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INTRODUCTION

One third of the world population is currently living in slum areas. About 42% of Mumbai's population (~5.2 million people) live in slums—and raising—which are in turn packed in the 3200+ slum clusters that barely occupy ~8-9% of its developable land.

Slums proliferate in Mumbai due to lack of affordable housing in the formal market, as a result of faulty land development policies. Current procedures of demolishing slums and providing (either temporary or permanent) free housing to their dwellers, is resulting in high-rise rehabilitation buildings to become "vertical slums". [1,2]

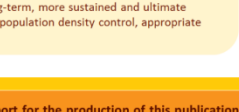
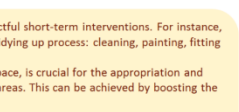
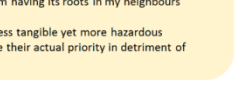
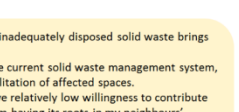
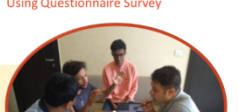
LIVEABILITY

"making inhabitants of any place feel good about where they live through studying the human interaction with the built environment"

Ahmed et al. [3]

References:

- [1] Zhang, Yue. "The credibility of slums: Informal housing and urban governance in India." *Land Use Policy* 79 (2018): 876-890.
- [2] Das, PK. "Claiming Participation in Urban Planning and Design as a Right." *The nature of cities*, TNOC, 19 October 2015.
- [3] Ahmed, Nora Osama, Amir Mostafa El-Halafawy, and Ahmed Mohamed Amin. "A Critical Review of Urban Livability." *European Journal of Sustainable Development* 8.1 (2019): 165-182.
- [4] Ishiyag, M., and Sunil Kumar. "Typology of informal settlements and distribution of slums in the NCT, Delhi." *Journal of Contemporary India Studies: Space and Society* 1 (2011): 37-46.



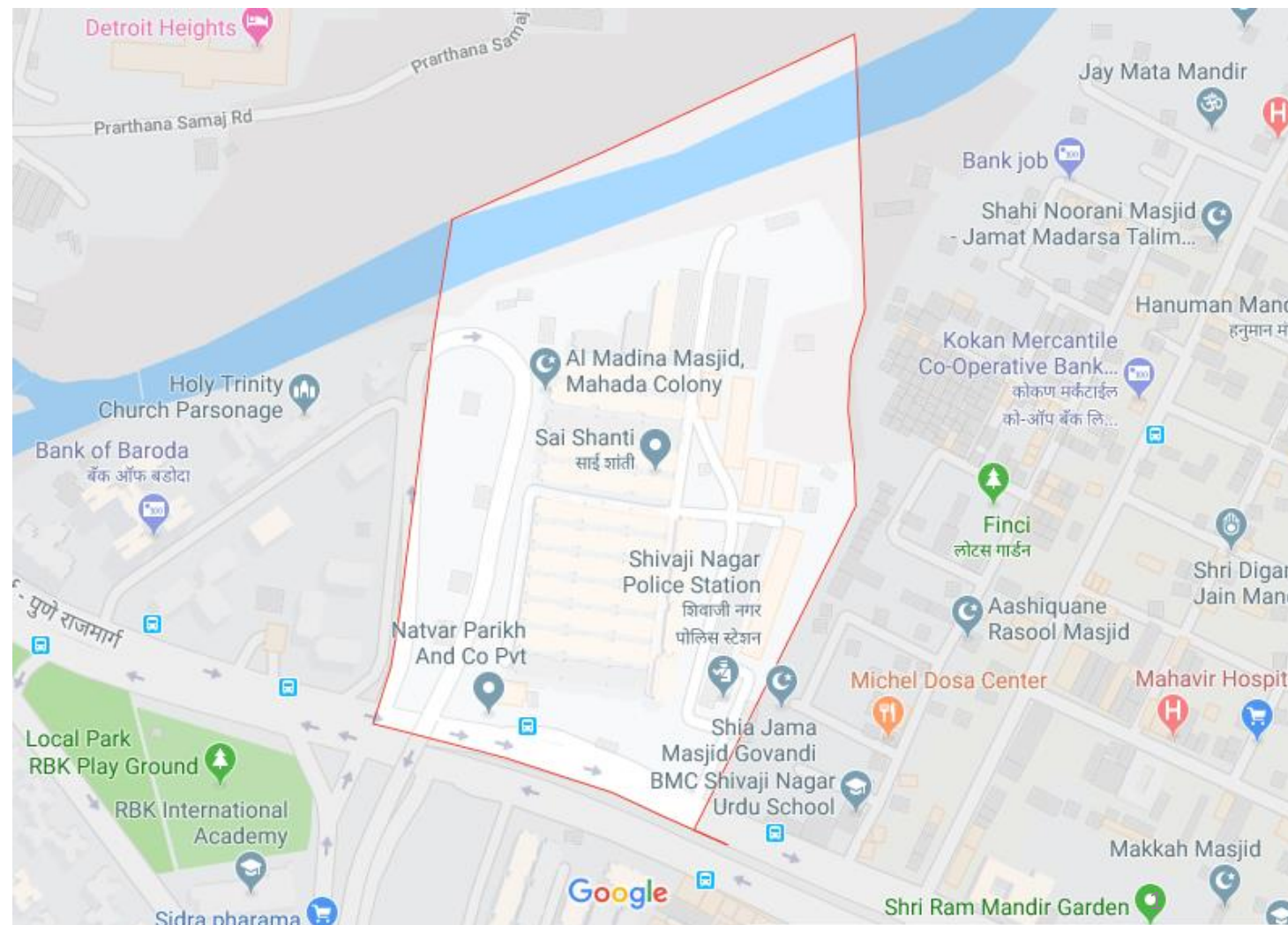
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South Asia



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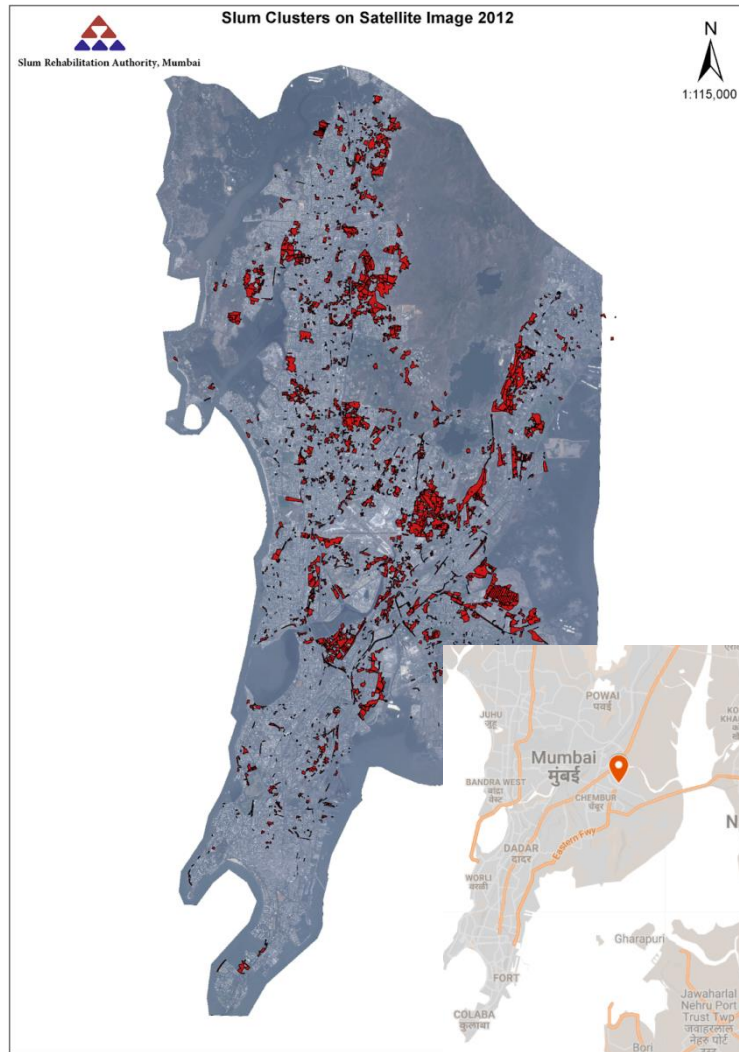
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Slums proliferate in Mumbai due to lack of affordable housing in the formal market, as a result of faulty land development policies. Current procedures of demolishing slums and providing (either temporary or permanent) free housing to their dwellers, is resulting in high-rise rehabilitation buildings to become “vertical slums”. [1,2]

WHAT IS LIVEABILITY ?

“making inhabitants of any place feel good about where they live through studying the human interaction with the built environment [3]”



In 2018:

- ~5.2 MM Mumbaikars in slums
- Slums occupy ~8-9% developable land
- 3200+ slum clusters

Main driver:

Lack of affordable housing in the formal market

PRIMARY OBSERVATIONS

The habitat: Natvar Parikh Compound, located in the Shivaji Nagar area

Types of slums:

- (1) Unauthorized Colonies
- (2) Urban Villages
- (3) **Legally Notified Slum Areas**
- (4) *Jhuggi-Jhompri* Clusters
- (5) Resettlement Colonies
- (6) Pavement Dwellers and *Harijan Bastis* [4]



Key Problem Areas:

Solid Waste, Air Quality, Dwelling Space, Outdoor Space, Health, Social life



Key Reasons:

Policies & Implementation, Lack of Togetherness, Hygiene, Over Population,





METHODOLOGY

Problem with Space Utilization → P1
Hygiene → P2
Pollution & Impl. → P4
Disorderly Over population → P3
Poor Social Life → P5

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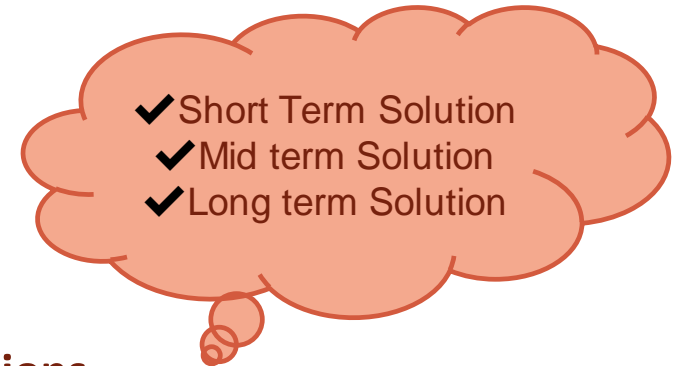
	P1	P2	P3	P4	P5	
P1	/ /	0.5	0	0	0.5	1
P2	0.5	/ /	0	0.5	0.5	1.5
P3	1	1	/ /	0.5	0	2
P4	1	0.5	0.5	/ /	0.5	3
P5	0.5	0.5	1	0.5	/ /	2.5



Problem Prioritization Using Matrix Method



Identifying Potential Solutions Using Brainstorming



Data Collection PBL

Dear respondent,

We are a multidisciplinary team from different Universities and Institutes, working at the moment on an academic project based in IT Bombay. Our objective is to study quality conditions in informal settlements in the city of Mumbai, with the purpose of enhancing the knowledge on problem-based learning techniques.

The present survey consists of 15 questions. Filling it takes approximately 5 minutes. By participating in this survey, you are considerably helping us in reaching our academic objectives. Furthermore, the information of this survey will be treated fully anonymously, and not put out there, there is no right or wrong answer, feel free and comfortable to answer with the greatest sincerity.

If you want to know more about the present study or its results, feel free to email us to: it.bombay@university.edu

Thank you!

Name (optional) _____

Your answer: _____

Gender * _____



Understanding People's Priority Using Questionnaire Survey

LIMITATIONS

- Chosen sample size might not be representative
- Focus on only one type of slum
- Prioritization on solid waste management
- Focus on short-term interventions
- Other stakeholders (e.g. policy makers) not taken into account
- Though validated, the priority of the solid waste issue is not necessarily the most urgent problem to solve

MAJOR OUTCOMES FROM THE SURVEY

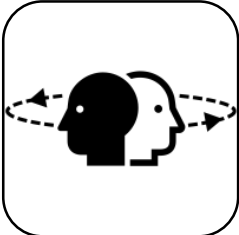
- Solid Waste and Space Related issues seem to be a major concern.
- In most of the cases, more than 5 people are residing in a single flat (which is more likely to produce more wastes).
- In most of the cases people want their surroundings clean and they are even ready to pay to some non dwellers and want to participate in cleaning campaign while few seem hesitant about involving themselves.
- Many people seem in favor of renovating spaces around their buildings.



Conclusions



Aware of consequences of inadequately disposed solid waste



Informed about the problems and need for renovation of existing solid waste collection mechanisms



Less palpable conditions, shadowing the tangible aspects

Recommendations



Renovation of existing unmanaged spaces



Promoting social cohesion



Reformation in policies and its implementation

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PRIMARY OBSERVATIONS

In the Indian context, slums are usually classified in (1) Unauthorized Colonies; (2) Urban Villages; (3) Legally Notified Slum Areas; (4) *Jhuggi-Jhopri* Clusters; (5) Resettlement Colonies; and, (6) Pavement Dwellers and *Harjian Bastis* (Ishtiyag et al., 2011). For the particular study addressed in this project, the **Natvar Parikh Compound**, located in the Shivaji Nagar area of Mumbai, corresponds to a legally notified slum area. This compound was conceived, designed and executed as an official high-rise housing project; however, and in consonance with *Ishtiyag et al. [4]*, due to faulty arrangements and design, lack of adequate ventilation, overcrowding, amongst others, it became unfit for human habitation.

METHODOLOGY



MAJOR OUTCOMES FROM THE SURVEY

- Solid Waste and Space Related issues seem to be a major concern.
- Most of the cases, more than 5 people are residing in a single flat (which is more likely to produce more wastes).
- Majority of the people want their surroundings clean and they are even ready to pay to some non dwellers and want to participate in cleaning campaign while few seem hesitant about involving themselves.
- Many people seem in favor of renovating spaces around their buildings.



CONCLUSIONS

- In general, dwellers are aware of the direct and indirect problems that inadequately disposed solid waste brings to their lives.
- Likewise, inhabitants are also aware of the drawbacks and pitfalls of the current solid waste management system, as well as the opportunities (and need) for its enhancement and rehabilitation of affected spaces.
- However, that awareness is not reflected on the dwellers' and they have relatively low willingness to contribute to the solution of the studied issue. This can be interpreted as a problem having its roots in my neighbours' domains but not mine.
- In such a situation, where many problems overlap one another, some less tangible yet more hazardous conditions—e.g. air quality and its impact on human health—might lose their actual priority in detriment of overlooking more relevant interventions.

RECOMMENDATIONS

- Current awareness amongst dwellers offers room for potentially impactful short-term interventions. For instance, a pilot area (e.g. the surroundings of a single building) can undergo a tidying up process: cleaning, painting, fitting street furniture and playgrounds.
- Sensitization and empowerment of inhabitants, regard to the public space, is crucial for the appropriation and sustained use of recovered spaces and its replication in neighbouring areas. This can be achieved by boosting the community interaction and sense of belonging within a human group.
- However, those short-term actions must be only the spearhead of long-term, more sustained and ultimate solutions able to tackle with the deepest issues: redesign of buildings, population density control, appropriate land development policies, education and raising awareness programs

QUESTIONS?