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Research Article

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Understanding the nexus between environment sustainability and hygiene in Amarpur Batlohiya slum, Varanasi

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Keywords

Environment,
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Amarpur Batlohiya slum,
Sanitation.

Abstract

This research focuses on the environmental sustainability and poor sanitation in the Varanasi, Uttar Pradesh, slum of Amarpur Batlohiya. In order to evaluate the environmental sustainability in the slum region, the research looks at the socio-economic situations and availability to basic facilities for slum inhabitants. Sustainable environment is the necessity for every human being. The collective efforts of residents of any place can be proved significant in shaping the level of sustainable environment.100 families were surveyed using standardised questionnaires and observational techniques to get the primary data. The findings show that the slum's sanitary infrastructure is deficient, with a sizable percentage of families missing basic sanitation facilities. Additionally, using restrooms with big family sizes raises hygienic issues. The report emphasises the urgent need for more research and evidence-based planning to upgrade slum residents' sanitary facilities and guarantee environmental sustainability.

Introduction

Environment refers to the settings in which humans live. Geographically speaking, every nation has two distinct environmental types, namely rural and urban. Slums, which are special environments established up of their own sort, are another characteristic of the urban environment. According to UN Habitat (2003)(1), a slum is a "heavily populated urban area characterised by substandard housing and squalor." According to Section 3 of the Slum Area (Improvement and Clearance) Act of 1956, a slum area is one where buildings are in any way unfit for human habitation or are as a result of decay, overcrowding, improper placement and design of such buildings, narrowness or improper placement of streets, lack of ventilation, light, sanitation facilities, or any combination of these factors that are harmful to safety, health, and morals(2As a result of their preference for living in slums owing to the high cost of living in cities,

millions of people relocate there every year. According to UN-Habitat (2006)(3), almost one billion people live in urban slums worldwide, and that number is increasing by 2.2 percent year. According to UN-Habitat 2010, there were 827.6 million slum dwellers worldwide in 2010 compared to 776.7 million in 2000(4). According to one estimate, one in every seven people worldwide currently live in slums, but by the year 2030, that figure is expected to rise to one in every four. It is estimated that roughly a quarter of the population lives in a region lacking basic services and infrastructure, which is characterised by being overcrowded, precarious, unsanitary, and filthy. This is due to the rapidly growing slum population. It is essential to guarantee that cities expand sustainably with fair access to basic amenities in light of the high rates of population increase and urbanisation (Parikh, Fu, Parikh, McRobie, and George, 2015 in Degert Isoline, Parikh Priti et al. 2016)(5).

For future cities to maintain a balance with their environment and achieve sustainability, equitable supply of physical infrastructure is crucial(5). So, a need for achieving sustainability must be fair access to the fundamental infrastructure and services. However, as of right now, 2.5 billion people lack access to sanitation, 1.8 billion people lack access to safe and clean drinking water, and 1.3 billion people lack access to energy to light their homes (6). From the perspective of environmental sustainability, the deplorable living conditions and hazardous interactions of slums with the environment are highly significant. Environmental sustainability is described as appropriate contact with the environment that promotes long-term environmental quality while preventing resource depletion or deterioration. Environmental sustainability, according to the United Nations (UN) World Commission on Environment and Development, is about taking steps to guarantee that future generations have access to the natural resources they need to enjoy lifestyles that are at least as good as those of current generations(7). Different perspectives on the sustainability context exist in industrialised and developing nations across the world. To build sustainable cities in developing nations, it is essential to reduce poverty while also distributing resources fairly and ensuring access to essential services. Slums' rapid expansion in emerging nations is seriously concerning for the sustainability of the environment. One of the growing nations where the development of slum environments is fairly noticeable in the cities is India. In the slum of Mumbai, India, one square mile is home to around one million people. According to the Indian census, about 41.6% of all slum dwellers live in cities having a population of one million or more (8).The current study is being carried out in the Indian state of Uttar Pradesh’s city of Varanasi. Varanasi has a high concentration of slums due to it being one of the oldest continuously inhabited cities in the world. According to archaeological data, the Ganga valley area of Varanasi saw the beginning of habitation in the 12th century B.C. According to one assessment, the slums occupy almost 17 percent of the area in Varanasi. Slums may be found all across Varanasi, although they tend to cluster close to centres of employment, such as the handloom industry, houses of worship, tourist attractions, and others (9).

According to the Census of India 2011, there are 209 slums in Varanasi that have been officially recognised as slums. Of these, more than 84 percent are located on private property, nearly 14 percent are located on local government land, and less than one percent are located on land owned by the Indian government (10). 407,036 people live in slums as a whole, which amounts for 34% of the city's total population of 78,253 households (10).The environmental issues in the city's urban region have mostly been caused by the slums' fast and ongoing rise in Varanasi. The haphazard growth of the slums in the prime area of the city and near the river channels poses a threat to the surrounding environment. In general, the slums in Varanasi city are located in the low-lying areas, along open drains/Nallah, tank beds and hazardous/toxic sites. Generally, these sites are susceptible to inundation, and other forms of disasters. The slum concentration in these areas has not only led to poor living conditions for the

slum dwellers but also responsible for the general deterioration of the living environment in the city.

The writers of this research attempted to investigate the surroundings and living circumstances of slum inhabitants in Varanasi's largest slum, Amarpur Batlohiya. The socioeconomic circumstances of slum inhabitants and their access to essential utilities are investigated in this exploratory study. The authors of this study employed sustainability metrics to evaluate the slum area's environmental sustainability.

Objectives

- To comprehend the sustainability of the ecosystem and the poor sanitation in Varanasi's Amarpur Batlohiya slum.

Study Area

Varanasi also known as Banaras is located along the left bank of holy river Ganga in the eastern part of the state of Uttar Pradesh. Varanasi spreads over 1535 sq. km area. Varanasi city lies between 25°00' to 25°16' North latitude and 82°50' to 83°10' East longitude. The elevation of the city is between 15 meters to 21 meters above mean sea level.Varanasi city experiences subtropical type of climate. The average rainfall varies from 39 cm to 200 cm. As per census of India 2011, Varanasi is the 6th most populated city of Uttar Pradesh and 30th most populated city in the country with an approximate 1.2 million population(10).Being the oldest habitated city, it has developed many slums. There are 209 notified slums in Varanasi. The present study is conducted in one of the slums named Amarpur Batlohia which is the biggest slum with approximate 1666 households (Census of India, 2011).

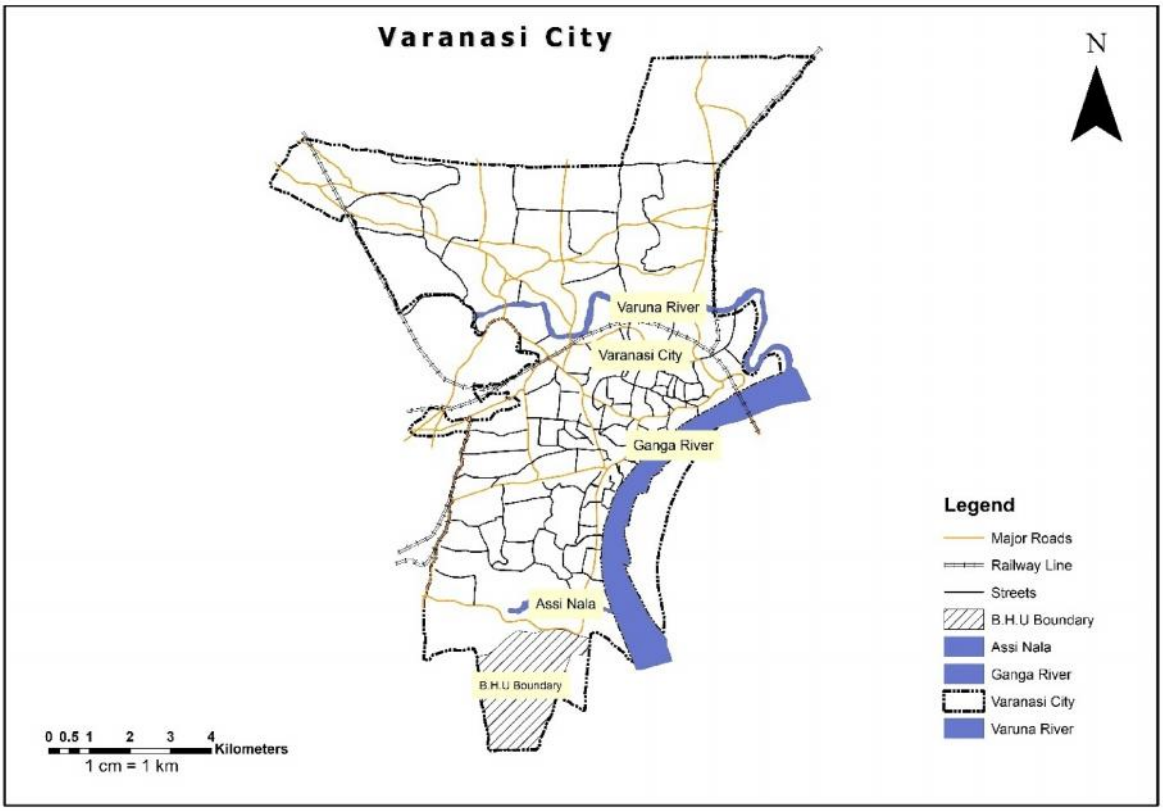

Figure 1. Map of Varanasi City.

Data and Methodology:

The primary survey for the current study was carried out in Varanasi's Amarpur Batlohia slum. The biggest slum in terms of both people and area is Amarpur Batlohia. Formal and informal interviews are undertaken together with the collection of primary data and the use of the observational approach. A total of 100 families in the slum are surveyed using a questionnaire. Checklists based on the study questions are employed in addition to standardised questionnaires. With the help of personal interviews and observational methods, data on sanitary facilities are gathered from each home during house-to-house visits. The current study discusses certain indicators that were collected from the existing literature under broad variables to evaluate the sustainability of the environment.

Results and Discussions

Environment sustainability and Insufficient Hygiene

Both environment sustainability and sanitation facilities are related to each other and reflects the condition of any slum. The provision and availability of adequate sanitation facilities is the reflection of improved environmental sustainability. Adequate sanitation is one of the fundament requirements of every citizen but generally the slum dwellers are deprived form such facilities in most of the developing countries of the world including India. Despite the fact that India has initiated many programs to provide the basic necessity and facilities to all the citizens but the results are not as it was expected. The Swachh Bharat Abhiyan (Clean India Mission) is one of such programs which targeted to provide access to safe drinking water, sanitation, and hygiene facilities, especially in urban India.There are high inequalities in the access of sanitation facilities among urban dwellers and slum dwellers. May be due to the fact that slums are not ready to have sufficient access to these facilities. Slums are those areas where population densities are quite high. There are many factors which play negative roles like the unacceptably is also high in the slums.Access to sanitation facilities is fundamental to prevent the diseases. Generally, slums have either no facility of sanitation or have pathetic conditions of the sanitation. The access to sanitation is generally associated with socio-economic status of the people included the level of literacy and income of the residents. As per UN Habitat 2003, if the excreta are properly disposed of then it is considered that a household has the access to improved sanitation. Along with disposal of excreta, the sharing of toilet is also one of the important indicators of the adequate facilities of sanitation hence the toilet should not be shared with other household in any of the way. In order to maintain healthy living the adequate facilities of sanitation should be available to each household. As per census 2011, in India 18.6 percent of urban households do not have latrine facility within the premises, in slums it is 34 percent. Sanitation is one of the prominent problems in slum area. More than one-quarter of the urban population worldwide has inadequate sanitation; the proportion is much higher for slum dwellers. Inadequate sanitation compels slum residents to use hanging latrines, unhygienic pit latrines, or nearby open spaces, creating significant disease-related hazards(11)(12).

Latrines are classified broadly into “improved” and “unimproved”. Improved latrine is either water-sealed or unsealed but hygienic whereas unimproved latrine is that which is unhygienic it includes unsealed latrine, *hanging/katcha* latrine, and open space or field. In the present study, it is found that almost all the dwelling units have access either to sanitary latrine or pit latrine. Nearly 50 percent of the surveyed houses have sanitary latrine facilities and 42 percent have access to pit latrine facility. The sharing of toilet is another challenging issue for slum dwellers. 74 percent dwellers informed that the toilet is shared by 7 to 9 family members which is highly unhygienic. Whereas 22 percent dwelling units has toilet sharing by 4 to 6 family members. Surprisingly 4 percent of the houses have sharing of toilet by 10 to 12 members of the family.

Table-1 Access to sanitation facilities

Type of Toilet	Number	Percent
Sanitary latrine	49	49%
Pit latrine	42	42%
Hanging/Open space	9	9%
Total (N = 100)	100	100%
Sharing of Toilet		
4–6 family members	22	22%
7–9 family members	74	74%
10–12 family members	4	4%
Total (N = 100)	100	100%

Conclusion

Amarpur Batlohiya is the largest slum which is a notified slum in Varanasi city, Uttar Pradesh. It is observed that despite being a notified slum, there are inadequate facilities including sanitation. In conclusion, the study highlights the issue of inadequate sanitation and its impact on environmental sustainability in the Amarpur Batlohiya slum in Varanasi city. The slum dwellers face challenges with limited access to improved sanitation facilities, including proper disposal of excreta and the absence of non-shared toilets. This contributes to health hazards and environmental degradation. Addressing these challenges is crucial for achieving sustainable development in slums like Amarpur Batlohiya. Efforts should focus on providing equitable access to sanitation infrastructure, implementing targeted policies, and promoting hygiene practices. By addressing these issues, Varanasi and other cities can move towards a more sustainable and inclusive urban environment.

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