Sanitation Facilities in Urban Notified Slums: A Study of Guwahati City

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ABSTRACT: Slums are the settlement of urban poor. As the demographic pressure on towns and cities grows, the needs of urban infrastructures and services also increase. This very problem is further compounded by increasing concentration of poor in the towns and cities. In the city of Guwahati growth of slum pockets was a result of concentration of beggars, sweepers, street vendors, rickshaw and cart-pullers and day-labourers in the certain distinct areas of the city. But slum facilities are very much unsatisfactory for them due to lack of proper water supply and sanitation system. In this paper, an attempt has been made to assess the sanitation facilities among the households of the slum pockets in the city. In addition, it also attempt to identify present problems related to sanitation among slum dwellers in the city. Apart from consultation of secondary sources like books, local municipality body, primary data has been collected from three selected municipality wards based on their core, periphery and intermediate locations among the 31 wards of the Guwahati city.

Keywords: Facilities, Guwahati, Hygienic, Notified slums, Sanitation.

I. Introduction:

There is no common and authoritative definition of slum. Most of the definitions of slums are comparative and mostly based on empirical defined in terms of more or less accurately observed consequences. Different cities from different countries have its own nomenclature for its slums. Urban slums are usually understood as places where conditions of housing fall much below the general standards of living. The term slum, therefore, is comparative and means various things in different context. The above definitions clearly reveal the fact that slum is an evaluative term and not an analytical concept. The definitions, however, reflect clearly the physical and social image of the slums [1].

The Government of India has defined slum areas as those areas where buildings are unit for human habitation (Slum Area Act, 1956). Physically, slums consist of clusters of hutment comprising several rooms constructed with building materials where each room is inhabited by a family sharing a common latrine without arrangement for water supply, drains, disposal of solid waste and garbage within the slum boundaries. Apart from degrading environmental conditions, slums in the urban settlements are also characterized by almost total absence of community and recreational facilities [2].
Proliferation of urban slum is a characteristic feature of India’s migration urbanization system [3]. This indicates massive poverty induced migration from stagnated villages to towns and cities. The Town and Country Planning Organization of Assam offers following explanation on the growth of slum:

Slums are the settlement of urban poor. As the demographic pressure on towns and cities grows, the needs of urban infrastructures and services also increase. This very problem is further compounded by increasing concentration of poor in the towns and cities.

The carrying capacity of the urban local bodies in respect of urban amenities and services thus decline. As a result, some areas of town and cities are being deprived of basic civic amenities and these overcrowded under serviced areas of urban conglomeration, thus turned into slum. These settlements that are slum pockets lay their very nature need minimum basic services like adequate water supply, hygienic sanitation, scientific drains, electricity, housing etc. in order to improve the environmental conditions of the town/ city as a whole [4].

In the city of Guwahati growth of slum pockets was a result of concentration of beggars, sweepers, cobbler, street vendors, rickshaw and cart-pullers and day-labourers in certain distinct areas of the city. In 2006, Guwahati Municipal Corporation (GMC) had identified 26 settlements as slum (CDP, 2006); they had a total population of 1.6 lakh people. Later, the Guwahati City Slum Policy 2009 identified 90 slums having 167,769 populations (GMC 2009). The GMC RAY survey of 2012 identified 217 slum pockets with a population of 1.39 lakh. The drastic change in number of slums is due to the change in definition of slums. In 2009, a pocket with 25-30 households and lack basic amenities was considered as slum while for the survey of 2012, a pocket with 10-15 households and without basic amenities was considered as slum. However, it may note that according to this data, while the number of slums has increased, the slum population has decreased.

II. Objectives of the Study: The present study is aimed at the following objectives-

1. To identify the sanitation facilities among the households of the notified slum pockets in the city
2. To identify present problems related to sanitation among slum dwellers in the city

III. Study Area:

Guwahati, the capital city of Assam is selected for the present study. The city is located on the crescent-shaped south bank of the river Brahmaputra, in the Kamrup Metropolitan District. The foothills of the Shillong plateau lies to its south, with LGB International Airport to the west and town of Narengi to the east. The core of the city is surrounded by hillocks of varying altitude between 100 to 300 meters. The average altitude of the city is 54 meters from the mean sea level. The city extends from 26.5° N to 26.12° N latitude and 91.24°E to 91.51°E
longitude. The stretch of the river Brahmaputra within the city area is 12.78 km. The river has been satisfying the basic needs of the people being the only major source of water, mode of riverine transportation and add-on scenic constituents. According to the 2011 census, Guwahati Municipal Area and Guwahati Metropolitan Area had a population of 963,429 and 968,549 respectively [5]. The municipal area is under the jurisdiction of the Guwahati Municipal Corporation (GMC) whose limits were last extended in 1991 to cover an area of 216.79 sq. km. The Guwahati Metropolitan Area covers about 262 sq. km. and is under the jurisdiction of the Guwahati Metropolitan Development Authority (GMDA). Our study is conducted in areas under the jurisdiction of Guwahati Municipal Corporation which comprises of 31 wards.

The present analysis concentrates on sanitation facilities in the areas of Notified Slum localities under the three selected wards of the Guwahati Municipal Corporation. Ward No. 10 falls on the core of the city which included Notified Slum pockets like Lakhtokia Railway Side, Harijan Colony (Police Reserve), Uzan Bazar Harijan Colony and Uzanbazar Islam Patty. Ward No. 20 is an Intermediate location of the city and it covers Notified Slum Pockets like Pub Bhaskar Nagar Basti, Krishna Nagar Basti, Bengali Basti and Anil Nagar Basti. On the other hand ward no. 25 is a peripheral ward which included Notified Slum Pockets like Sarumataria Masjid Basti, Dwarandh-III, Babu Basti and Lala Basti. The primary data on issues associated with sanitation facilities has been generated from this Twelve Notified Slum pockets under the three selected wards targeted for the study. From each ward Four Notified Slums were selected purposively. Details of Twelve Notified Slum Pockets in the study area is as follows in Table No. 1

Table No.-1: Details of Notified Slum Pockets in the Study Area

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Location (Ward No)</th>
<th>Name of Notified Slum</th>
<th>Area</th>
<th>Slum Population</th>
<th>No. of HHs*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10</td>
<td>Lakhtokia Railway Side</td>
<td>12,400 sq. ft.</td>
<td>200</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>10</td>
<td>Harijan Colony (Police</td>
<td>14,000 sq. ft.</td>
<td>300</td>
<td>50</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
<td>Uzanbazar Harijan Colony</td>
<td>14,800 sq. ft.</td>
<td>280</td>
<td>60</td>
</tr>
<tr>
<td>4</td>
<td>10</td>
<td>Uzanbazar Islam Patty</td>
<td>21,660 sq. ft.</td>
<td>600</td>
<td>130</td>
</tr>
<tr>
<td>5</td>
<td>20</td>
<td>Pub Bhaskar Nagar Basti</td>
<td>22,444 sq. ft.</td>
<td>700</td>
<td>142</td>
</tr>
<tr>
<td>6</td>
<td>20</td>
<td>Krishna Nagar Basti</td>
<td>7,600 sq. ft.</td>
<td>250</td>
<td>25</td>
</tr>
<tr>
<td>7</td>
<td>20</td>
<td>Bengali Basti</td>
<td>14,400 sq. ft.</td>
<td>250</td>
<td>50</td>
</tr>
<tr>
<td>8</td>
<td>20</td>
<td>Anil Nagar Basti</td>
<td>13,900 sq. ft.</td>
<td>278</td>
<td>48</td>
</tr>
<tr>
<td>9</td>
<td>25</td>
<td>Sarumataria Masjid Basti</td>
<td>14,200 sq. ft.</td>
<td>200</td>
<td>50</td>
</tr>
<tr>
<td>10</td>
<td>25</td>
<td>Dwarandh-III</td>
<td>5,600 sq. ft.</td>
<td>100</td>
<td>25</td>
</tr>
<tr>
<td>11</td>
<td>25</td>
<td>Babu Basti</td>
<td>15,700 sq. ft.</td>
<td>240</td>
<td>60</td>
</tr>
<tr>
<td>12</td>
<td>25</td>
<td>Lala Basti</td>
<td>16,300 sq. ft.</td>
<td>300</td>
<td>60</td>
</tr>
</tbody>
</table>

*HHs= Households, Source: GMC RAY Survey, 2012
IV. Methodology:

The study was conducted in areas under the jurisdiction of the Guwahati Municipal Corporation (GMC) which comprises of total 31 wards. The information for the present study has been collected from both primary and secondary sources. The data has been collected in sequential stages. In the first stage, secondary data has been collected from the official records, annual reports of the office of the Guwahati Municipal Corporation and personal interviews with the concerned officials of Municipal Corporation, responsible for sanitation facilities in the city. Books and websites are also used in the process to gather relevant information. In the second stage, primary data on issues associated with sanitation facilities has been generated from three wards selected purposively to represent heterogeneity of the city as far as possible. These three wards represent the core, the peripheries and the intermediate locations of the city. Ward No. 10 falls on the core of the city area, Ward No. 20 was selected which is located in Intermediate area of the city. Similarly, Ward No. 25 was chosen located at periphery area of the city. In the third stage, for the present study a sample of 96 households was selected from 12 Notified Slums of the three wards of Guwahati city. From each ward 4 Notified Slums were selected through purposive sampling. The sampling technique was purposive as it was considered that Notified Slums have better opportunities for accessing basic amenities as against Non-Notified Slums. Out of a sample size of 96, 32 households were drawn from each ward. Thus, 8 households from each notified slums (12) located in the three wards were selected to arrive at the total households of 96.

V. Result and Discussion:

Sanitation has a close and direct link with the environment, water supply, health and hygiene. The Guwahati Municipal Corporation (GMC) is the sole authority for sanitation as well as collection and disposal of the garbage in the slum pockets of the Guwahati City. The present analysis with regard to sanitation facilities in the slum areas has been generated from Twelve Notified Slum Pockets under the the three selected wards targeted for the present study. The sub-indicators used in the present analysis is to check reliability of sanitation facilities are- household toilet facility, toilet facility connected with sewer, well served drainage facility for home, collection of garbage regularly, frequency of garbage collection and waste water issue.

a) Household Toilet Facility

A question was asked to slum respondents regarding the household toilet facilities in their premises. The data regarding the household toilet facilities in the study area (ward-wise) is shown in figure below (Figure-1).
Figure-1: Responses of the Respondents with regard to Household Toilet Facility

Ward No. 10: It is observed from the study that in core city area, slum dwellers have not their own toilet facility. They use both free public toilet and community toilet constructed by the Guwahati Municipal Corporation.

Ward No. 20: The data on household toilet facility in intermediate area of the city revealed that 12.5 per cent slum respondents have their own pit latrine (Kuccha toilet). It is observed that pit latrines are not hygienic and environmental friendly.

Ward No. 25: In periphery region also 31.3 per cent household have their own pit latrine in their premises.

Mode of defecation (Those who have not Toilet Facility at Home): The study reveals that those slum dwellers which have not toilet facility at home, used alternative mode of defecation. The other mode of defecation used by the slum respondents in the three selected wards are shown in figure no.2

Figure-2: Responses of the Respondents with regard to Other Mode of Defecation
Ward No. 10: The data revealed that there is well organization of toilet facility in the core area of the city. Under this ward, 21.9 per cent uses free public toilet managed by the Guwahati Municipal Corporation, while 78.1 per cent uses community toilet constructed by the Corporation in the core city area. But no slum pockets (selected for the study) has separate sanitation locks for male and female users. Although there are provision for free public toilet and community toilet are available for slum dwellers but sanitation facilities are not sufficient. But it is also observed that there is no practice open mode of defecation in the notified slum pockets of this ward.

Ward No. 20: So far as intermediate location of the city with regard to toilet facility is concerned, 37.5 per cent respondents defecates in the open (Bahini and Bharalu river bank and Hengrabari hill side), while 25 per cent respondents uses free public toilet and also 25 per cent uses community toilet constructed by the Guwahati Municipal Corporation. Twenty Five to Thirty households have shared this toilet facility with other households.

Ward No. 25: In periphery area of the city the picture is quite different. Here, 43.8 per cent respondents defecates in the open (railway line, hill side). It is revealed that during open defecation women have fear of reptiles, snake and scorpion. They can not go during rainy season because women are afraid of slipping from the hill. Moreover, they are also not safe because of men are loitering in the area of open defecation. On the other hand 25 per cent uses neighbour’s toilet which are temporary in nature (pit latrine). There is no provision for community and free-public toilet facility in this area. It is also observed that children are generally used the yard and the places near the tube-wells for defecating.

So, from the above analysis, it is found that sanitation facilities in both intermediate and periphery slum pockets are compararatively unsatisfactory than core city area. Though there are provision for community toilet and free public toilet in the notified slum pockets of core and intermediate area of the city but this toilets does not have any integrated sewerage system at present. This toilets have only septic tanks without any collective disposal system for effluents. The sewage from the septic tanks goes directly into the open drain. This ultimately makes the surroundings unclean, unhygienic and conducive for the growth of disease carrying organisms. Moreover, the soak pits connected to septic tanks are becoming non-functional due to high sub soil water table within a short span of time. Thus, toilet facilities in the notified slum pockets of the study area are not hygienic and environmental friendly.

b) Waste Management

The Guwahati Municipal Corporation (GMC) is the sole authority for the sanitation as well collection and disposal of he garbage in the city. Data as shown (Table No. 2) below on domestic waste management process of the slum households revealed that there is a difference among the three wards.
Table No.2: Responses of respondents with regard to domestic waste management

<table>
<thead>
<tr>
<th>Ward</th>
<th>Waste pit in the yard</th>
<th>Gutter</th>
<th>Waste ground</th>
<th>House to house collection</th>
<th>GMC garbage bin</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 (Core)</td>
<td>0</td>
<td>0</td>
<td>32.2</td>
<td>0</td>
<td>68.8</td>
</tr>
<tr>
<td>20 (Intermediate)</td>
<td>0</td>
<td>0</td>
<td>28.7</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>25 (Periphery)</td>
<td>9.4</td>
<td>37.5</td>
<td>46.9</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>


Ward No. 10: It is revealed from the study that in core area 32.2 slum respondents use waste ground for their domestic waste and 68.8 respondents use GMC garbage bin installed in their area by the city corporation.

Ward No. 20: In intermediate area of the city, 28.7 slum respondents use waste ground near their residential area for domestic waste. Guwahati Municipal Corporation has not installed any garbage bin in the notified slum pockets in this ward.

Ward No. 20: In the periphery area, 9.4 per cent respondents throw their waste in the waste pit in the yard and 37.5 per cent use gutter for their domestic waste. On the other hand, 46.9 per cent respondents use waste ground for their domestic waste.

Table No.3: Responses of the Respondents with regard to frequency of Waste Collection

<table>
<thead>
<tr>
<th>Ward</th>
<th>Once a day</th>
<th>Thrice a week</th>
<th>More than one</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>18.8</td>
<td>25</td>
<td>6.3</td>
</tr>
<tr>
<td>20</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>25</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>


Data on frequency of waste collection in the notified slum pockets revealed that there is a vast difference among the slum pockets of the three selected wards. In core city area (ward no.10) 18.8 slum respondents opined that Corporation workers collect their domestic waste from the garbage bin every day in the morning or evening (Uzan Bazar Harijan Colony and Uzan Bazar Islam Patty), while 25 per cent respondents of Harijan Colony (Police Reserve) told that waste are collected from the bin by the Corporation thrice in a week. Though municipal bins are found in this slum pockets for waste disposal, but not sufficient and the inhabitants have to dispose solid waste in open ground and road sides that is vulnerable for the deterioration of environment. On the other hand 6.3 per cent respondents from Lakhtokia
Railway Side opined that waste are collected from the waste ground by the Corporation worker once in a week. But in the slum pockets of intermediate and periphery area of the city, the waste collection system is totally absent. Slum dwellers of both wards (ward 20 and 25) have to throw their domestic waste in the gutter, yard and small waste ground in their residential area. Moreover, there are no provision for garbage bins in the slum pockets of this two wards. Solid waste disposing system of this slum areas are very low poor and as a result the environmental is hazardous.

C) Waste Water Issue

On the question of drainage connection for waste water disposal, it is revealed that there is a difference in the slum pockets of the three selected wards. The data regarding drainage connection for waste water disposal in the study area (ward-wise) is shown in the figure (3) below.

Figure-3: Responses of the Respondents with regard to Waste Water Disposal

Ward No.10: It is revealed from the above figure that there is well drainage system with regard to waste water disposal in the slum pockets of core city area. The 50 per cent slum respondents of the slum pockets of Uzanbazar Harijan Colony and Uzanbazar Islam Patty are of the view that they have drainage facility for their domestic waste disposal. While 50 per cent respondents from Lakhtokia Railway Side and Harijan Colony (Police Reserve) opined that they have no such provision.

Ward No. 20: In the intermediate location of the city, 25 per cent respondents from Anil Nagar Basti and Bengali Basti replied that there is drainage system in their area. But 75 per cent slum respondents of Pub Bhaskar Nagar Basti and Krishna Nagar Basti responded that there is no drainage provision for domestic waste disposal in their area.
Ward No. 25: But in the notified slum pockets of periphery region, the domestic waste water disposal picture is quite different as compared with other wards. There is no drainage provision in the the slum pockets under this ward for domestic waste water disposal and it has bad impact on the environment.

VI. Conclusion and Recommendation:

On the basis of the above analysis of data, following conclusion may be drawn with regard to the objective of the study.

Access to improved water sanitation facilities is a fundamental need and human right. It is vital for the dignity and health of all people. Slum dwellers is also a vital part of the society, we can not ignore them at well. The study in the Notified Slum Pockets of the Guwahati city showed that the sanitary conditions are very poor. It is found that out of Twelve Notified Slum Pockets, only three slum pockets are better served by the City Corporation with regard to sanitation facilities are concerned in the study area. These Notified Slum Pockets are- Uzan Bazar Harijan Colony and Uzan Bazar Islam Patty (ward no. 10, core city area) and Bengali Basti (ward no. 20, intermediate area). But it is observed that rest of the slum pockets are not well served so far as sanitation facilities are concerned. In the Notified Slum Pockets of periphery region (ward no. 25), sanitation facilities are very pathetic. Significant amount of open defecation (43.8 per cent) is found in the periphery region. Normally slum pockets under this region have pit latrines (25 per cent) which are kuccha and no fully hygienic. These may cause ground-water contamination depending on the soil characteristics and distance between the water sources and latrines. Garbage management and drainage system are totally unsatisfactory in the slum pockets of the periphery region. It is observed that houses, shops, drains, roads etc. have been constructed unplanned and domestic waste are stored on open ground in these slum pockets. Moreover, disposal of domestic wastes and waste water in open space and open drains also causes a severe hazardous condition. The open disposal of human excreta pollutes the nearby canals and drains causing severe water pollution. Drainage system is most neglected sector in the slum pockets of periphery region. Thus the deteriorated scenario of the slum pockets of the study area causes severe environmental degradation affecting the environment of the Guwahati city.

Two Focus Group Discussions (FGDs) were arranged to know the ground reality with regard to sanitation facilities in the Notified Slum Pockets of the city. During FGDs women have voiced how the water supply and sanitation (WSS) deficiencies have created problems of girls safety and their own problems of delay in going to work, loss of wages due to this delay because of time taken to collect and fetch water and most importantly embarrassment to them and to the girls with having to go to defecate in open grounds. The voices of women clearly indicated a lack of responsiveness and understanding of their needs by service providers. It is therefore, Government and NGOs should come forward to take necessary steps and effective measures to offer the best facilities for taking more programs in slum area on water supply and
sanitation. Moreover, specific rules and regulations need to be established to force the owners of household to provide the adequate water supply, sanitary facilities in their slums.

References:


