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URBAN INFORMALITY AND SOCIAL INEQUALITY: A COMPREHENSIVE STUDY OF SOCIOECONOMIC CONDITIONS IN KARACHI'S SLUM SETTLEMENTS

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Abstract

A large section of the world population still lacks decent and orderly housing. There are at least one billion people who, without access to potable water and sanitation, live in slum areas. The existence of informal settlements is marked by an insufficiency of basic facilities and infrastructure. Slum settlements are considered one of the most rapidly growing issues, especially in developing countries. This research paper will explain the problems existing in the slums of Karachi and will provide feasible solutions for the problems faced by the local people of these areas. Karachi is the most populous and largest city of Pakistan. Karachi has about 600 slum localities, with more than 50% of people of this city living in these areas. The reasons for the rapid increase in slums are population growth, rural-to-urban migration, high unemployment rate, informal sector, poverty, political problems, and poor urban planning. In Karachi, people face numerous problems such as crowded roads and highways, inadequate transportation, and poorly constructed houses. The main reason for the increase in the slum areas is the unavailability of affordable housing in the city. This research article will try to identify the main issues with the slums and will try to provide solutions for the improvement of the city and the environment.

INTRODUCTION

Slums, or informal settlements, are a ubiquitous global phenomenon that accommodates around one billion people who often lack consistent access to adequate shelter, clean water, and sanitation facilities (Aleemi et al., 2018). Slums are highly concentrated urban communities that arise through irregular, informal growth and are often lacking in fundamental infrastructure. In Karachi, the urban areas are generally classified as planned or unplanned, with the unplanned known as 'slums' or katchi abadis. The katchi abadis can be subdivided.

The first type consists of settlements established at the time of partition; the majority of these have now been regularized, with many of the original settlements dismantled and their inhabitants settled elsewhere. The second category is the "Informal Subdivisions of Land" or

ISD, and this also comprises two types: "Notified katchi abadis" or the kind of abadi that has been formally recognized through the allotment of 99-year leases, while "Non-notified katchi abadis" refer to abadis that are not officially regularized and often result from the occupation of either government or private land. Just like in the former, vulnerability in these kinds of abadis with poor standard of life threatens the health of the people and environmental degradation.

AIM AND OBJECTIVES

The focus of this study will be to point out the problems caused by slum settlements and to seek viable plans for improvement. The study also aims to evaluate the problems caused by such areas while devising a plan that can be implemented to raise the standard of living.

RESEARCH QUESTIONS

1. What are the main causes of slum residents?
2. What is in slums in terms of amenities (health, education, water, and sanitation)? Can these amenities be accessed and afforded by everybody? Who is financing this?
3. What are the demographic characteristics and socio-economic conditions of people living in slums?
4. Role of NGO's and Govt. in improving Slums. Alternatives that could be made for Improvement in Slums.
5. In what ways are slums affecting our environment and people physically and mentally? How do we deal with this problem?

METHODOLOGY

The research will employ an analytical and descriptive approach, based on information from case studies, surveys, and questionnaires. The interest of this study is the resident communities that dwell in these informal settlements.

RESEARCH OUTCOME

The central aim of this study is to address the root problems related to slum settlements, since fast-paced urbanization in towns has led to uncontrolled and unplanned developments. This process has brought about many challenges, such as poor waste management, increasing pollution, growing poverty, rising unemployment, and raising illiteracy, and at the same time negatively impacting natural ecosystems. The overall goal of this study is to find realistic alternatives to the slum upgrade. Since public housing in the public sector is not directly accessible to target populations, there is a need to create innovative alternatives to close the housing demand-supply gap in Karachi (Khan et al., 2019). It includes piloting policy and design experiments with the capacity to include low-income groups without undermining urban sustainability objectives (Bardhan et al., 2018; Ahmad, 2020; Asif et al., 2025a; 2025b).

LITERATURE REVIEW

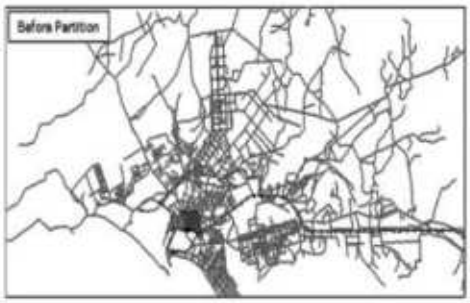
Karachi's Urban Expansion and History

The transformation of Karachi from a small fishing port village that was historically referred to as Krokola and Debal into a huge metropolis city is the core of comprehending its contemporary urban problems. Its position as a strategic area was enhanced during the British era from 1839 onwards through developments such as railway expansion, the opening of the Suez Canal in 1869, and legalizing the port to establish it as a central trade hub. The city's importance increased further during the 20th century with the growth of manufacturing industries and its recognition as the capital of Sindh in 1935 (Hasan, 2015).

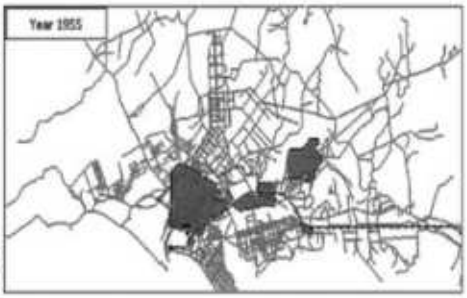
The partition of India and Pakistan in 1947 made Karachi experience a demographic turning point. This is because over 600,000 Muslim refugees arrived in it, the capital of the new country, with its population growing 161%, heavily straining its infrastructures. This crisis made migrants look for temporary housing solutions, hence giving birth to the first mass informal settlement, or katchiabadi (Jensen et al., 2019). The growth of the city was quite unparalleled; the population grew 432 percent between 1941 and 1961, which put wonderful and incessant strain on infrastructure and housing (Breitenbauch et al., 2019).

Later decades were marked by ambitious but ultimately unsuccessful planning efforts. The

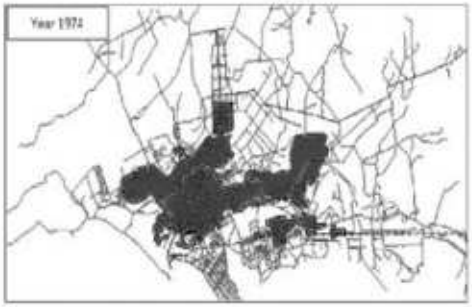
1958 Greater Karachi Resettlement Plan and the subsequent Landhi-Korangi and New Karachi master plans provided for resettling squatters in planned townships with surrounding industrial areas. Nonetheless, political will and instability hindered complete execution of these projects, especially the vital industrial segments, rendering the residents out of reach of the centers of employment (Qureshi, 2010). This trend of unexecuted master plans persisted throughout the 1970s and 1980s. The 1990s took the situation further, with political violence and street wars resulting in economic downturn, de-industrialization, and increased unemployment, which further promoted the expansion of informal settlements as public housing could not match demand Despite the fact that there were various proposals of city plans for development in the period 1949 to 2006, none of them was ever finalized until the Karachi Strategic Development Plan 2020, which has left the city with a longstanding deficit of housing, electricity, clean water, and transport (Fazal & Hotez, 2020). This is the historical trend which suggests how the pace of uncontrolled urbanization, together with massive migratory influxes, has always been one step ahead of the development of the required infrastructure and the capacity to manage this through the spreading of slum settlements in the city of Karachi. (Jensen et al., 2019; R. et al., 2000; Gayer, 2013).



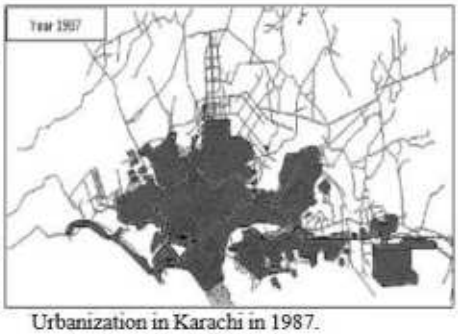
Urbanization in Karachi Before Partition. Source JICA study team



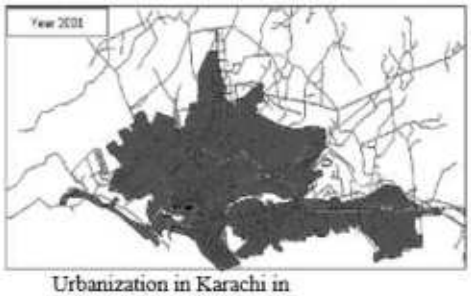
Urbanization in Karachi in 1955. Source JICA study team



Urbanization in Karachi in 1974. Source JICA study team



Urbanization in Karachi in 1987. Source JICA study team



Urbanization in Karachi in 2001. Source JICA study team

Contemporary Urban Population and Slum Expansion

It is evident from the 2017 census that the population of Karachi exceeds 14.9 million. Moreover, the density of its population is approximately 24,000 people in a square kilometer. It is estimated that the density of Karachi's population makes it the eighth-most densely populated urban area in the world. In addition to that, over 50 percent of its population resides in slums.

The reasons for the emergence of these slums can vary from the cost of land as well as the cost of construction materials, the movement of people from the villages to the other areas, specifically the urban areas, poverty, as well as the poor planning of the urban areas. The environment in which these slums exist is very poor, as is the case with the Orangi Town, which is the fifth largest in the world, having poor roads, lack of WATER, sewage, as well as lack of means of transport. These are factors that lead to environmental degradation and have serious implications for public health (Breitenbauch et al., 2019). The prevailing energy deficit, where there is a huge difference between demand and supply across domestic and industrial markets, further adds to these challenges to produce load shedding on a regular basis and determine energy unit prices for both households and industries (Subhani et al., 2024).

Image 1 Slums of Karachi. Source Dawn Pakistan.

Image 2 Orangi Town Karachi, Source Tribune.Pk.

Interventions and Community-Led Initiatives: The Orangi Pilot Project

To fill the void left by state failure, non-governmental efforts have been instrumental. The most visible is the Orangi Pilot Project and Research and Training Institute (OPP-RTI), initiated in 1980 by Akhter Hameed Khan and later directed by Perveen Rehman. Working in a settlement of 2.4 million residents, OPP-RTI pursued a strategy of community-based development centered on low-cost sanitation, housing, and microfinance.

The main innovation of the project was its "internal-external" model of "sanitation". OPP-RTI provided social and technical support to residents to enable them to self-finance and build lane-level sewerage at the community level. This demonstrated that low-income residents could effectively manage and fund infrastructure of a core kind. However, the project also unveiled a major weakness: the construction of huge trunk sewers and treatment facilities was still at the discretion of the state, showing the necessity for cooperative governance to achieve sustainable urban development (Aslam & Asif, 2025; Santos et al., 2017). The success of the program resulted in replication of its model being used in Karachi and other cities of Pakistan (Uribe et al., 2019).

In housing, OPP-RTI enhanced local capacity through loans and technical support to small-scale manufacturers of building materials (thallas). This local mechanized production

enhanced quality of materials spurred the local economy, and brought affordable, upgraded building materials for self-help housing to thousands of households every year.

Image 3 Location map: Orangi town pilot

Image 5 Housing units by OPP RTI. Source Opp.org.pk

Image 4 People are installing sewage pipes.

Image 6 Teachers training by OPP RTI

Case Study: Singapore's Public Housing

Transformation

Singapore offers a convincing counterfactual, showing the possibilities of effective state-sponsored intervention. Gone from a country suffering from slums and overpopulation in the 1960s, it is now a world example of sustainable urban growth. The secret to this success was the creation of the Housing and Development Board (HDB) in 1960, which introduced a centralized, long-term public housing policy.

The government policy developed in distinct phases:

• 1960-1970 (Foundation): HDB focused on rapid building to overcome grave shortages in housing.

• 1970-1980 (Consolidation): Much emphasis was on establishing controls, maintenance, and quality standards.

• 1980-1990: Innovation New technologies were introduced in the industry for improving productivity and quality of construction.

• 1990-Present: Emphasis broadened to include environmental sustainability, building greener communities.

Central to this was the Land Acquisition Act of 1966, granting the government the right to buy land at controlled prices for the purpose of large-scale integrated town planning. Today, over 80% of Singapore's population lives in HDB apartments with a 92% homeownership rate - the highest globally (Bin & Low, 2019). This success is an example of how firm policy, regular implementation, and state dominance of prime resources such as land can effectively end housing crises. Due to the better policies by the government, and timely implementations of the plans Singapore is now the most environmentally sustainable city in the world and currently has world class infrastructure. Singapore has the best

transportations system which is used by the 70% of its local population. Housing development board (HDB) has now built more than 10,00000 flats in 23 towns and 3 states and HDB Flats are now the home for the 80% of Singapore's local residents. Total home ownership rate in Singapore is 92% (highest in the world). After the independence Singaporean prime minister implement a land acquisition Act 1966, according to this act no landowner should get benefits with the housing developments and secondly the price paid for the land acquisition for the public should not be higher than what the land have been worth and also initiated low-cost housing schemes.

Image 7 An old picture of Singapore slums. Sources Businessinsider.com

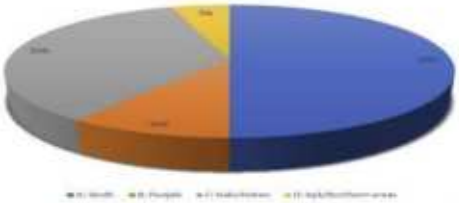
Image 8 Early HDB flats at sterling Road. Source The straits times

Image 9 Newly Built HDB flats

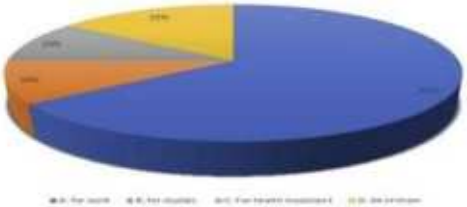
Image 10 Singapore city. Source Readkong.com

Image 11 Singapore's Green buildings. Source Urban democracy lab

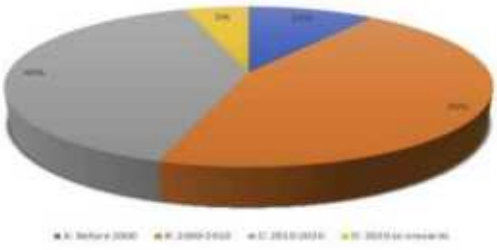
RESEARCH ANALYSIS



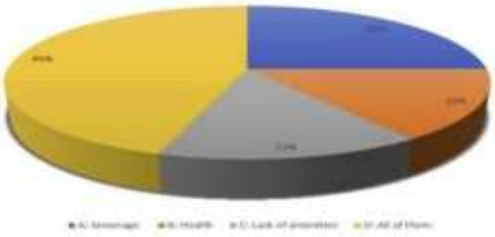
Pie Chart 1: Location from Which Respondents Relocated to the Slum



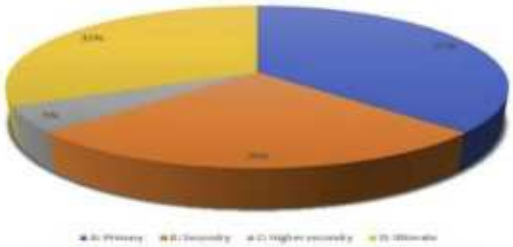
Pie Chart 2. Reasons for Moving to Town



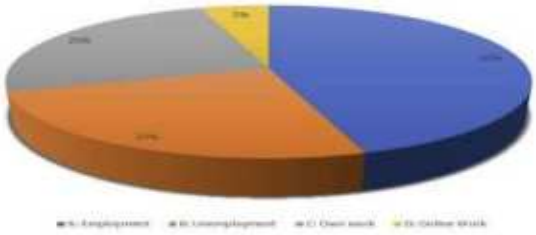
Pie Chart 3. Year Respondents Began Residing in the Slums



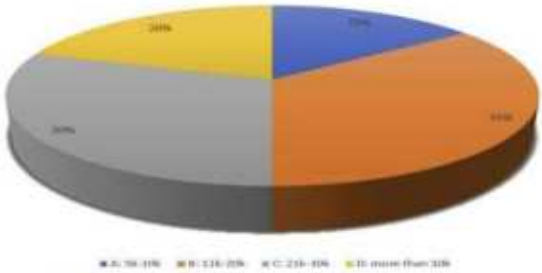
Pie Chart 4. Most Common Problems Faced by Residents in the A



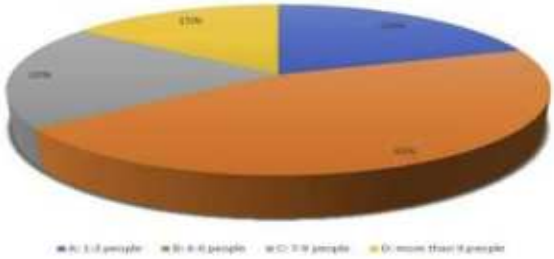
Pie Chart 5. Educational Level of Respondents



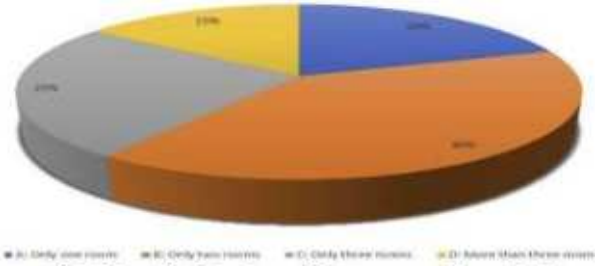
Pie Chart 6. Income Sources by Respondents



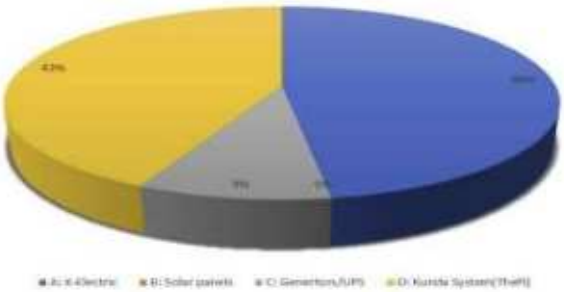
Pie Chart 7. Monthly Income of Respondents



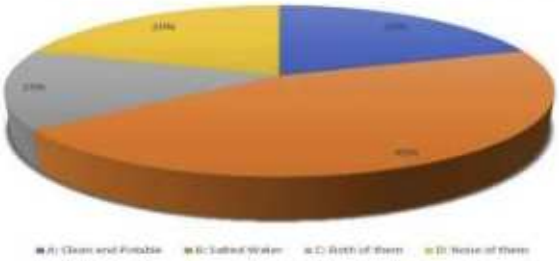
Pie Chart 8. Family Size of the Respondents



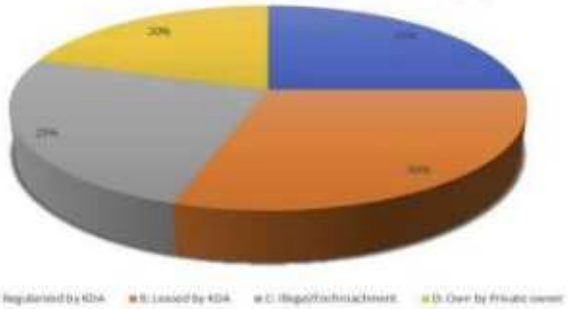
Pie Chart 9. Number of Rooms per Households



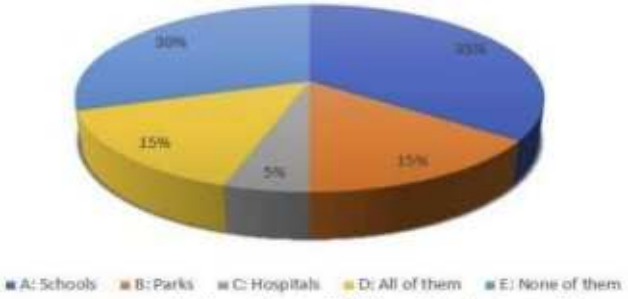
Pie Chart 10. Electricity Supply in Dwellings



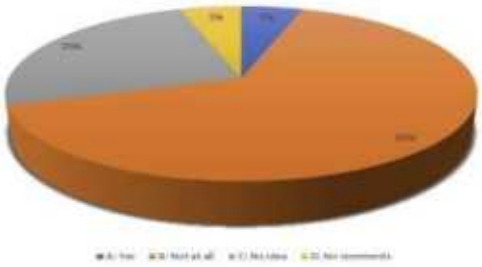
Pie Chart 11. Source of Water Supply



Pie Chart 12. Slum Land Ownership



Pie Chart 13. Availability of Basic Amenities



Pie Chart 14. Presence of NGOs / UCs in Slum Development

TABLE 1

Category	Sub-Category	Percentage (%)
1.RELOCATION ORIGIN	Interior Sindh	15%
	Punjab	14%
	KPK	8%
	Balochistan	5%
	Within Karachi	48%
	Other	10%
2. REASONS FOR MIGRATION	Employment	46%
	Better facilities/amenities	21%
	Family	14%
	Other	19%
3. YEAR OF SETTLEMENT	Before 2000	21%
	2000-2005	17%
	2005-2010	25%
	2010-2015	22%
	2015-2020	15%
4. COMMON PROBLEMS FACED	Water shortage	32%
	Sewage/drainage issues	28%
	Poor roads/infrastructure	18%
	Electricity load shedding	12%

Category	Sub-Category	Percentage (%)
	Garbage collection/waste management	7%
	Other	3%
5. EDUCATION LEVEL	No formal education	32%
	Primary (1-5)	28%
	Middle (6-8)	18%
	Matric (10th grade)	15%
	Intermediate (12th grade)	5%
	Graduate and above	2%
6. INCOME SOURCE	Daily wage labor	35%
	Private sector job	22%
	Self-employed/small business	20%
	Government job	8%
	Domestic work	10%
	Other	5%
7. MONTHLY INCOME (PKR)	Less than 15,000	28%
	15,000 - 25,000	35%
	25,000 - 35,000	22%
	35,000 - 50,000	10%
	Above 50,000	5%
8. FAMILY SIZE	1-4 members	18%
	5-7 members	42%
	8-10 members	28%
	More than 10 members	12%
9. NUMBER OF ROOMS	1 room	45%
	2 rooms	32%
	3 rooms	15%
	4 or more rooms	8%
10. ELECTRICITY SUPPLY	K-Electric connection	62%
	Illegal connection/kunda	28%
	No electricity	7%
	Solar/other	3%
11. WATER SOURCE	Municipal supply (KW&SB)	35%
	Private tanker	28%
	Borewell/groundwater	22%
	Community tap	12%
	Other	3%
12. LAND OWNERSHIP	Government land (encroached)	48%
	Private land (encroached)	28%
	Leased/regularized	15%
	Owned with documentation	9%
13. BASIC AMENITIES AVAILABILITY	Paved roads (Available)	32%
	Street lights (Available)	28%
	Sewerage system (Available)	25%
	Garbage collection (Available)	22%
	Schools nearby (Available)	45%
	Health facilities (Available)	18%
14. ORGANIZATION PRESENCE	NGOs (Present/Working)	35%
	Union Councils (UCs) (Present/Working)	28%
	Community-based organizations (Present/Working)	42%
	Government development authorities (Present/Working)	15%

Results and Discussion

The impact of this study emphasizes that multi-dimensional issues of informal settlements in fact need to be addressed with a two-pronged approach, merging the development of physical infrastructure with social welfare projects. The proliferation of slums is considered one of the major urban issues in Karachi, which has emerged in response to rapid and uncontrolled urbanization. With this understanding, it is significant to note that both architects and citizens have a shared responsibility regarding how they can come up with effective solutions to make the residents thereof more resilient to environment and security threats (Asif & Asghar, 2025).

The literature review has revealed specific issues inherent in the slums in Karachi; a set of practical solutions has been found in order to increase living conditions. The critical case would

perhaps be the Orangi Pilot Project (OPP) that has proven to be successful for increasing living conditions. It has been successful in the project using a host of key strategies:

In-Situ Slum Upgrading

There is also one misconception concerning the relocation of people from the slums to the outer zones. In fact, this particular action is quite expensive. Moreover, it also leads to the destruction of the livelihood and the social structure developed by people in the process of relocation. In-situ urban renewal looks quite effective for the issue of the slums. In fact, in the process of in-situ urban renewal, physical, social, economic, and environmental revitalization or development needs to be carried out in the slums. This particular program or initiative is initiated by the people along with other people from the community and the concerned government. It aims at improving the livelihood of people without the need for relocation through eviction (Gade & Opoku, 2020).

Community Skill Development and Empowerment

It is important to teach people useful skills because building materials and work tools are pricey. The OPP model successfully trained local residents of indigenous backgrounds in construction techniques so that they could implement sanitation systems independently. This idea has the potential to be scaled up with the help of volunteers in providing training on the use of local materials to build improved, safer houses. This self-help approach reduces dependency on external support, is affordable, and enhances high levels of ownership and citizen empowerment, ensuring sustainability of intervention over the long term (Moita et al., 2021). Besides, strengthening citizens' capacity through empowerment with skills to use cellphones for establishing eligibility to basic services can enhance their ability to use data-driven advocacy (Phadke, 2018).

Promotion of Low-Cost Housing Schemes

Affordability of housing is the core of slum rehabilitation. The government should grant recognition to these settlements officially and start low-cost housing schemes wherein individuals can live in dignity and security. These schemes can utilize locally available, sustainable materials like mud blocks, bamboo, and lime, which are inexpensive as well as having a lower carbon footprint A fine example is the initiative taken by the architect Yasmeen Lari, who designed post-disaster housing with the assistance of traditional skills using mud, lime, and bamboo. More than 40,000 zero-carbon footprint houses were constructed from the year 2010 to 2014 for the flood-affected people. This indicates that green buildings can offer reasonable accommodation without and also involves local communities in the construction process.

Enabling Access to Affordable Land

Prohibitive land costs in Karachi act as the number one barrier to the goal of affordable housing. There have to be inventive ways for accessing land. The government can therefore put up no-interest loan schemes for housing with lower payments, mainly targeting landless and homeless people. This financial program shall have to be complemented withprograms for improved living or job placement endeavors, to guarantee repayment viability. This shall avoid abuse of financial resources and shall also eventually assure that assistance reaches its intended targets.

Conclusion

This Study highlights the precarious situation of close to 60% of the population residing in Karachi's informal settlements. Most lack safe water and adequate sanitation facilities. Besides that, this section also lacks basic urban services such as trash disposal, storm water drainage, all-weather roads, and street lighting. Besides this, these neighborhoods are poorly served in schools, clinics, and public recreation areas. Indeed, such long denial of formal recognition only exacerbates the tribulations of these settlements

by embedding their vulnerability and lack of key services and locking them into unbroken cycles of poverty and exclusion.

One of the driving elements in the growth of slums is governance failure. Governments largely ignore slum settlements; government institutions fail to acknowledge the rights of the urban poor and include them within planned frameworks of urbanization. A very counterproductive view exists that provision of city services will encourage more migration, although evidence to date suggests that migration is driven by a search for employment, not services. This, however, requires governments to initially recognize that urbanization is here to stay. Rather than trying to prevent this through policy for pure rural development-something in which they have already failed-authorities must plan ahead for urban growth proactively. This includes future identification and planning for residential areas, even where full services cannot be delivered in the short term Once people are secure in their land tenure, they begin to invest in housing and neighborhoods, with a resulting incremental, organic upgrading in the long term. A comprehensive urban planning strategy that includes secure land tenure, accessible infrastructure, and community-based development is therefore imperative to the sustainable urban incorporation of informal settlements into the city's fabric (Kampmann & Cirklová, 2024).

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