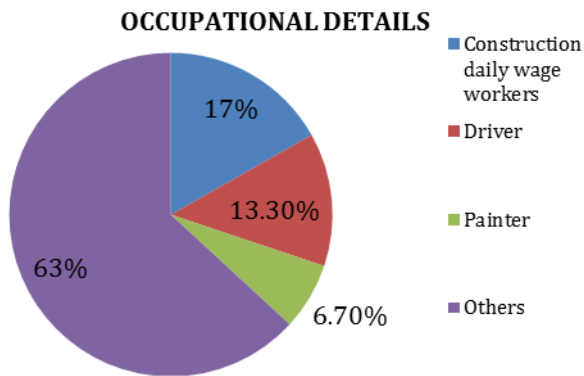


Fig -15: Graphical Representation of Percentage Distribution of Occupational Details in both the slums

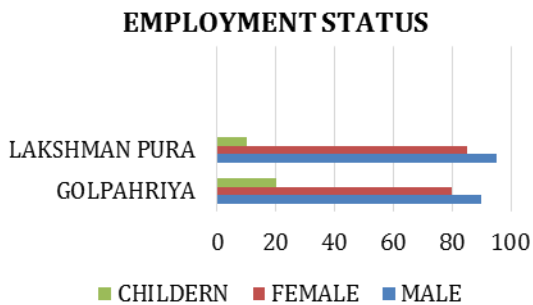


Chart -6: Comparative Qualitative Analysis of Employment Status in both the slums

As shown in the graphical representation above, 95 percent are male workers, followed by 85 percent female workers and 10 percent child labor in Gol Pahariya slum. While in case of Lakshmanpura slum, it was 90 percent are male workers, followed by 80 percent female workers and 20 percent child labor.

8. PROPOSALS AND RECOMMENDATIONS

8.1 General Recommendations for Slum Up gradation

WATER SUPPLY – Both the slums are notified, hence patta can be provided so that individual tap connections linked to covered drains should be provided. Metered water connections to be provided with appropriate subsidies or shared paid connections to be given to families with low affordability.

SEWERAGE AND SANITATION – Sewer lines should be laid or individual septic tanks to be provided within the slums within individual toilets in each house under ‘Swatch Bharat Abhiyan’. ‘Swatch Bharat Abhiyan’ will provide financial subsidies to all households.

DRAINAGE – Covered Pucca Drains to be provided to prevent solid waste from being disposed in the drains and clogging.

SOLID WASTE MANAGEMENT - Door-to-door waste collection facility should be started by Nagar Nigam with the help of community participation enabling regular disposals. Community systems for waste management shall be encouraged with support of NGOs to enable communities to generate income.

ACCESS TO HEALTH AND EDUCATION FACILITIES - Health and education services shall be planned and delivered in coordination with the concerned departments. GMC shall jointly review with concerned department official, spatial distribution of municipal schools and health centers, identify gaps and plan for gap filling. One Mobile Medical Unit per slum should be available at call and inspect slums regularly which link to the nearby hospitals.

8.2 Slum Up Gradation using various Government Reforms

Various reforms have been introduced by the government of India as well as the state government for the benefit of the poor which can be utilized by the slum dwellers as well.

One of the main program is PMAY, under which In-situ Slum Rehabilitation can be performed for tenable slums, for which a subsidy of 1 lakh per beneficiary is also provided by the government.

Apart from that, Basic Services for Urban Poor under InNURM can be implemented for which local body budgets have been allocated. The Municipal Corporation has already earmarked 25 percent of the budget for Urban Poo Conferment of Property Rights to Slum Dwellers including security of tenure at affordable prices under Madhya Pradesh Patta Act since 1984 under which Property Rights of 20-25 percent will be provided in all housing projects (both public and private agencies) for EWS/ LIG through cross- subsidization.

Madhya Pradesh has amended its Land Reservation Rules for EWS and LIG for the slums which cannot be developed in-situ under which 15 percent of the dwelling units shall be reserved for EWS and LIG which has been enforced since 19th April, 2012.

It is suggested to implement Public Private Partnerships (PPP) in order to develop more and more affordable houses, and in return provide benefits in development regulations.

8.3 In-Situ Slum Up gradation and Improvement Strategy

In- Situ Slum Up gradation strategy has been chosen for Tenable and Partially Tenable slums having kutcha structures and poor infrastructure.

CRITERIA - Tenure Status of Households in Non Tenable Slums is highly vulnerable hence needs to be implemented on priority.

Slums with Land Ownership as Public will be eligible. Priority will be given to slums having connectivity to City Level Trunk Infrastructure of Water Supply, Sanitation and Road Connectivity.

PREVENTION STRATEGY- Apart from statutory and regulatory reforms required through state level policy interventions, options can be developed by Urban Local Bodies. The proposed option is the creation of affordable housing and disposal of same to the target groups. The need for affordable housing has been derived from existing Housing Scenario of Gwalior and its Demand Assessment.

The Prevention Strategy is proposed to be implemented by Municipal Corporation and other Parastatal Agencies like development authority, housing board, etc, in an integrated manner. The Creation and Disposal of Affordable Housing Units for EWS and LIG are worked out on the basis of Demand Calculations.

The aim of Prevention strategy may be achieved through **Direct Interventions** for increasing affordable housing stock as well as regulatory interventions to ensure supply of affordable housing to EWS and LIG. Following measures are proposed to implement the Prevention Strategy by:

- Ensuring affordable housing stock through **reservations** under Madhya Pradesh Nagar Palika (Registration of Colonizer, Terms and Condition) Rule, 1998.
- Reservation of 15 percent dwelling units for EWS and LIG in the ratio of 3:2 which will be catered by Private Developers, Development Authority and Madhya Pradesh Housing Board in their schemes.
- Demand for Affordable Housing Units for EWS/ LIG to be treated as **Special Affordable Housing Projects** which is to be implemented by Gwalior Development Authority and Madhya Pradesh Housing Board.

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