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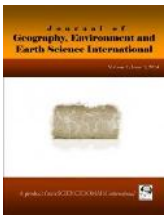

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Understanding Geographies of Water Accessibility in Hyderabad

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Authors' contributions

This work was carried out in collaboration between all authors. All authors read and approved the final manuscript.

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ABSTRACT

Aims: Through the lens of dynamic change in the city's waterscape, this paper examines Hyderabad's global aspiration and the ways it impacts water provisions and accessibility issues for the poor locals.
Study Design: This paper is based on descriptive research design accompanied by surveys and qualitative interviews.
Place and Duration of Study: Hyderabad (India). While the surveys and majority of qualitative interviews were done during December 2013, a few more follow-up fieldwork related observations and discussions were conducted during September 2015.
Methodology: This paper is based on qualitative human geography methods – largely consisting of fieldwork observations, application of visual methods, surveys and personal interviews in Hyderabad.

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Results: Hyderabad in India provides an interesting account of this trend of neoliberal developments where poor local farmers are pushed out from their land to make way for a world-class knowledge corridor, popularly known as Cyberabad. The processes of worlding have also impacted the larger environment and sustainability issues of the city – from encroaching lakes for real-estate developments to privatizing the water provisions leading to exacerbating accessibility challenges.
Conclusions: This paper concludes that while the state government was able to map Hyderabad into the global map as a high-tech and smart destination, access to basic water supply is increasingly getting skewed towards benefiting the elites and alienating the poor. There is an urgent need for policy makers to address the challenges of water provision and (in) accessibility.

Keywords: Hyderabad; cyberabad; waterscape; high-tech; smart; water accessibility.

1. INTRODUCTION

Under globalization, cities today have become increasingly integrated into the global economy. Cities have been portrayed as economic engines and magnets to attract jobs and investments. City authorities today are more entrepreneurial and investing heavily in modern infrastructures to make their cities global or globally connected [1]. According to Robinson [2], a global/world city 'should be able to articulate regional, national, and international economies and serve as prominent nodes of a global economic system' (p. 534). This definition is further enhanced by Saskia Sassen [3] who refers to the global city as a monopoly of control and command networks and institutions. Making cities global or world class can be viewed as an aspiration of the elites in the society by pushing a neoliberal[1] agenda to accumulate more wealth [4]. Visioning documents are being planned and deployed to reconfigure their cities as global or world class [1,2]. Cities in Asia are increasingly becoming the engines for their respective nations. As such, cities under the influence of neoliberal processes are increasingly being recognized as having entrepreneurial aspirations [5]. With emerging urban entrepreneurialism, governments of emerging global cities often seize the opportunities by implementing neoliberal visioning policies [6,7].

While rapid urbanization in Asia has achieved a hyper status [8], provision of basic amenities and services have not kept pace with this hyper-urbanization mode. This has resulted in increasing spatial segregation of the urban society beyond the already existing social stratifications [9]. In recent time, researchers have been scrutinizing the privatization of water, service provision and the role of the private sector in India [10,11]. In fact, neoliberal practices had become one of the prerequisites for foreign financial assistance in relation to water infrastructure development. Graham and Marvin [12] pointed out the case of the IMF's Structural Adjustment Programme (SAP), where neoliberalism had forcefully resulted in the collapse of public infrastructural institutions in support of privatization. In India, the IMF has conditionally required the privatization and/or commercialization of the water sector, in order to secure financial assistance under IMF's structural adjustment programme. With privatization, there is a gradual withdrawal of government control and subsidies over state-owned enterprises and services [13].

With the increasing tendency of privatization of basic services such as water and power and emerging gaps between haves and have-nots, access to basic service is becoming difficult for poor urbanites. Reforms related to the water sector are often skewed to serve the interest of the private sectors and the elites of the society. As noted by Bakker [14] the privatization of water supply often entails the practice of commercialization where underprivileged localities would be subjected to differential treatment. (Urban) surpluses produced through both formal and informal economic activities largely rests with the elites of the society. They manage to enjoy far better privileges and access to amenities than urban poor [see 15]. Therefore, Neil Smith [16] rightly said that the city is becoming revanchist – with little tolerance for the poor. The city has increasingly become a splintered landscape where elites have been able to access and demand premium amenities from a neoliberal state while poor residents are being excluded from the provision of basic amenities such as water [see 12]. Emerging spatial developments of the city have been

[1] *Neoliberalism is a doctrine that argues for a society organized around self-regulating free markets with no state intervention [see 17, p498].*

impacting the waterscape and its supply and accessibility by the urban and peri-urban communities. Deregulation and tendency to create unequal developments of network technologies, therefore, deliberately exacerbate the existing inequalities between the valued and less-valued within the city.

While Hyderabad city in India aspires to be a globally connected high-tech and smart city, it is also one of the unequal cities in the world [see 18]. With increasingly uneven water infrastructure provision in Hyderabad, uninterrupted water is being supplied to elite residential localities and to IT companies situated in various technology parks and conveniently denying water to non-valued localities within the city [13]. While the regular and reliable source of drinking water is a fundamental human right, the poor are often left with few options but to rely on informal water sectors such as water vendors and unimproved water sources [see 19]. The differential access to water resources and water supply networks also draws attention to the limitations faced by governments, particularly in countries with rapid urban expansion. The inability to keep pace with the uncontrolled urban growth is exemplified in Buenos Aires where the spatial form of urban development has directly affected the level of water and sewage connections [20]. As Bakker [14] observed, the expansion of urban zones through urban sprawl implies an extension of services that in turn demands an extension of the existing infrastructure network. As a result, pricing reforms are often deemed as a solution to increase the financial and investment capacity of the utility, without taking into account the consequence borne by the various stakeholders [21]. Therefore, the modern ideal of infrastructures in developing countries can hardly be realized especially because of the insufficient funding for water supply systems [22].

Situating on the larger debate on neoliberal and city-centric developments in Hyderabad, this paper will map out the water landscape of the city and critically evaluate the complexities of water accessibility and everyday insecurity. In what follows, the next section will provide a brief introduction of Hyderabad and the recent state strategy to make it a world-class high-tech/smart city and emerging issues of social polarisation, followed by a section on the methodology deployed during field research. This will be followed by an analysis of interviews and discussions conducted in Hyderabad in relation to accessibility issues of water and to map out the roles played by public (state) and private agencies in relation to water services.

2. HYDERABAD: THE SMART AND HIGH-TECH CITY OF SOUTH INDIA

Hyderabad is the state capital of Telangana - a newly formed state of India (see Fig. 1). With a population a little more than 9 million, Hyderabad is the fourth most populous metropolitan city of India. During the 1960s and 70s, a large number of state-owned public sector industries and research institutions were set up in Hyderabad which led to an influx of people into the city leading to pressure on existing civic infrastructure and formation of slums [7,23]. Since the middle 1990s, Hyderabad witnessed the second wave of migrants coming into the city in search of better job opportunities. This time, it was due to Hyderabad's increasing projection as a high-tech hub for software and related service industries [24]. Chandrababu Naidu, the then chief minister (of erstwhile state of Andhra Pradesh where Hyderabad was the state capital) in 1994, learnt that through city-centric infrastructure development and global city projection, Hyderabad would be able to attract both foreign and domestic investments and jobs. He visited Southeast Asia and the USA to learn more about the making of high-tech knowledge enclaves such as Singapore's Science Parks, Malaysia's Cyberjaya and the Silicon Valley of the USA [7,25]. Hyderabad is situated along the river *Musi*. Beyond the river, the city's waterscape includes several major lakes and nearly thousands of smaller lakes. These lakes generally help in storing rainwater during the monsoon season and replenishing the ground water level of the city. However, unabated encroachment for real-estate development has led to filling up of lakes changing the city's waterscape and poor's access to water.

3. METHODOLOGY

This research is primarily based on fourteen days of fieldwork conducted in Hyderabad during December 2013. A series of qualitative methods were deployed in order to obtain the fundamental data and information required to achieve our research objectives. In this section, various methods deployed throughout this research will be evaluated and explained. While the fieldwork was beneficial in collecting primary information, a pre-fieldwork phase was conducted to obtain secondary information related to state visioning

policies and grounded realities of water provisions. Secondary information was inclusive of official documents from state government websites, working papers, statistical and civil society documents. These collections helped us in getting a deeper understanding of the actually existing water (accessibility) issues faced by the locals and the role played by various stakeholders.

Fig. 1. Hyderabad is the capital city of Telangana state

Primarily three qualitative methods were used in this fieldwork research – observation, questionnaire survey and personal interview. The observation method has been very popular with human geographers, increasingly using it to understand on ground issues and actually existing geographies. In order to know more about the changing urban dynamics of Hyderabad, the observation method became very useful. The first few days of the fieldwork was primarily devoted towards observing different sites within the city and its peripheries. Specific site-related visits were made to the peri-urban region of Hyderabad to understand sourcing of water from lakes and from groundwater through private water tankers and its delivery at various locations within the city. Further, we also went to the Hyderabad Municipal Water Supply and Sewerage Board (HMWSSB) zonal office located at Cyberabad[2] to understand the larger water supply process through state agencies. The observation method which largely involved observing and documenting everyday geographies of several sites and its residents was further complemented by photography as part of visual techniques which helped in documenting Hyderabad's everyday water procurement and distribution and roles played by both private and public agencies. Observations and visual methods were commonly used throughout the entire fieldwork. This helped in documenting various infrastructures and facilities that portray the state's global aspirations at the majority of the areas within Hyderabad. For example, upon arrival in Hyderabad, the well-developed infrastructures such as the international airport, high-end hotels, knowledge parks and gated residential areas portrayed a resemblance to that of a developed world. However, when we traveled to different parts and pockets of Hyderabad, the sharp contrast in urban landscape where slums and modern infrastructures were both present within close proximity became evident. While witnessing the impressive ambitions of the state through the modern developments within Cyberabad, one cannot help but observe the lack of basic facilities and amenities in this emerging global city of India. Further, the observation method helped us get an initial footing on the fieldwork and provided networking opportunities with local officials of HMWSSB and private tanker operators. This networking later assisted in getting access and consent to surveys and personal interviews.

In the next phase of fieldwork, survey questionnaires were prepared to get a deeper understanding of water accessibility issues of Hyderabad. The survey questions largely revolved around issues of water availability, duration of water supply to households in different locations, source of water and mode of supply, pricing mechanisms for supplied water and satisfaction level of people in relation to water distribution in their neighbourhoods. Despite the obvious benefit of survey questionnaires in relation to getting on-ground primary data, this survey had its own limitations – largely simple and few questions were asked due to issues of language compatibility and time taken to complete each survey questionnaire. Overall, a total of 51 residents were surveyed to understand their everyday water issues. Surveyed residents were selected by simple random process from several neighbourhoods of

[2] *Cyberabad is the 52 square kilometer smart and high-tech enclave of Hyderabad which largely consists of major software companies and elite residential estates.*

the city. In order to overcome the limitations of survey questionnaires, personal interviews were conducted in the field-sites. These interviews were focused to get more information related to everyday water accessibility issues faced by the residents in Hyderabad and to understand their negotiation and reworking strategies. Semi-structured but in-depth interviews were followed to obtain broad range answers from the interviews conducted. The next section delves into a larger analysis of information collected in the field and discussions carried out in Hyderabad in relation to water accessibility issues and roles played by public and private agencies in relation to water services.

4. WATER ACCESSIBILITY IN HYDERABAD

Despite having the state authorities branding Hyderabad as an emerging global city with rapid premium infrastructure development, provision of public utility services is comparable to that of many cities in the Global South. During the fieldwork, observation of ubiquitous private water tankers on the street of Hyderabad and images of women carrying water in traditional containers provided a reflection of everyday grounded realities of water issues in Hyderabad – beyond the state rhetoric of being a global city.

From the surveys that were conducted in the poorer pockets of Hyderabad, we found that the main source of water included the use of taps which were located either within their homes or shared among their neighbours. As seen from Fig. 3, 10 survey participants highlighted that they have used the water tanker from HMWSSB, while 7 indicated that boreholes were used as their primary source of water. Upon further probing, respondents mentioned that they used the water from boreholes explained that this water source is primarily tapped during the dry season when the water supply is more stressed.

It was found that to access water, the majority of the residents need to travel up to 30 minutes to the nearest source of water. However, when it came to frequency of water provision, less than half of the respondents said that they have access to water on a daily basis while the majority of the respondents receive water on an alternate day basis (see Fig. 4).

A more in-depth questioning of the amount of time in which water was supplied revealed that 72 percent of respondents receive water for less than 6 hours per day in their household. Therefore, even though the majority of the respondents mentioned that their primary water source comes from the piped water, and the frequency of water received is high, the duration of water being supplied is poor. With increasing complexities of access to water, residents resorted to storing water to ensure that the supply is sufficient for the remaining period of time when water is not supplied to their household. The survey results provided a grounded reality that the objective of the state water board to provide safe and adequate drinking water to the residents within Hyderabad metropolitan has not been achieved. While water sources may seem accessible from a distance, in reality, the duration of water being supplied to each household is inadequate. While infrequent water supply in poor neighbourhoods of a globally connected high-tech city seems unacceptable, the residents, however, accepted this everyday inadequacy. One resident said– '*we cannot expect non-stop supply of water because priority goes to the elites*' (interview excerpts, December 2013).

Fig. 2. Lack of piped water infrastructure forces residents to fetch water through other means in Hyderabad
(Source: Loon Jia Hui Bernice)

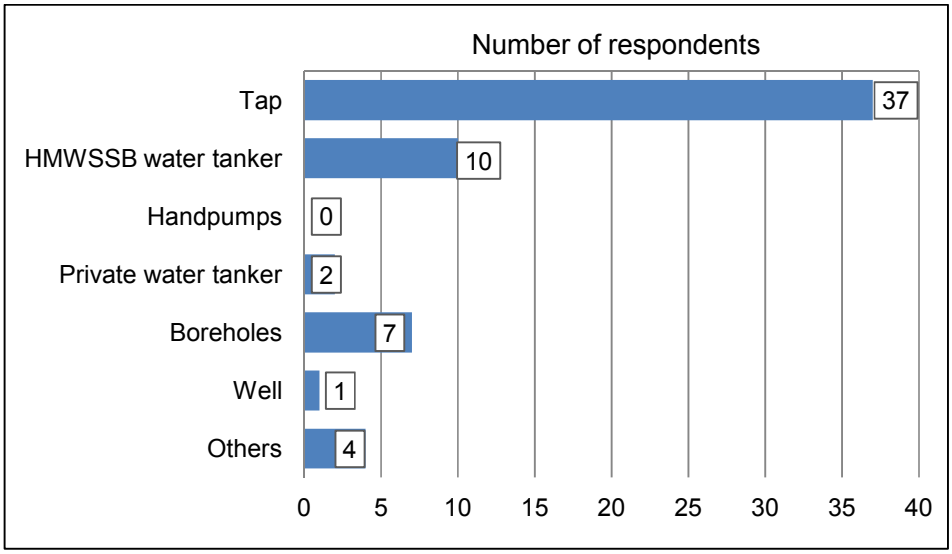

Fig. 3. Source of water access

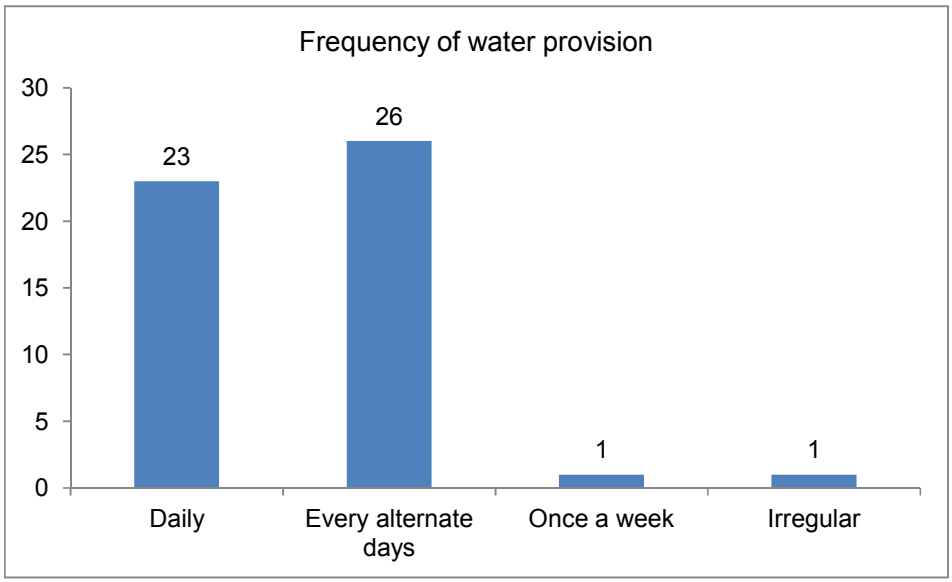

Fig. 4. Frequency of water provision

Given this inadequacy of the state water agency, private water tankers have emerged in the city's water supply landscape. Private suppliers' acquire water from various lakes and also use deep-well pumps especially in the peri-urban region. Then they supply the water through tanks to various destinations within the city.

Scholars such as Ramachandraiah and Prasad [26] have attributed the greater problem of water security in Hyderabad to the ineffectiveness of the state government. The state government has been through prioritizing city-centric development to achieve economic benefits over providing basic amenities to the residents.Development of Cyberabad – a 52 square kilometer high-tech enclave with gated residential facilities portrays the efforts of the state government to prioritize the global image of Hyderabad as a high-tech destination. However, the city also depicts an increasing level of inequality – where valued digeratis are being provided with premium amenities with continuous supply of drinking water and non-valued locals living in poor

Fig. 5. Everyday water collection and storage in many neighbourhoods in Hyderabad
(Source: Loon Jia Hui Bernice)

neighbourhoods are not provided with uninterrupted access to water. Noteworthy that in a few registered slum neighbourhoods, the state water agency does provide water free of cost and supply it through water tanker every alternate day. However, access to water is not enough as the quantity of water per household is low and, therefore, water insecurity in these neighbourhoods remains to be addressed fully.

In terms of dealing with the issue of water accessibility within Hyderabad, there were indeed a number of voluntary groups and NGOs involved in helping the affected communities within the society. As part of the fieldwork, the research team visited the South Asia Consortium for Interdisciplinary Water Resources Studies (SaciWATERS), an organization formed to address problems in the water sector through the use of education, research and advocacy. Through the interaction with SaciWATERs, one important point that was brought up is that the city is under tremendous influence of corporate bodies and real estate lobbyists. Thus, it is crucial for NGOs and environmental activists to work on the ground to ensure that there is both 'top-down' and 'bottom-up' forms of communication between the community and the authorities. When asked about what more could be done by the NGOs to alleviate the water problems in Hyderabad, the response was that as various departments are at work, there is little or no clear indication of who is in-charge. Thus, there is a need for greater transparency in information sharing among the water advocacy groups. Despite the obvious difference in scale, size and socio-economic issues of Hyderabad from Singapore, it is noteworthy that in Singapore, water supply is solely managed and distributed by the Public Utility Board (PUB), a national water agency overseeing all aspects of water resources. With a single institution responsible and liable for the distribution of water supply to every household in the country, there is greater accountability in ensuring the affordability and sustainability of water supply for all Singapore residents.

5. CONCLUSION

With increasing urban development in India, access to water is increasingly becoming out of reach for urban poor communities. Access to basic water supply and water-related infrastructure is getting skewed to benefit the elites of the society – at the cost of the poor. Hyderabad's water landscape has been shaped by recent high-tech developments and the state's aspiration to make it global – as infrastructures related to water and power supply has been readily provided largely to benefit the elite neighbourhoods. With increasing depletion of ground water level and encroachment on natural water bodies by real-estate mafias, the state water agency is struggling to provide regular water supply to the entire city – leading to the provision of limited water supply to poor neighbourhoods. Therefore, poor residents are spending more money in order to purchase water from private suppliers leading to an exacerbation of existing inequalities between the rich and the poor in the city. The role of various stakeholders is crucial, from government authorities, civil society groups, to the roles played by the local

residents in mitigating water issues of Hyderabad, which in turn will help in empirically substantiate theoretical arguments of waterscape [27]. The government should look at ensuring affordable and sustainable provision of water supply to the poor neighbourhoods. Additionally, the efforts of private companies, voluntary organisations and NGOs should not be overlooked as they often play a significant role as the bridge between the community and the government. In the case of addressing water accessibility challenges faced in Hyderabad, NGOs and other civil society institutions can play a significant role in reaching out to the marginalised communities and help in alleviating the water problems.

DISCLAIMER

SEAGA (Southeast Asian Geographers Association) International Conference 2014, Siem Reap, Cambodia (at Royal University of Phnom Penh), 25 - 28 November 2014.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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