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SLUMS OF HYDERABAD: A SPATIO -TEMPORAL ANALYSIS

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ABSTRACT: The present study, part of a larger project, is an overview of the various studies on slums in India including those related to Hyderabad. Making a detailed analysis of the slums of Hyderabad over a period of time (1962-2009) along with certain cases of 2019, the study reveals that Hyderabad, in line with all other such cities, had only a few slums in the beginning. The number of slums multiplied with incessant migration into the city. It has been in the post reforms era that Hyderabad has witnessed a burgeoning number of slums. The southern part of Hyderabad has the largest cluster of slums as also the slum population. It is also characterized by a very small areal extent of slums and their close juxtaposition to each other. Apart from this, the relatively outlying areas like Serilingampally and Kukatpally are found to have a large population in non-notified slums pointing out to a massive growth of slum population in these areas in the near future.

Keywords: Urban planning, Haphazard growth, Slums, Explosive growth, Globalization

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Introduction and the study area

Hyderabad, a historic city experiencing rapid growth and development along with physical expansion, is not free from the slums, which have grown fast recently. Slum dwellers account for one-third or 33.0 per cent in population of the city. The slum population increased more than two and half times (264.0 per cent) between 2001 and 2011. These slums started growing and developing on vacant parcels of land in the absence of adequate urban planning and when the neighbouring areas became densely populated they are found in the center of such densely populated residential areas, right in the city centre. The more recent slums started growing and developing near upcoming residential and industrial areas, especially in the west, northwest, north and northeast. Slums are also found close to water bodies, sometimes encroaching on their dry beds and hence are susceptible to flooding. They are also found in other floodable low-lying areas. Slums are also quite surprisingly found close to high-class areas and commercial areas of Hyderabad, providing employment opportunities to the slum dwellers (Markandey et al. 2011). Thus, it is not surprising if one finds islands of poverty in the midst of an ocean of magnificence.

More than half of the slum population of Hyderabad (2.3 million) has had a stay of 10 years in the city and the other half migrated from different parts of India in the last decade. These slum dwellers are mainly street vendors and construction workers, engaged in the informal activities.

The number of slum households in the city is about half a million, living in grim conditions without basic civic amenities like safe drinking water and sanitation, which affects their immune system and increases susceptibility to infectious and communicable diseases like tuberculosis, diarrhea, pneumonia, malaria and dengue. Lack of public healthcare services

and absence of health-seeking behaviour in these underserved communities further makes it challenging for them to lead a healthy life. (See for details: smilefoundationindia.org/slums-of-hyderbad.html).

The definition of a Slum varies from country to country depending on the cultural mores and economic conditions. Slums are residential areas of the least choice, dilapidated houses, poor ventilation, inadequate lighting, poor sanitation, lack of safe drinking water, overcrowding, convoluted street patterns, fire and flood hazards, poor facilities for education and health, unhygienic living conditions and air and water- borne diseases. Socially, they are characterized by drug abuse, alcoholism, crime, vandalism, escapism, apathy and social isolation (Census of India, 2001; Haggett et al., 1981).

In India, slums have been defined under section 3 of the Slum Areas (Improvement and Clearance) Act, 1956 as areas where buildings are in any respect unfit for human habitation; are by reason of dilapidation, overcrowding, faulty arrangement and design of such buildings, narrowness or faulty arrangement of streets, lack of ventilation, light, sanitation facilities or any combination of these factors which are detrimental to safety, health and morals.

Census of India has adopted the definition of 'Slum' areas as follows:(i) All areas notified as 'Slum' by State/Local Government and Union Territory Administration under any Act; (ii) All areas recognized as 'Slum' by State/Local Government and Union Territory Administration which have not been formally notified as slum under any act; and (iii) A compact area of at least 300 persons or about 60-70 households of poorly built congested tenements, in unhygienic environment usually with inadequate infrastructure and lacking in proper sanitary and drinking water facilities (Census of India, 2001).

Squatter settlements, similar to slums in their physical appearance, lack basic amenities, and are a concentration of dwellings built on land neither owned nor rented by the squatters. These settlements develop by organized invasion, by gradual accretion/by government initiation. They are a dominant feature in urban areas of Asia, Latin America and Africa and have high rates of in-migration from traditional inner-city dwellings and from rural areas. They are, therefore, regarded as transitional urban settlements.

Thus, while the term 'slum' refers to the environmental aspects of an area, 'squatter' refers to the legality of land ownership and infrastructure. While slums take up the old settled central city locations, squatters are usually found on the periphery of the city. Squatters are also known as spontaneous settlements/shanty towns as they come up without notice and grow in an uncontrolled way. They also lack in service provision; and are the transitional areas at the fringe of urban areas acting as reception zones for the migrants, finding a semblance of both the rural and urban life and hence ease in adaptation.

Scholars have used different terms for squatter settlements, highlighting the attitudes and approaches towards them-ranging from a positive to neutral to negative outlook. These are called: Informal settlements, Low-income settlements, Semi-permanent settlements, shantytowns, spontaneous settlements, unauthorized settlements, unplanned settlements, and

uncontrolled settlements. Some of the local/colloquial names for squatter settlements (often also used for slum settlements) are Ronchos-Venezuela, Callampas, Campamentos-Chile, Favelas-Brazil, Barriadas-Peru, Villas Misarias-Argentina, Colonias Leterias–Mexico, Barong Barong–Phillipines, Kevittits-Myanmar, Gecekondu-Turkey, Bastee, Jhuggi-Jhampri- India (Srinivas, 2015).

Much before the municipalities notifying the slums, they appear on the urban landscape as squatter settlements. At this stage if they can be recognized with the help of their signatures, and ameliorative measures taken, the cities administrators can avoid the burgeoning problems that accompany them (Markandey, 2005).

Literature review

In 2009, according to the Greater Hyderabad Municipal Corporation there were 1466 slums in Hyderabad housing more than 1.8 million persons (GHMC 2019). The perpetual increase in the number of slums and their population is a result of recurrent migration of people from the rural areas. Das (2015) noted that more than one-fourth of the urban population of Hyderabad resides in the slums, the national average being 17.5 per cent. As already stated, this share has gone to 33.0 per cent now.

Developing country like India with its escalating population is bound to have housing problems. A general common model to explain the intra-urban residential mobility originates in a centrally located slum followed by peripheral squatter *kuccha* (mud built) huts, transformed later into *pucca* (durable) houses. Then follows the intra-urban migration from the center to the periphery. However, considering the Indian urban scene this common model is inadequate to denote the reality of urban areas (Thakur and Parai, 1993). Rural-urban migrants migrating to escape the declining rural economies have spurred the growth of the slums and the informal sector. There is thus a shift of workers from the traditional to modern sectors of the economy (Kundu, 2011). With reference to the bottom-up approach to city development there is a low-end housing construction like Rajiv Awas Yojana in India where the slum dwellers gradually become property owners (Maringanti, 2011). These packages, however, have their own limitations and are also criticized as property rights are considered exclusivist and not much suited to India's urban poor as they may not have the required ‘credit–worthiness’ and adequate ‘length of stay’, thus making them less eligible for these benefits.

The efforts of the city governments to make the cities more visible and competitive from an international perspective have relegated the urban poor to the peri-urban areas. In Hyderabad, the poor farmers are forced to sell their land in 17 villages on the periphery of the city and facilitate the setting up of Cyberabad. A skilled workforce coupled with investment in the software sector has spurred the growth of this economic sector not only in Hyderabad but in other cities of its kind as well (Das, 2015).

There can be numerous heat islands in the city contingent to the built-up area, density of population, physiography etc., (Ramachandraiah, 1997). It is found the temperature gradient is

rather steep over the slums of Visakhapatnam at three to five degrees compared to 0.1 degrees over the central parts of the city for every 100 feet of ground distance. Heat islands play an important role in climatic variations within the city and also alter the micro climates within cities. Thus, the slum areas are perceptibly the warmer parts of the city.

Water is reported to be available to 95.0 per cent population of Hyderabad. For slum population, this average is 90.0 and that too with the irregular and insufficient supply, responsible for several health issues like gastrointestinal disorders and skin problems among the slum dwellers.

In 2016, the city had over 3.87 lakh water connections. Of them, more than 98 thousand or 25.5 per cent were to the slums. The Greater Hyderabad Municipal Corporation (GHMC) has recorded 1,468 slums spread across the city, of which 1,131 are notified and have access to water connections (for details, *thenewsminute.com/article/water-access-gruelling-game-hyderabad-s-slum-dwellers-103226*).

In a study, Kit and Lideke (2013), using multi-year and multi-sensor very high-resolution satellite data to automatically identify slum area change in Hyderabad from 2003 to 2010, found a remarkable increase in slum area in the city. They attempted to detect the tendencies towards slum development. Kotyal and Biradar (2008) identified slums in the twin cities of Hubli-Dharwad to analyze their characteristics and suggested measures for their eradication.

Environmental problems of industrial slums have been studied in the context of the urban environment and quality of life in two industrial slums in Hyderabad and it is believed that this study will be a forerunner to further studies in this direction (Balakishan, 2011).

More than one third of the slums of Hyderabad originated in vacant land (Markandey, 2008). Old slums have occupied small pockets of vacant spaces within the built-up areas in the heart of the city, while new ones seem to be radiating out from the core of the city in a sectoral fashion. In a paper entitled 'Sustainable Land Resource Management', Reddy (2017) found a total of 1476 slums in Hyderabad (1179 notified and 297 non-notified). The total slum area was stated to be 80.45 Km^2 making more than one-tenth or 12.0 per cent of the total GHMC area; and more than 3.5 lakh persons residing in the notified slums.

In a study of the slums of Hyderabad (Markandey, 2005) with all types of land use associations it is found that the slums have certain generic characteristics as they are viewed from space and certain unique characteristics. They stand in contrast to their surrounding areas as they have very irregular roads i.e. lanes and bye-lanes within the slum and hence an asymmetrical internal geometry. They also have an uneven external geometry, small low-rise structures, random distribution, immensely fluctuating reflectance and sometimes a distinct transition from one to another land use type e.g. from industrial to middle class residential etc. The specific characteristics are where the slums on the periphery of the city have low-rise buildings compared to those in central city locations showing a resemblance of the third dimension. Also slums located in the thickly populated and high value land in the central city show an impenetrable packing of structures; those close to graveyards display the small

structure phenomena; those on elevated land display a chipping off of the sides of hillocks to make room for the housing structures; and those along linear features like roads, railway lines, *nalas* etc., show a distinct tendency to be linear.

In a study on squatter settlement of Delhi, Shekhar (2012) found that the policy of demolition, eviction and resettlement has failed to contain the growth of slums in the past forty years. The study noted that the slums in varying locations had varying problems; and for gaining a better insight into the scenario a typology of slums, based on their location and services present, was attempted. The study recommended that the slums lying at critical location and also those where pressure on services was beyond repair having a threat of outbreak of epidemics posing a threat to human health need to be resettled. This study brought out the fact that slums are not usually located on areas of least choice as is commonly understood. In Delhi they are located on prime lands and with the intervention of the concerned agencies and the judiciary they will eventually be evicted.

A study of Agra in Uttar Pradesh reveals that how constant efforts in remaking Agra as the 'global' tourist destination has overtaken the local. The slums dwellers and disadvantageous communities have been marginalized in urban space (Gavsker, 2017). According to 2001 Census, only 10.0 per cent population of Agra was residing in the slums, while the District Urban Development Authority puts forth that about 44.0 per cent of total population of Agra lives in slums, located at very spatially and environmentally susceptible areas. About two-fifths the slum population does not have access to sanitation facility.

In an article, Sajjad et al. (2011) studied child labour in six sampled slum localities of Meerut city to find that the poor incomes of the parents have driven the children into a vulnerable ecology where they are the victims of diseases owing to poor living and unhygienic working conditions.

In a paper Shekhar (2014) highlighted the importance of satellite remote sensing in mapping and monitoring of the slums for sustainable planning. It attempts to find answers to the questions: Why do we need "slum ontology"? How can the slum ontology help in identifying the slums in a high-resolution data? Who is going to identify the slums? The results are quite encouraging, and further research on this to refine the slum ontology will yield better results to enact slum policies in the developing countries. The stakeholders vary from geospatial experts at GIS cell of national, state or municipal corporation level to the poor slum dwellers. The knowledge models such as slum ontology help them to understand the domain concepts and facilitated the communication between the stakeholders. By refining the ontology further and also training of the local community, better results can be obtained. This will really help in the better intervention of slum development programs, where the benefit of science will reach the common man in improving their living standards.

In another paper, Singh and Kaish (2013) examine the plight of migrant slum dwellers, their livelihood conditions, and factors behind migration. The study based on primary data collected from 1140 households, points out that rural poverty, higher wages in urban areas

and better employment opportunities are the main reasons behind migration. However, the migrants lack education and skill; and get employment only in the informal sector. The researchers noted that job uncertainty, low wages and indebtedness being the common phenomena, the migrants in slums get the worst of both the rural and urban worlds.

A study by Ayyar and Khandare (2013) of the slums located in the suburbs of Mumbai, based on socio-anthropological surveys, focused group discussions and interviews, examines the role of caste and social networks in the background of voluntary housing. The study indicates to a positive outcome of social networks, enabling the poor to have safety nets vital to their survival. However, these networks have been found to be segmented, closed and restrictive and exclude others.

A study of five slums of Varanasi, based on primary survey of 150 households in the five slums, examines the quality of life in slums statistically. Taking the 10 variables, the study uses composite index and standard deviation techniques for determining the quality of life. Also, the study briefly compare the condition of slum dwellers with the targets of UN Millennium Development Goals and India Vision 2020 to suggest some measures of inclusive development and planning to improve the quality of life in slums (Jha and Tripathi, 2014). A study of slums in Nanded city concluded that slums are increasing in city and the general standard of living of the people is on decline (Deshmukh and Khadke, 2015).

Shekhar (2017) while examining slum development planning and programs in India with special focus on Rajiv Awas Yojana (RAY) noted that several programs have been launched at different times to promote integrated development of the city and to help slum dwellers in gaining access to basic services. The study making an overview of various slum development programs of India discusses the principles underlying RAY and suggests the ways to overcome the shortcomings of earlier slum development programs.

In a study focusing on child nutrition and anthropometric failures among children in slums and rehabilitation areas of Mumbai, based on a primary survey of 510 children in low-income households, Gupt and Chattopadhyay (2018) examined the levels and reasons for child undernutrition along with the impact of micro environmental conditions of slums on child undernutrition. The study found that nutritional conditions of children in slum rehabilitation housing are better than those in the slums. Stunting, wasting and underweight, the three undernutrition indices, are worst in non-notified slums followed by notified slums and are lowest in the rehabilitation centres. Apart from better micro environment factors like housing, mother's education, income generation and mother's nutrition also impact child nutrition.

In a paper, Raghavswamy (2016) provided detailed information on the Government of India initiatives for use of GIS technology in urban planning and slum improvement. In this context, 11th Plan (2007-2012) efforts to create GIS database for multi-level planning of towns/cities and slums. The Ministry of Urban Development (MOUD) and the Ministry of Housing and Urban Poverty Alleviation (MoHUPA), Government of India, New Delhi launched the National Urban Information System (NUIS) and the National Slum Free City

Planning (SFCP), respectively. The latter initiative aimed at developing GIS database for 152 towns/cities in the country on different spatial-scales, sensors, themes, applications with a view to prepare the Master Plans/Development Plans, Detailed Town Planning Schemes and Utility Plans. The mapping work was done on 1: 10,000 or 1:2000 scales using satellite, aerial, and GPS techniques supported by ground verification and collaborative data. The two important datasets of NUIS were Urban Spatial Information System (USIS) and National Urban Databank Indicators (NUDBI). The SFCP focused to prepare, update and manage 'slum level' database. A combination of geospatial technologies like remote sensing, GPS, Total Station along with GIS and MIS were utilized. The mapping was done on 1: 5000/1:500 scales. Both the schemes gave sufficient push for capacity building and training. The final quality checked thematic database is hosted in Bhuvan Portal.

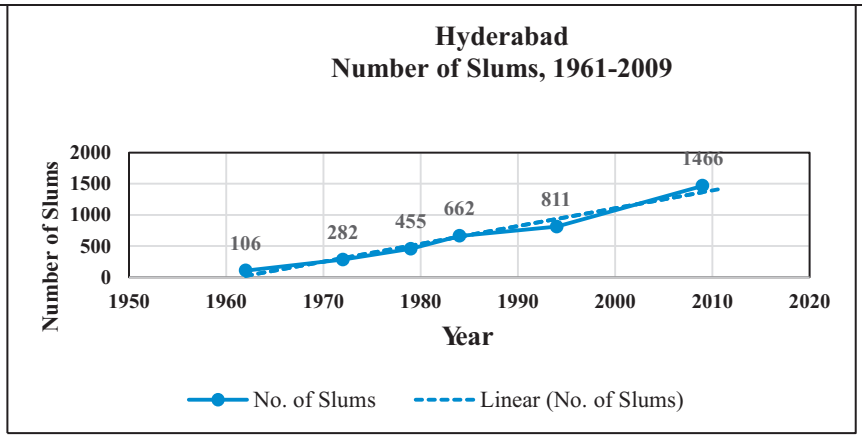
While mapping physical infrastructure of slums in Kamareddy town of Telangana state, Goud (2016) found at least 17 slums, which were plagued by the usual problems of shortage of affordable housing for the poor and lack of amenities, causing unhygienic living conditions and homelessness. The study developed the digital database for critical physical infrastructure for the of slum dwellers. Field work is carried out to obtain spatial and non-spatial data with regard to various infrastructure facilities and to map informal settlements through geospatial technologies like GIS, GPS and Remote Sensing. It is found that the availability of physical infrastructure is weak and the geospatial techniques provide enough support for the arguments.

Slums of Hyderabad

Hyderabad, being the capital city of a Princely State in British India with a sprawling pattern of layout, had very few slums to begin with. Even after the reorganization of the states in 1956, Hyderabad becoming the capital of Andhra Pradesh, it had just 106 slums (in 1962). Thereafter, growth of slums had been phenomenal. It has, nonetheless, to be remembered that the increase in numbers is tied up with the notification and de-notification of the government policy having political overtones. Sometimes, slums attain a level of amenities and facilities, where they no longer merit being labelled as slums, yet they retain the tag as it entitles them to certain benefits and subsidies like lower property taxes, water cess etc. apart from being covered by an umbrella of various welfare schemes implemented by the government from time to time. The lower rate of growth of slums does not rule out the emergence of squatter settlements, which do not have the legal status of a slum (Markandey, 2005).

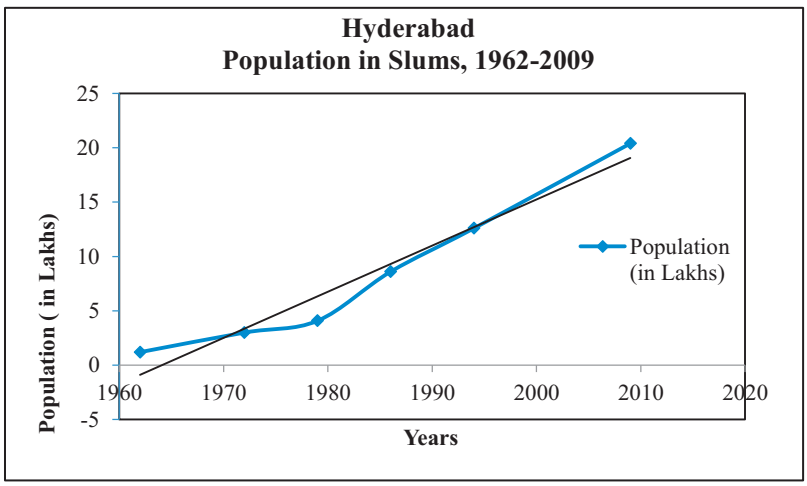
The latest survey of slums conducted by the GHMC in 2009 states that Hyderabad has 1466 slums with a population of more than 1.8 million (Fig. 1 and Fig. 2). There has been a remarkable increase both in the number and population of slums 1980s onward. It is largely attributed to rural-urban migration, Hyderabad acting as a prime magnet to attract the migration flows. The slums are mostly concentrated in the Central, followed by the Southern, the Northern, the Eastern and the Western zones (Fig. 3). The Central and the Southern zones were part of the erstwhile Municipal Corporation of Hyderabad (MCH), now the core of

Hyderabad city. So far as the Northern, Eastern and Western zones are concerned, some of their constituent units were part of the erstwhile Hyderabad Urban Development Authority (HUDA) having a larger jurisdiction compared with MCH, others were appended subsequently. Some of them are in the process of infilling, mostly having dense population already. It was observed in 2005 that the more recent slums started growing and developing near upcoming residential and industrial areas, especially in the west, northwest, north and northeast (Markandey, 2005). The eastern part of the city has the State Highway connecting Hyderabad with Warangal and cutting across the former and hence connecting it to a broad swath of areas in its hinterland which act as the origin areas of several migrants, subsequently settled in the slums on the periphery in the close proximity to the city work areas as well as their home-towns/native villages.



Source: GHMC

Fig. 1



Source: GHMC

Fig. 2

In the following, an attempt has been made to discuss slums by localities rather than individual slums. This same pattern has been followed in regard to showing the slums in the maps. Before moving further, we shall also like to share with the readers that information is not available with concerned government offices regarding the notified as well as non-notified slums under the jurisdiction of some of the municipal units. Hence, we have excluded such slums from the discussions in the proceeding paragraphs.

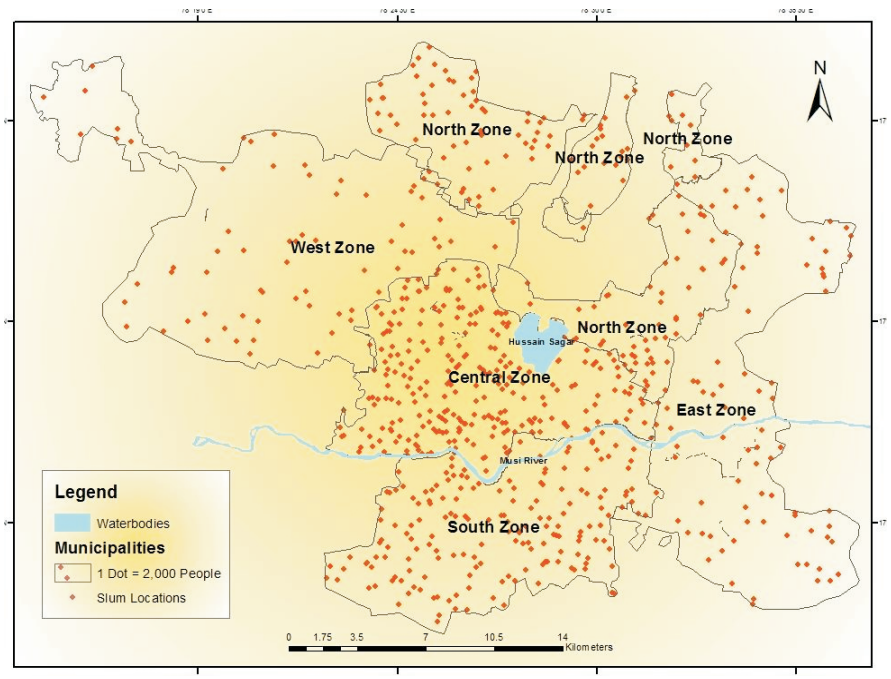


Fig. 3: Hyderabad City: Distribution of Slums by Zones, 2019

Starting with the notified slums, the Charminar locality, in the Central zone, stands out as the area of the highest concentration of population among the notified slums (Fig. 4). This is followed by Saroornagar, Gaddiannaram, Secunderabad, Qutbullapur, Kukatpally and Khairatabad localities in the same zone. Then, Gachibowli, Gajula Ramaram, Yusufguda, Alwal, Patancheru and Uppal localities fall in order. Except Yusufguda, all of them fall in the peripheral zone.

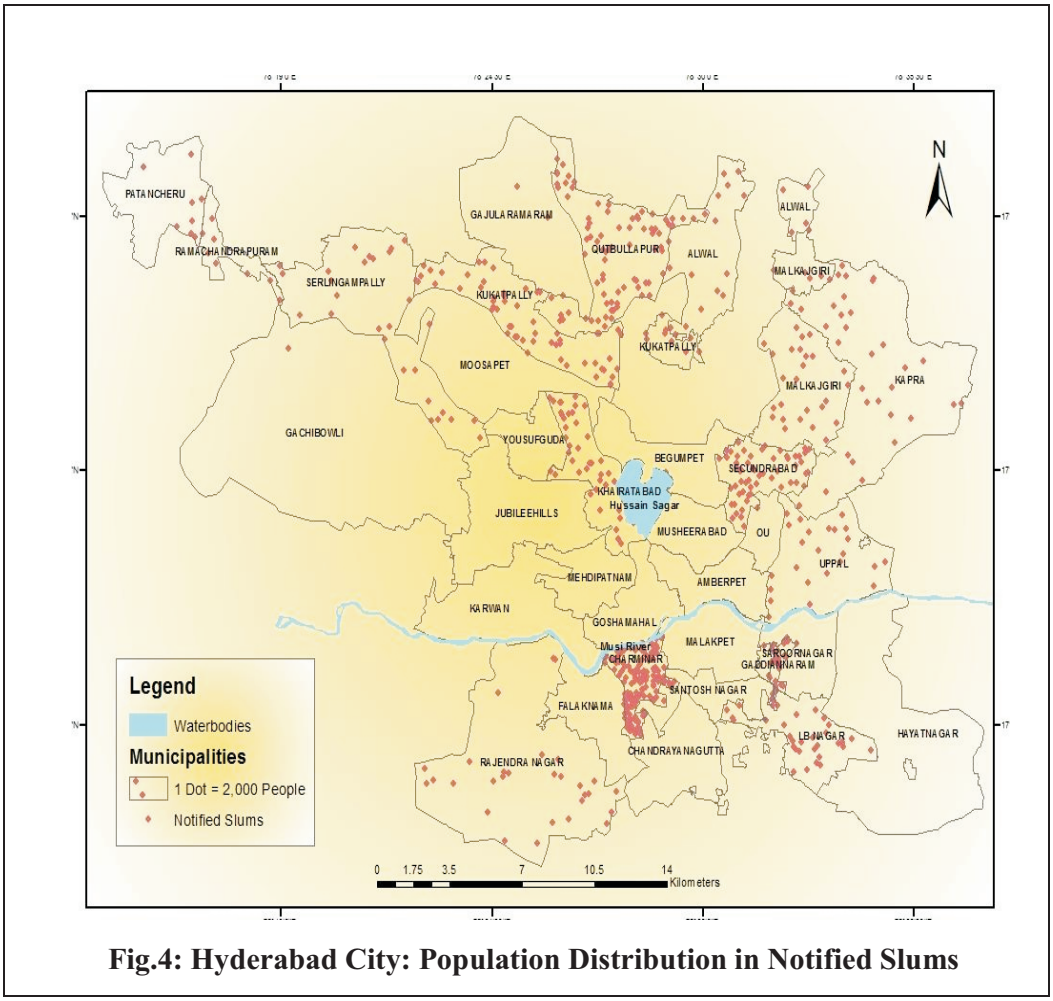


Fig.4: Hyderabad City: Population Distribution in Notified Slums

In the category of non-notified slums, the Charminar, Serilingampally and Kukatpally localities have the highest concentration of slum population (Fig. 5). This is followed by Khairatabad, L.B. Nagar and Rajendra Nagar in that order. Municipal units like Secunderabad, Uppal, Malkajgiri and Alwal are next so far as the population of non-notified slums. It is to be noted that some of the municipal units/localities such as the Charminar and Uppal fall in the highest slum population concentration category both in case of notified and non-notified slums. In addition, the eastern periphery of the city also exhibits a predisposition towards attracting slums population.

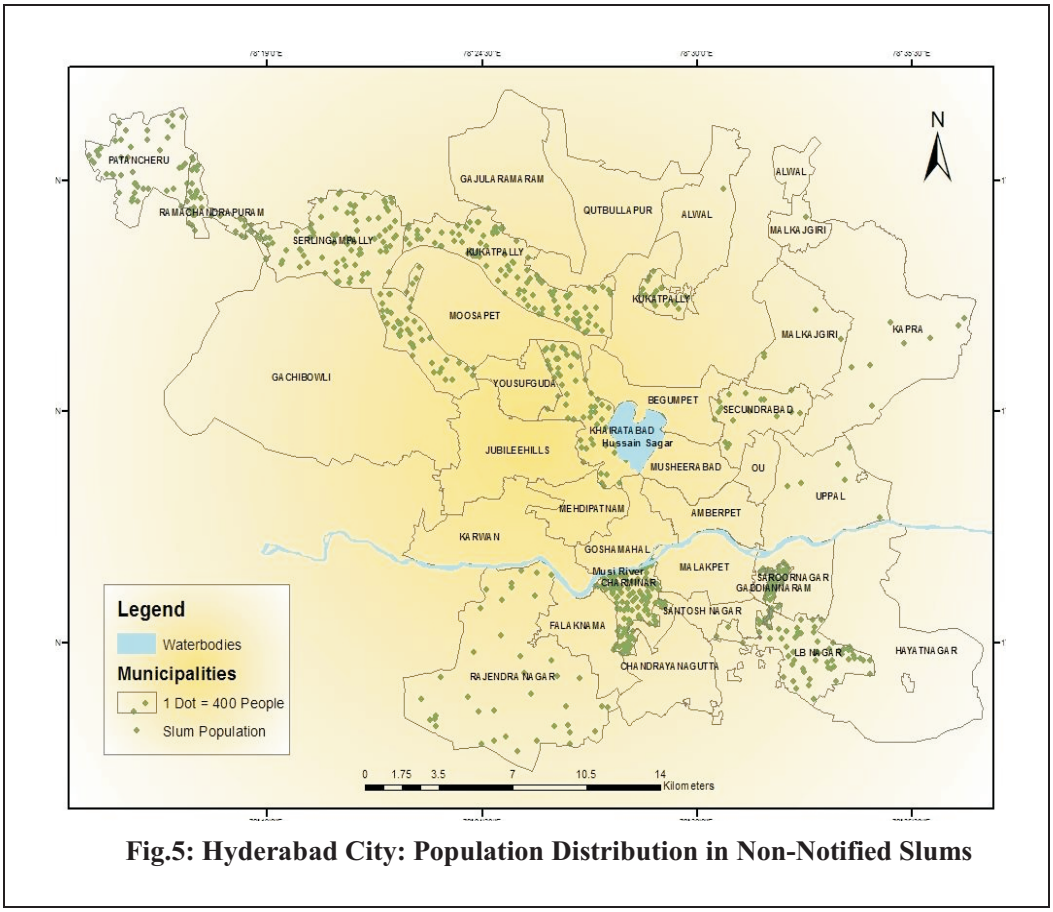


Fig.5: Hyderabad City: Population Distribution in Non-Notified Slums

By and large, the family size of slum dwellers is big in the southern part of the city along with the Jubilee Hills and Mehdipatnam areas (see Fig. 6). Against this, the family size is relatively small in the areas on the eastern and western periphery of the city. The migrants in these areas have come mostly in recent years, hence not as well established to attract their kith and kin from the rural areas, as is the case in the large parts of the old city and core city area. Migration in some of these cases is generally dominated by the male members of the working age-group.

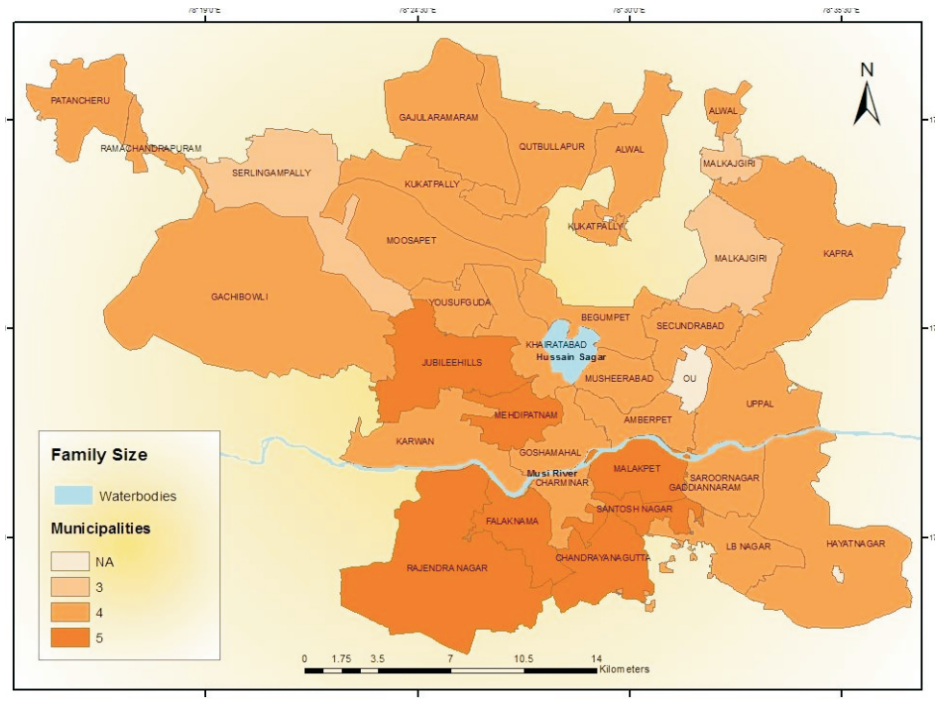


Fig.6: Hyderabad City: Family Size of Slum Dwellers by Municipalities, 2020

Source: Greater Hyderabad Municipal Corporation, 2019 (for all the maps)

Concluding remarks

The study reveals that Hyderabad had a lesser number of slums to start with and like all other cities of its kind. The slums have increased owing to incessant migration into the city. It has been in the post-reforms era that Hyderabad has witnessed a burgeoning number of slums. The southern part of Hyderabad has the largest cluster of slums as also the slum population. It is also characterized by a very small areal extent of slums and their close juxtaposition to each other. Apart from this, the relatively outlying areas like Serilingampally and Kukatpally are found to have a large population in non-notified slums pointing towards the explosive growth of slum population in the near future.

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