WATER SCARCITY AND THE PRODUCTION OF URBAN SPACE IN SHIMLA

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A thesis submitted for the partial fulfilment of the degree of Doctor of Philosophy

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November 2022

Declaration

The work presented in the thesis has been carried out by me under the guidance of Dr. Anu Sabhlok at the Indian Institute of Science Education and Research Mohali. This work has not been submitted in part or in full for a degree, a diploma, or a fellowship to any other university or institute. Whenever the contribution of others are involved, every effort is made to indicate this clearly, with due acknowledgement of collaborative research and discussions. This thesis is a bona fide record of original work done by me and all sources listed within have been detailed in the bibliography.

Ankur Parashar

In my capacity as the supervisor of the candidate's thesis work, I certify that the above statements by the candidate are true to the best of my knowledge.

Dr. Anu Sabhlok

(Supervisor)

Acknowledgments

As I am finishing the research, it is evident that the research is a collaborative effort. First and foremost in this collaboration are my parents, who had faith in my life choices and supported me in making the leap of going into a Ph.D. program. This journey would not be possible without the support of my brother, who stood by me financially and emotionally in that order.

As I am seeing the light at the end of the tunnel of this journey (Hopefully not the one of an approaching train), I can't thank enough my guide Dr. Anu Sabhlok for her continued support and encouragement whenever I felt down and out. I would also like to thank my thesis committee members, Dr. Ritajyoti Bandopadhyay, Dr. V. Rajesh & Dr. Parth Chauhan, for their support and critical feedback, which immensely helped my research. For the past five years, the Humanities and Social Science department have been a home for me. I am thankful to the faculty members Dr. Meera Nanda, Dr. Adrene Freeda D'Cruz, Dr. S. K. Arun Murthi & Dr. Debdulal Saha for creating a positive and helpful environment here.

This journey would not have been possible without my comrades in catharsis: Ranjana, Kuldeep, Jafar, Hamid, Vivek, Shreyashi, Nawaz, Gaurav, Navpreet, Kanchan,Yogesh, Dahlia, Preetika, Nupur, Shilpa, Manleen, Aditya, Manisha, Basil, Shashi, Akash, Jayshree, Yezad, Ansad, Vaibhav, Rajesh, Subhashri, Navdeep, Jonayed, Anubhav, Nidhin, Jaylakshmi, Amitoj, Dong, Bikash & Dhruv.

Aspects of this research were possible through the support of many scholars that I have met through various conferences and workshops. I would especially like to thank the CPR writing workshop through which I received valuable feedback from Anant Maringanti and Marie-Hélène Zérah.

In the end, I would like to express my gratitude to the people of Shimla, whose support has made this journey possible.

Ankur

Water Scarcity and the Production of Urban Space in Shimla

Abstract

This thesis focuses on the multiple lives of water in Shimla and shows how water and urban space co-produce each other. It maps the spatial and sociopolitical relationships that are central to the production and maintenance of the discourse around scarcity. The thesis argues that institutional restructuring at the local level is intended to create ’world-class city' narratives such as 24*7 water supply instead of dealing with water availability issues, thereby keeping the true essence of decentralization in abeyance.

A key contribution of this research is the analytical framework for understanding the politics surrounding water scarcity. I bring together literature from urban political ecology, citizenship and infrastructure studies to understand the trickles and surges of water flow in the mountain town of Shimla. How is water scarcity linked with the production of urban space, citizenship, and infrastructure? The study shows that the crisis is not just an event with a definite period. Instead, it has roots in the past and in the imagination of future. The issue of water availability needs to be seen beyond technological solutionism and involve a broader discursive understanding of water availability by bringing people back into the analysis. The research included approximately six months of field work and extensive archival research in Shimla to understand the city's past, present and future trajectories. Drawing upon my ethnographic observations during the 2018 water crisis and a textual analysis of interviews and newspaper archives, I have mapped institutional and discursive changes around water scarcity in Shimla. Each chapter takes as its entry point a different aspect of water scarcity in the city, from the production of the urban space to claims on the city and the politics over the control of the urban space.

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Introduction

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I was surprised to read that Shimla has topped the list in the Ease of Living Index[1] for the year 2020 in the category of cities with less than 1 million population.[2] The last time this index was prepared in 2018, Shimla was ranked 92.[nd,] How did this massive jump of 91 places happen in a span of 2 years? Two changes that were made to the methodology of the 2020 index are worth noting. One was the separation of cities with million+ and below million populations, and the other was a 30% weightage to citizens' perception survey. What appeared puzzling to me was the difference between the people's perceptions portrayed by the index and the interaction I had with the people in the city. During my fieldwork, hotel owners complained about the unavailability of the water. I have also heard tales of dreaded water supply from residents complaining about getting the most expensive municipal water in the city. Still, the water supply remains unpredictable and inadequate. This difference can be due to the framing of questions in the survey and the mode of data collection, which was heavily skewed in favor of upper and middle-class households.[3] But

[1] The Ease of Living index is the ranking of the cities in India created by the Ministry of Housing and Urban Affairs. It measures the citizens quality of life through 13 indicators education, health, housing and shelter, WASH (water sanitation and hygiene) ,mobility, safety and security, recreation, economic development, economic opportunities, environment, green spaces, energy consumption & city resilience.

[2] Sharma, N. (2021, March 5). Bengaluru, Shimla ranked "most livable" cities in government's Ease of Living Index 2020. The Economic Times. Retrieved January 20, 2022, from https://economictimes.indiatimes.com/news/economy/indicators/bengaluru-shimla-ranked-most-livable-cities-in-govts-ease-of-living-index-2020/articleshow/81327639.cms?from=mdr

[3] Shimla Municipal Corporation conducted a total 184 face to face surveys which are given 0.7 weightage and my gov online surveys 76 surveys which are also online but with the weightage of same 0.7, the online surveys were 7525 with the weightage of 0.3. Although the weightage of online was low but the sheer volume of it has pushed the reports direction in the side of the online survey. The report itself acknowledges that the

the result of the survey can't be neglected completely. For someone living in the city during the water crisis trying to get a sense of the issue, the rating seems to tell a divergent picture. The same institutions which seem to have failed the people during the crisis are perceived as robust now by the residents. It could mean that the water crisis was such a watershed moment in the city's history that it has completely changed the region's urban landscape or that water scarcity has become so internalized in people's minds that it has become a new normal. My fieldwork has revealed that the relationship between water and urban space goes beyond this dipole. Urban space and its governance have been a negotiation between the assemblage of multiplicities. There are these multiplicities in the nature of the city in Shimla, from the queen of the hill narrative, which was passed down from the colonial government to the tourism department of the post-colonial state. There is also love for what is good in the city: its weather, quaint, peaceful nights for the residents, despite the problems like water, accessibility, traffic jams, and parking space.

In this thesis, I move in time while situating myself in Shimla to understand how multiple changes from colonialism to neoliberal capitalism have influenced water flow within the city of Shimla. This journey took me to the past, when Simla was constructed by the British, and to the future, when the city expects to have a 24*7 water supply. Water projects reflect the complex relationship between state, science, and nature (Gilmartin, 2013).[i] The everyday governance processes also enrich our understanding of the interactions of various materialities in the city with social relationships. There is still a lacuna in the interaction of

online surveys would be weighted heavily towards the upper and middle classes and to compensate for the bias the face to face surveys need to be done in the lower income areas and slums. Although it would be unjustified to single out Shimla as at the national level to the face to face surveys were about 95933 and the online surveys were 2534570 and the mygov numbers were 18346. So despite the acknowledgment of the bias of the surveys, the actual report was still biased towards the certain types of the participants.

everyday negotiations of water under the umbrella of scarcity with the water crisis events dotting the timescape of the city. There have been studies showing the cities experiencing water crisis (Butler et. al., 2016)[ii] and water challenges in the everyday negotiations for water(Truelove, 2021)[iii] , but there is limited work on how the everyday shortage and the crisis event interact with each other in terms of the politics and imaginaries they produce. This interaction is visible in the organization of the urban socio-nature impacting space and citizenship.

In this thesis, I will explore the production of urban space through the capitalistic metabolism of nature (see Gandy, 2004).[iv] Thereby, I am trying to answer the question asked to me time and again in various conferences: Why is there water scarcity in a city on the Himalayas having ample rainfall and so many perennial rivers?

Situating the Research

With the continuously increasing rate of urbanization globally and particularly in the global south, cities are becoming central as the site of social and economic life and some may even argue that they are replacing the nation state as a key unit of looking at the dynamics of political processes (see Goetz & Clarke, 1993).[v] In India, we have seen a reorientation of government policies and institutions towards the urban scale. This is evident through the massive state funding in urban renewal schemes like JNNURM[4], AMRUT[5], and SCM[6]. Simultaneously, there has been a rise of nonstate actors in the past century, particularly the

[4] Jawaharlal Nehru National Urban Renewal mission was a national level urban renewal program with a total investment plan of about 1 lakh crore rupees. This program was started in 2005 and lasted till 2014.

[5] Atal Mission for Rejuvenation and urban transformation mission is in continuity with JNNURM. This a central government program started in 2015.

[6] Smart Cities Mission is the urban renewal program started by the GoI in 2015. Rs 48000 cr have been allocated for the development of 100 smart cities.

wealthy multinational corporations and the new networks of civil society groups. It has further complicated the nation-state's capabilities to govern the cities leading to a complex sharing of governance among the state, the market, and the civil society. This sharing is more visible in the cities, as they are the new sites of neoliberal restructuring and are also seen as the key player in the global system. They have become essential nodes of regulation and service provision. Cities have been seen as sites representing a global capitalist system within local space (Sassen, 2013).[vi] Thus, urban governance has become an important area that requires research. According to Roger Keil, "despite its historical marginalization in real politics and political science, urban politics in its limited sovereignty has become a salient site of the governance of globalization." (Keil, 1998, p.618)[vii]

Cities have been a site of research for various academic disciplines for the last century (see Dear&Scott, 1981; Walton, 1993; Low, 1999; Cochrane, 2007).[viiiixxxi] In the Indian context, interest in urban research has gained momentum over the last four decades (see Kundu, 2011).[xii] Urban governance research has also primarily focused on outcome-driven public service delivery aspects of governance (Kamath, 2013).[xiii] In this approach, policy is generally analyzed as given (Mahadevia, 2011)[xiv] or seen through the lens of a global political economy(Banerjee-guha, 2009).[xv] The last two decades have seen the emergence and empowerment of some old and new actors like consultants, civil society leaders, local politicians, and real estate developers, in addition to global consulting companies (Dupont, 2007).[xvi] These new actors have changed the dynamics of governance in cities. These interactions have been more visible in large metropolises such as Mumbai, where urban governance is centered on high-value land. But for small and medium cities, the assumption

has been the centrality of local elites in the governance process(Kamath & Deekshit, 2014).[xvii]

The focus of urban research in India has been the large metropolitan areas. Governance in these areas has been studied in great detail, but a large part of Indian urbanization is still less researched; for example, cities with a population of between 50000 and 5 lakh population where 35% of the Indian urban population lives have not received their due in academic research. Small and medium sized towns now drive urban growth in India.[7] Robinson(2006)[xviii] argues that the small towns provide an epistemic category that helps to understand urbanization at the local level. With their distinct political structures and social processes, these small towns should not be neglected as a transitory stage of urbanization (see Basile & Harris-White, 1999).[xix] There have been new studies (see Cornea et. al., 2016; Kundu & Chatterjee, 2021)[xx] [xxi] to understand the municipal governance in small towns, along with attempts to theorize small cities in India through the theoretical lens of subaltern urbanization (Mukhopadhyay et.al., 2020)[xxii] Subaltern urbanization helps us in understanding urban processes in places that have been urbanized in the shadow of the state, where the government institutions catch up to the city.

However, mountain cities in India are the places that have historically been urbanized by the colonial state. Despite their small sizes, the state recognizes them as cities since many urban institutions were already present there. Presently, urbanization processes in these towns are dynamic negotiations between colonial institutional legacies and post-independent India's urban governance. Apart from the institutional framework, the geography of the mountain towns also plays a role in the governance of these mountain cities.

The nature of space in these Himalayan cities can be termed as what James Scott calls the 'friction of terrain' (Scott, 2009)[xxiii] It means that the experience of living in space is very different from what can be visualized through two-dimensional maps. This can be

[7] Sharma, N. C. (2020, January 11). Why smaller cities in India witnessing faster growth? | Mint. Mint. Retrieved January 20, 2022, from https://www.livemint.com/news/india/why-smaller-cities-in-india-witnessing-faster-growth-11578723353836.html

experienced while walking around the city using Google Maps as a navigation tool, as it is challenging to visualize the contours on the maps. The maps' distance does not match the work the body has to endure to maneuver through the spaces. My attempt to walk to the Ashwini Khad water treatment plant on foot had to be abandoned mid-way because I realized that the distance between the bus stop and the destination was too much when you walked the paved route. It is also essential to understand how this visual understanding of the city as seen on the maps, as most of the visual representation of the city in the policy framework doesn't prominently display the contours of the city. Thus, maps present a disjointed understanding that impacts allocation of resources like the distribution of public toilets, public taps, etc. The allocation of resources/services process only considers population density and assumes the terrain is largely flat.

Due to the precarious nature of the built form and the inadequacy of water supply, the boundary between public and private space becomes hazy, with activities such as washing clothes and utensils moving into public space (Sharma, 1986, p.65).[xxiv] The geography of the region also allows for intimacy with the close proximity of the houses (Sharma ,1986, p. 16) due to the shortage of 'good land.' Every day life in the region is a negotiation between terrain and body, turning the body into infrastructure that 'functions as accumulation strategies and allows socioecological fixes' (Andueza et. al., 2021, p. 812)[xxv] The presence of porters in the old bus stand and the Lower Bazaar and their critical role in the delivery of goods in the last mile shows the importance of the body. This is due to the terrain of the region. This terrain hides and reveals the gray areas in policymaking where some parts receive unequal emphasis while others remain in shade. Terrain brings in itself changes the dynamics of the material sources.

One way to understand the dynamics of urban governance is by analyzing the services provided by the state. Studies (see Bakker, 2003; Graham &Marvin, 2002)[xxvi] [xxvii] have shown the interrelationship between social power and water through infrastructure projects. Access to services such as water plays a crucial role in determining the relationship between the state and people, along with the social standing and the security and legitimacy of the state. The denial of services, on the other hand, may further create exclusion (Graham et.al., 2015).[xxviii] Thus, the anatomy of water infrastructure in hill towns gives us an insight into processes of mountain urbanization that rely on contoured terrains.

About Shimla

'The hills are the curse of modern India. They are the most fertile cause of the increasing alienation between the rulers and ruled, which menaces the safety of the Empire.'[8]

"The Simla municipal agitation, like all other sweet hill-flowers, is budding out into renewed existence under the genial rays of the Viceregal sun."[9]

Himalayan cities have held a precarious position in urbanization studies due to their unique geography. On one side, the population criterion makes them small to medium towns; on the other hand, their political and economic positions do not reflect this size differential. On the plains, these small towns are studied through the framework of subaltern urbanization (Denis et. al., 2017)[xxix], cities that are not on the maps (for decision makers), but are growing ever faster and play an important economic role. On the other hand, cities in the Himalayas are small, but have been on the map for a very long time. Shimla, which stands at an elevation of 2130 meters in the Middle Himalayas (31°06'15.91"

[8] The Madras Mail, April 14, 1884

[9] Pioneer, 20 April 1882

N 77°09'59.83" E), being one such city, brings a case of this uniqueness and challenge to study mountain urbanization.

For this research, I would look at the dynamics of urban water in Shimla, the capital city of Himachal Pradesh. There are many reasons to choose this site for the study. Firstly, being from Himachal Pradesh, I would be able to bring out my own lived experience of encountering governance machinery, which would enrich this ethnographic study. Second, Shimla, being the capital and largest city in Himachal Pradesh, has been a site for implementing all the major urban renewal programs implemented by the central government. Shimla, the largest city in the state, absorbs the surplus generated from the predominantly rural Himachal Pradesh, making it a site for speculative urbanization. Both state and nonstate actors participate in transforming the urban space in the city.

Figure 1 Location of Shimla Courtesy: Wikipedia[10]

Shimla is a city struggling with permanence; the city began as the place for the invalids to recuperate until it became the summer capital of British India and the capital of Punjab and later Himachal Pradesh in post-independent India. After the Anglo Gurkha war (1815), the British controlled the territories between the Sutlej and Gogra Rivers. Instead of maintaining the region, the British returned the area to the erstwhile rulers of the region on the condition that they would construct 12' wide roads in the territories and provide soldiers and unpaid labor to the British. Simultaneously, the British kept some parts of the region of strategic significance. Shimla was one of such areas. The colonial settlement began in 1819 with only one house, which was later expanded to 30 houses in the 1830s. Later, the villages from the surrounding kingdoms were taken as the town expanded because Shimla's

[10] https://en.wikipedia.org/wiki/File:Shimla_in_Himachal_Pradesh_(India).svg#filelinks

importance to the British grew rapidly. According to the Simla District Gazetteer of 1889, the city quickly grew from 30 houses in 1830 to 100 in 1841 and 1141 in 1881.

Governance in Shimla began with the military officials of the Subathu military station holding dual charge as the town's civilian and military administrator. This arrangement ran the city from its inception to 1841. In 1830, a nascent municipal government emerged in town, which brought all private water reservoirs and roads under government control. In 1832, a committee was formed to look at the challenges faced by the town; roads and water supply were emphasized in it. Hence, water governance began with it by making all the springs public (Kanwar,1982). [xxx]

After 1841, the city came under civilian administration. Still, the management of the city was very ad hoc in nature because of the transitory nature of the governance. Municipal governance came into existence in 1851 as the town kept on growing. Its importance further increased as Shimla became the summer capital of British India in 1864, and in 1871 it became the summer capital of the Punjab province; after this, the permanence started to set in the city. The new construction required labor, and the increased population attracted the traders; thereby, the city's demographic and social changes began. With the increasing population, the challenges of space and density started to appear. In 1875, after a bout of cholera, the government established an improvement committee with a grant of Rs. 12 lakh. It looked at problems such as water supply, waste management, and the spatial arrangement of the city. The more comprehensive intervention came in the form of the Simla Extension Committee of 1898, which explored the civic amenity issues such as water, sanitation, electricity, and roads and the taxation and finances of the city. The report by this committee set a precedence which was carried forward with the Simla Improvement

Reports of 1907 and 1914, furthering the planning for the city's future. Shimla became the capital of post-partition Punjab after independence and remained the capital until the construction of Chandigarh. Since then, Shimla has been the capital of Himachal Pradesh and a popular hill station in the country (Kumar & Pushplata, 2015).[xxxi] Then, the intervention in the city in terms of planning came with the draft development plan. After that, the ad hoc nature of the planning continued with the central government schemes as one official stated that there is no comprehensive plan for the development of the city; funds are used for small projects like road repair, pedestrian pathways, etc. without any focus on the macro-level planning for the city.

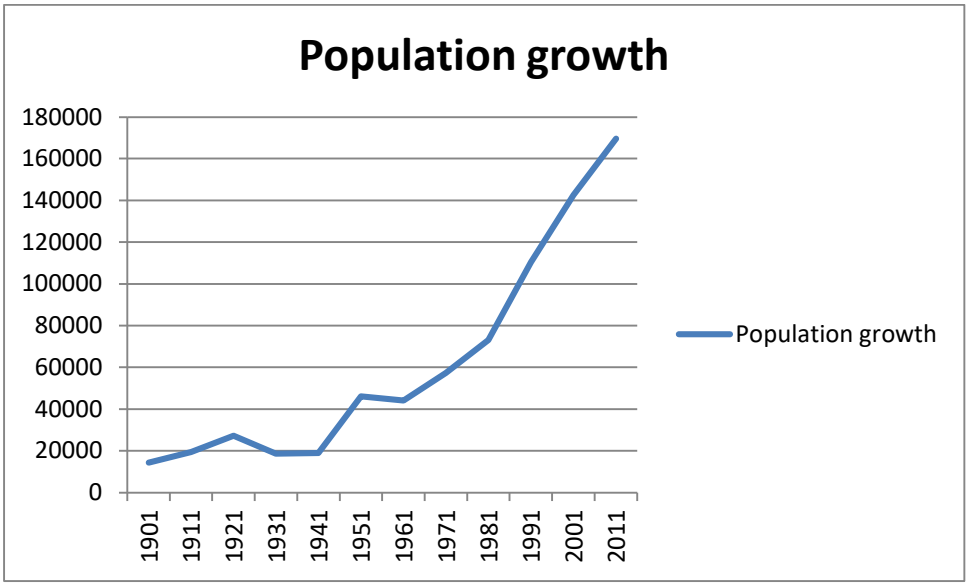


Figure 2 Decadal population growth of the city (source: Census of India)

Now, Shimla is the capital and largest city in the state, with a population of about 1.7 lakh according to the 2011 census. Being a tourist destination, it has a floating population of

about seventy-five thousand people[11] , which is about 45% of the total population of the city. There is massive pressure on urban utilities and infrastructure during peak tourist seasons. Due to the increase in tourism and the general growing trajectory of urbanization, the size of the city is continuously increasing. The total area under the Shimla Municipal Corporation has increased from 19.55 sq km to 35.54 sq km from 2001 to 2011. The following map shows the urban growth of the city during this time period.

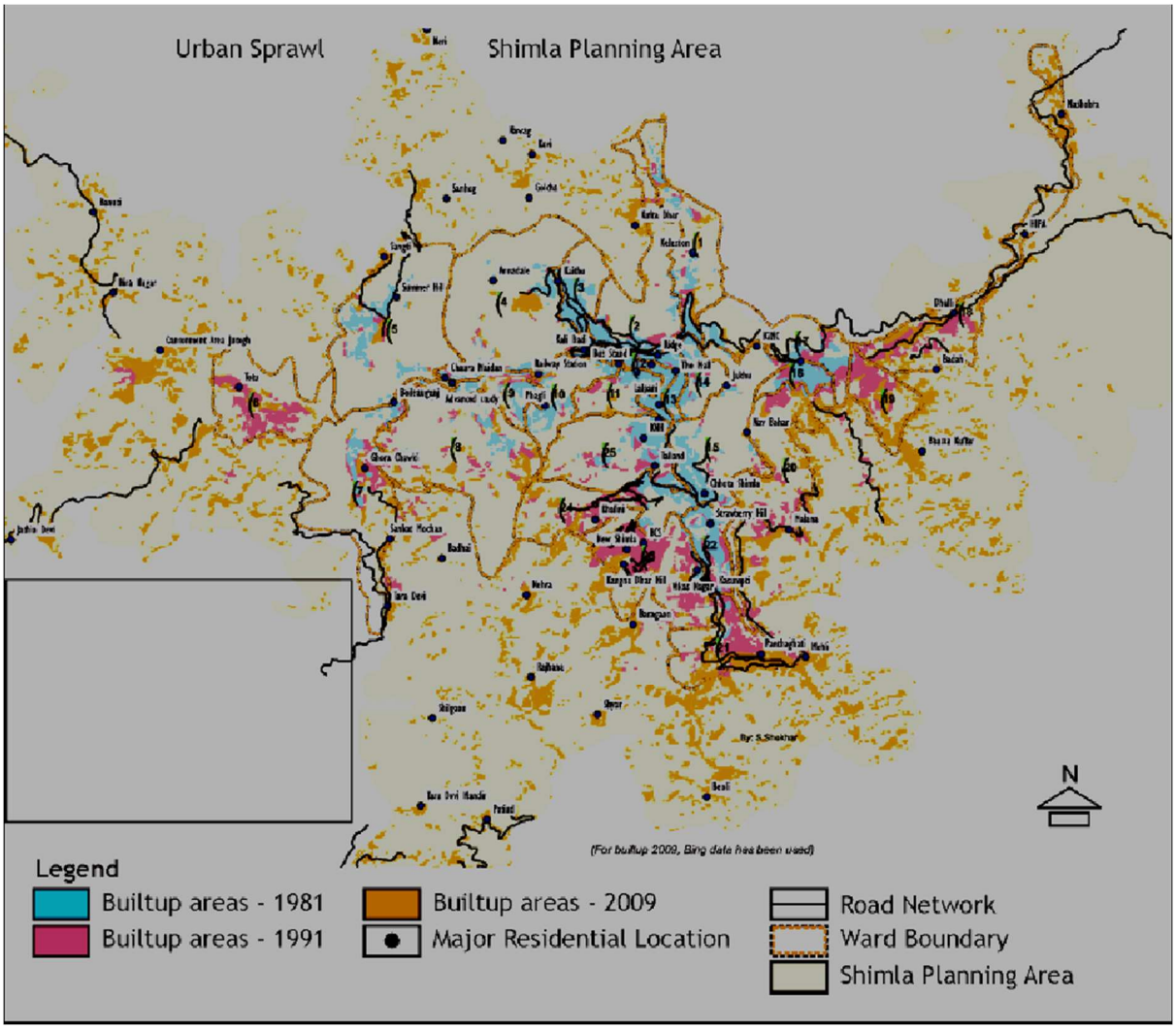


Figure 3 Shimla urban sprawl (CRISIL Infrastructure Advisory Team, 2013)

[11] Based on the data provided by the rapid baseline assessment of Shimla city conducted by the CRISIL infrastructure advisory Ltd on behalf of the MoUD India in October 2013.

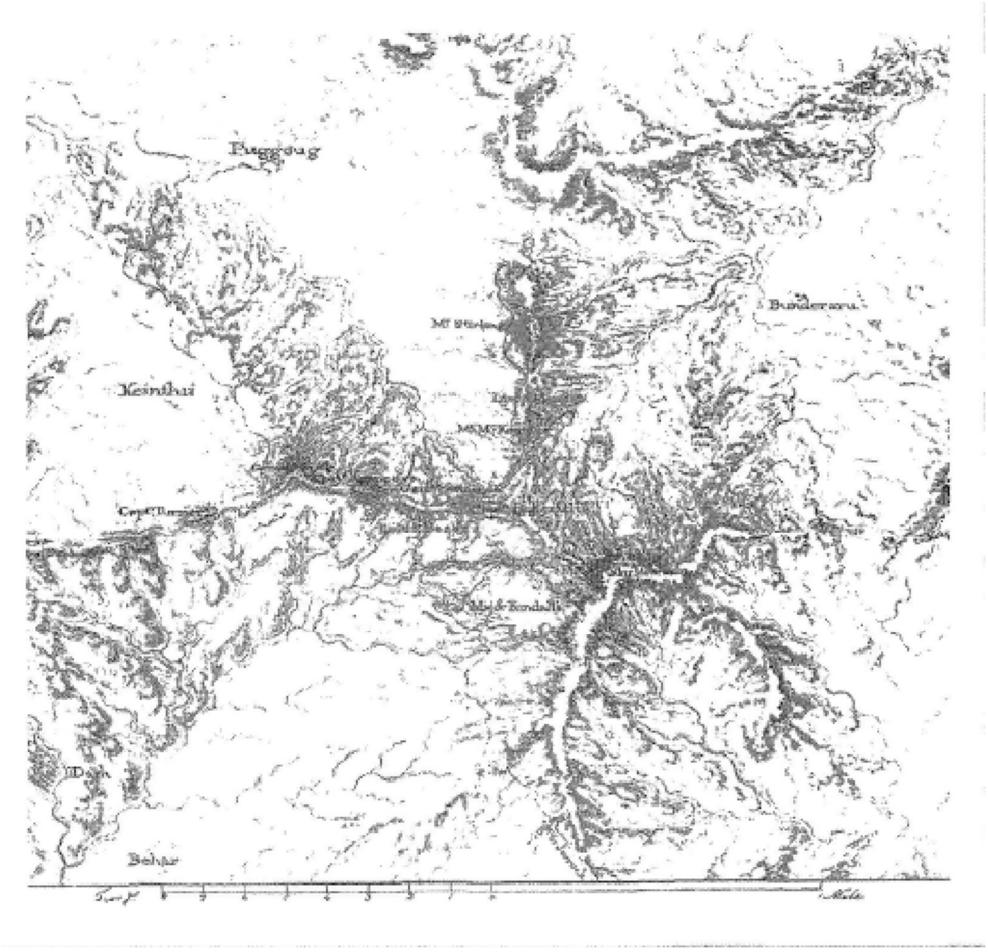


Figure 4 First Known Map of Shimla 1830 courtesy British Library

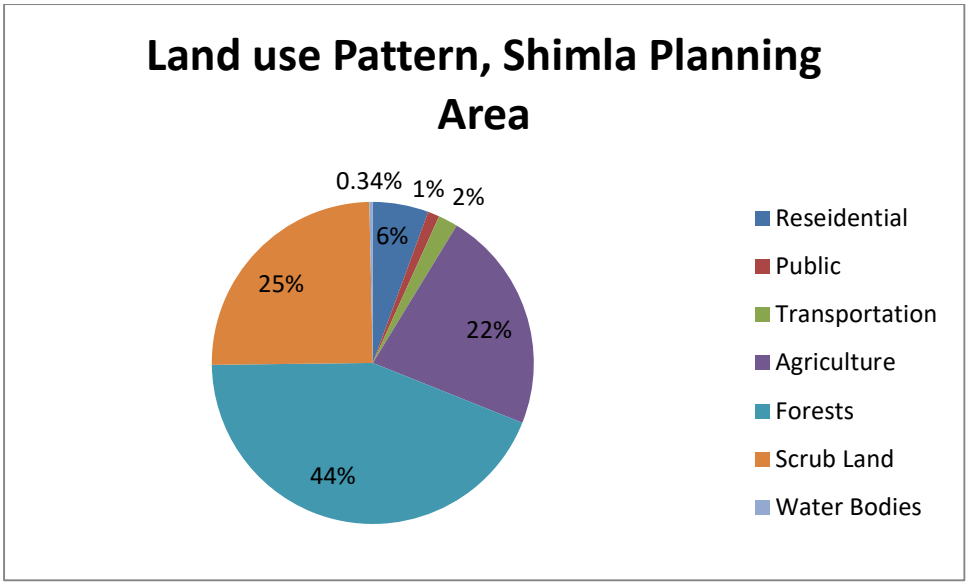


Figure 5 Land use Pattern of the city. (Source: Shimla draft development plan 2022)

The image of Shimla has multiple dimensions; studies such as the one conducted by Jutla(2000)[xxxii] show varied differences in the perception of people toward the city. On the one hand, tourists saw the city in one word as the mountain, trees, and climate, whereas the locals saw it as home, congestion, quiet, and water shortages. This different perception of the city weaves a contradictory image of its identity if we place them precisely over each other. Still, if we see the difference between permanence and temporary as the factor when we see urban in the mountain region, it makes sense. As one respondent told me, this was never supposed to be permanent and the urban space is about the flow in the mountain; you are in one place for some time and move on to the other place. The introduction of permanence in the fluid space always creates this precarious condition. This precarity is reflected in the city's water availability, which will be explored in detail in the following thesis chapters.

Contextualizing Scarcity

"Scarcity is a fundamental relation of our history and a contingent determination of our univocal relation to materiality." (Jean-Paul Sartre, 2004, p.125)[xxxiii]

Shimla emerged as an ideal site for the British due to the proximity of the water sources in the Jakhoo hills; even in the myths around the city, the place was a site where travelers used to get water from the local *faqeer* (Mystic). But how has the place moved from water abundant to water-scarce to aspiring for 24 * 7 supply? In Israel, Alatout (2008)[xxxiv] argues that this shift can be seen in the creation of a strong nation state that then solves the problem of water scarcity, ultimately defining the nature of the state. Water scarcity has a varied impact during crisis events. During fieldwork at the time of the water crisis, a respondent told me that he sees such problems every summer in Shimla and that the crisis is a hype in the media. One can see that the hegemonic character of scarcity makes it taken for granted without acknowledging the deeper rot.

On the other hand, voices that challenge the status quo also exist in terms of questioning when reaching a tipping point. A woman told me that she had to take a half-day leave to collect the water from the tanker as the water tanker time in their locality is about 11 am (during her work hour). It was also seen on the macro scale when women in the Khalini area of the city did a *chakkajam* (Roadblock) to demand water and led a march to the Chief Minister's residence.

The multiplicities of our experiences of water scarcity represent the varied nature of understanding water scarcity. Scarcity can be seen as the temporary unavailability of water, which can be solved through some intervention or an extraordinary event due to the series

of unfortunate events which would ultimately pass or the permanent condition of unavailability.

The physical understanding of water scarcity means that there is a demand and supply mismatch with demand exceeding the water supply. At the regional level, water scarcity is understood through two dimensions. If it is contingent on supply, water scarcity is seen as water shortage (water availability <1000 $m^3\ cap^{-1}\ yr^{-1}$). In contrast, if it is contingent on demand, the scarcity becomes water stress (water consumption >40% of available water) (Kummu et. al., 2016).[xxxv] At the city level, the minimum norm for water availability is 135 liters per capita per day. The common understanding of water scarcity in the solutionist regime of technocratic governance is that the water should not go below the above levels. If it does, a new infrastructure intervention is needed. These technological interventions do not consider the complexity of the socio-nature of water. Thus, despite technological interventions, the issue of water scarcity has grown; according to the World Bank, up to 1.6 billion people live under the condition of water scarcity, and this number is going to increase in the future with continuous environmental degradation and climate change due to global warming. This discourse around water scarcity is producing new regimes of water governance and management, from the reflection of the global discourse of privatization to the individual level (Becerra, 2018)[xxxvi] in the form of DIY water provisioning through water purifiers as well as tanker start-ups in the city like Bangalore[12], to the innovations like water ATM(Schmidt, 2020)[xxxvii], the regime of water conservations (including rainwater harvesting) all meant to look at elsewhere from the state in search of water. In addition, the justification

[12] Sharma, N. (2021, March 5). Bengaluru, Shimla ranked "most livable" cities in government's Ease of Living Index 2020. The Economic Times. Retrieved February 2, 2022, from https://economictimes.indiatimes.com/news/economy/indicators/bengaluru-shimla-ranked-most-livable-cities-in-govts-ease-of-living-index-2020/articleshow/81327639.cms?from=mdr

for water pricing (Morris, 2001)[xxxviii] and wastage reduction expands the neoliberal regime in basic service provisioning. Scarcity is the necessary condition of the capitalistic system of extraction, and the idea is that the scarce resources tend to be used more sustainably, whereas the evidence (see Rutte et. al., 1987)[xxxix] suggests otherwise.

This whole dynamic of water governance and control change is rooted in the notion of water scarcity. On the other hand, the regime of rights (Gleick, 1998) [xl] and justice (Sultana, 2018)[xli] is traversing in parallel because water, with its biophysical and spatial identity, becomes an "uncooperative commodity" that does not fit in the framework of capitalism (Bakker, 2005).[xlii] Thus, water becomes a medium for both commodification as well as emancipation as water becomes a starting point for the struggles seeking social justice (see Samel, 1999).[xliii]

Leif Ohlsson (2000)[xliv] further expands on the social nature of scarcity by arguing that the physical and social aspects of scarcity follow a trajectory. Physical scarcity produces the condition of social scarcity. When interventions focus on physical scarcity, they miss the social construction of scarcity. Lyla Mehta (2001)[xlv] further argues that the socially produced perception of scarcity is used to enable discourses around infrastructure. She uses the term "manufactured scarcity" for the scarcity beyond water. Manufactured scarcity occurs when water is available in nature but not accessible to the people. In public perception, manufactured scarcity seems to appear as an aberration rather than part of the water system, but we will see further that manufactured scarcity is also part of the water system. If we could add space to the mix, we would see how the manufactured scarcity is also part of the natural water system. But the relationship of water with society goes beyond this duality. Scarcity is generally understood as the opposition to abundance, but it is becoming

more evident that these two categories are more intertwined (Murcott, 1999; Jaeger et.al., 2017).[xlvi] [xlvii]

To understand the concept of water scarcity, it needs to go beyond the biophysical and needs to be looked at as an anthropogenic and sociological problem. In this thesis, I have engaged with the idea, exploring further how these discourses around scarcity enable the antipolitics of large infrastructure projects.

Scarcity beyond water

Can there be a water scarcity that is not contingent on the presence or absence of water? When we look at the politics around the availability of water in places, particularly in cities such as Shimla with ample rainfall[13], we see that the technical nature of the water supply creates an assemblage of actors whose interaction determines the state of scarcity. In the search for a method, Sartre argues that "scarcity is not a simple lack; in its most naked form, it expresses a situation in society and contains already an effort to go beyond it." (Sartre, 1963. P. 91)[xlviii] He avers scarcity contains the foundation of the society's solutionist regime or the infrastructural regime. Scarcity is seen as a technical problem where the question is what reproduces the scarcity. This conceptual trajectory has been explored through the infrastructure literature (McDonald et.al., 2014)[xlix]. James C. Scott (2008) in his work 'Seeing like a State,[l] has demonstrated the failure of centralized state-led high modernist interventions, which were intended to improve the human condition, failed miserably by producing the worst unintended consequence, be it in the case of German forest conservation or the urban planning of Brasilia. Elizabeth Whitcombe (1972), in her

[13] As per the Meteorological Centre, Shimla, the average annual rainfall in the city is about 1415 mm with a monthly variation between 346 mm in July to 18 mm in November. To put it in perspective, the average annual rainfall in India is about 1200 mm.

book,[li] argues that the canals have destroyed wells and other systems, which could be seen as a challenge to canals. It led to the alienation of people from traditional water systems by hierarchizing dependability over ecology. The new revenue governance regime further enabled the process. It encouraged water-intensive commercial crops leading to environmental degradation such as salinity, leading to water scarcity due to the unavailability of usable water.

In the case of Shimla, we are following two examples of how the concept of scarcity goes beyond water. The first would be the scarcity through diseases, and the second would be the scarcity through technology.

In 2016, Shimla faced its worst outbreak of jaundice in recent memory, with more than ten deaths and approximately 1600 people contracting the disease.[14] The outbreak led to the closure of Ashwini Khad, a major water source; we will see in Chapter 3 how it became a precursor to the water crisis in Shimla in 2018. One former municipal representative told me that "the city faces recurring bouts of Jaundice (2006, 2010, 2016) due to the disposal of untreated sewage upstream of the water plant at the Ashwini Khad stream. Whenever there is a period of low rainfall, the natural discharge of the stream becomes insufficient to wash away the untreated sewerage, thereby causing the outbreak of the disease." The regular outbreak of diseases created a precarious water situation in the city as it reduced the reliability of the water sources, leading to a state of scarcity.

In terms of the material assemblage of the water supply in the city, pumps play a crucial role as the water has to be moved to the higher altitude reservoir for gravity distribution.

[14] Bisht, G. (2016, February 28). Shimla battles worst jaundice outbreak since 1947. Hindustan Times. Retrieved May 12, 2017, from https://www.hindustantimes.com/india/shimla-battles-worst-jaundice-outbreak-since-1947/story-I3LhFdiCO0TjuYGaYXs8sK.html

Therefore, the autonomy of materials such as pumps plays a critical role in the provision of water, particularly in the geographically challenging hill region. As access to the alternative is more complicated, it gives material-specific agency, which is independent of engineering and financial capabilities. In the case of Shimla, pumps emerged as an essential component of the water supply as early as the 1890s, when the gravitational system of the water supply became inadequate for the city. According to Younghusband's report, pumping water from the Cherot Nallah and water storage is the only way to solve the city's water needs. [15] Pumps bring with them their challenges. First, silt becomes an important issue that impacts water availability. The water shortage due to pump failures occurs due to heavy silting of the water sources that usually occurs during heavy rains like the month of July.[16] Thus, pump failure also causes a water shortage in the city when there is no actual shortage of available water.

As we try to understand the nature of scarcity, one question that would come to mind would be what this has to do with this thesis. Urbanization of scarcity has some impact in the real world in terms of the claims made by people over the urban space. Works such as Hydraulic City (Anand, 2017)[lii] allude to the relationship between water and the production of urban citizenship. In the next section, I will argue for the more overt relationship that scarcity has with the right to the city.

Scarcity and the city

The concept of the right to the city is the most fundamental notion of the city as it asks who belongs to the city and who can make and remake the city. The right to the city has

[15] Panjab, N-WP, Oude. (1890, July 23). *Homeward Mail*, p. 909.

[16] Tribune News Service. (2021, July 23). Too much silt, pumping of water stops at Giri Water Scheme. Tribuneindia News Service. Retrieved July 24, 2021, from https://www.tribuneindia.com/news/himachal/too-much-silt-pumping-of-water-stops-at-giri-water-scheme-286974

been expanded to many dimensions, such as the right to the city, the 'right to a gendered city' (Fenster, 2005)[liii] to the 'right to street vending'(Bénit-Gbaffou, 2016).[liv] These new ideas on the right to the city emerged from Henri Lefebvre's book Le Droit à la Ville, which introduced the concept of the right to the city through the analyses of the Marxist concept of use-value and exchange-value; he argued that the use-value of cities as a place for living and of having and socio-cultural life is overshadowed by the emergence of exchange value, i.e., the commodification of the urban spaces. Thus, to counter this, there is a need for the right to participate, appropriate, access, and occupy the public spaces. To give the context of this framework, he argued,

" The right to the city manifests itself as a superior form of rights: the right to freedom, to individualization in socialization, to habit and to inhabit. The right to the oeuvre, to participation and appropriation (clearly distinct from the right to property), are implied in the right to the city." (Lefebvre, 1996 [1968], p.174)[lv]

Thus, for him, the claim of a 'legal' citizen on the city is irrelevant, as these formal claims do not recognize the value in social and political interactions among the residents and their claims emerging from this interaction. David Harvey used the framework of accumulation by dispossession to further build on the concept, as this accumulation is a continuous thing rather than a unique event when exchange value crosses use-value as conceptualized by Lefebvre. Thus, he conceptualized the right to the city as

"The right to the city is far more than the individual liberty to access urban resources: it is a right to change ourselves by changing the city. It is, moreover, a common rather than an individual right, since this transformation inevitably depends upon the exercise of a collective power to reshape the processes of urbanization." (Harvey, 2008, p.23)[lvi]

The question of the distribution of resources brings the corollary of the distribution of scarcity. What happens when something is not there as opposed to what happens when something is there? The politics of the distribution of scarcity and what it does to space as well as people is an essential question that needs to be explored.

Water scarcity affects the right to the city in two directions. First, scarcity legitimizes the production of the infrastructure, as we will see in the chapter on the impossible infrastructure. Second, it produces the discourse around urban space, particularly the Neo Malthusian understanding (see Corbridge, 1986)[lvii] of the space, which we see in the case of Shimla. In the realm of this discourse, all the problems related to water challenges are brushed aside in the name of the city's high population and the city's carrying capacity. In conversations related to water availability in the city, one hears the common phrases like "there are too many people in the city." Interestingly, this discourse was present even a hundred years back when the city was growing, particularly with the increase in the Indian native population. One Sanitary commissioner in 1898 reported," I regard Simla, in a general way, as vastly overbuilt and overcrowded in the summer season." (Kanwar, 2003, p. 130).[lviii] So, the city has expanded with the narratives around the water scarcity and the racial undertones about the competition for the resources; as a local newspaper, The Simla Times, wrote in 1894, ‘Natives are too fond of encroaching and stealing a little of their neighbor's fresh air by putting up boards and walls' (Kanwar, 2003, p.137). The nature of scarcity is such that it creates an antagonistic relationship between people and sees others as the problem. Sartre argues “Scarcity is not just the milieu. Becoming interiorized in the man of scarcity, it first constitutes an initial antagonistic relation between every individual and each

and every other." (Sartre, 2004, p. 422)[lix] Scarcity creates a situation of competition among people (Hoekstra, 1998).[lx] Hence, scarcity tends to inhabit the space of collective action. In this situation, the scarcity plays an antagonistic role in the right to the city. There are also times when the water crisis creates temporary alliances to negotiate with the state, as we will see in Chapter 3, but these alliances are found to be event contingent, which dissipates after the crisis. Later, the blame game continues as usual. As we will see in Chapter 2 on urban citizenship, ultimately, scarcity tends to pervert the claims over the city by turning citizens into consumers.

Research Objectives

How is that a city in the Himalayas, called the water towers of Asia and a major source of water for the billion plus people in the Indian Subcontinent, suffering from the shortage of water? This question was the starting point for me to explore the issue of the water crisis in Himalayan cities. The thesis attempts to take a specific case study of urban water in Shimla to explore issues related to access and equity in the Himalayan region. The thesis explores the politics surrounding the water crisis and dives into the politics of water and infrastructure in the city by analysing the discourse surrounding crisis. This thesis explores the following questions:

1. How is urban space constructed through the "ecological contradictions" (Foster, 2002)[lxi] inherent in colonialism and capitalism? In what ways does the capitalistic metabolism of nature produces urban space?

2. How does the relationship between urban citizenship, municipal services like water, and the State play out in urban waterscapes of scarcity?

Methodology

One big methodological question in urban studies is what is one looking at and from where? (see Tylor, 1982; Sheppard & McMaster, 2008; Delaney & Leitner, 1998)[lxii] [lxiii] [lxiv] There has been research on urbanization which either takes their site as local (Sternberg & Anderson, 2014) [lxv] and then moves to global and the other moves from the global (Brenner & Theodore, 2005)[lxvi] and then sees how the local impacts global processes. The question of scale is not just about the vantage point but also emerges as the researcher's point of view on how they 'define the boundaries of identities around which control is exerted and contested' (Herod, 1991)[lxvii] In this research, I am attempting to keep myself within the local, i.e., the city, and looking at the city. The changes happening around the globe do impact urban processes. Still, the urban has its agency and metabolisms, which needs to be explored by freeing them from the duality of global-local urban processes (McCann, 2002)[lxviii]. In the thesis, I have studied urbanization processes through the lens of the materiality of the water (of its presence and absence). To understand water is to understand social, political, economic, and ecological processes encompassing urban space. Thus, the research is rooted in critical relativism, wherein space encompasses multiple realities within it. Water cycles can't be seen only through their physical manifestations. Rather it co-constitutes society and vice versa (Budds et. al., 2014).[lxix] Karl Wittfogel (1957)[lxx] , in his seminal work *Oriental Despotism*, explored the relationship between water and society,

showing how water becomes an instrument for the legitimization of state power. However, more contemporary works see the relationship not just as one-sided but as having multiple dimensions (Todd, 2014).[lxxi] The construction of multiple realities can be explored by traversing the vantage points from which these realities are formulated and performed. To understand the field, it is important to avoid creating hierarchies in what one encounters as water, and its relationship with people has a significant degree of variation. Thus, one has to follow the Glaser Dictum of "All is Data," (Glaser, 2001)[lxxii] wherein one has to take into account "What is being told, how it is being told and the conditions of its being told, but also all the data surrounding what is being told."(Glaser, 2001, p. 145) Thus, I used the 'constructivist grounded theory (see McCann, 2002)[lxxiii] approach to understand the relationship between water scarcity and urban space in the context of Shimla. I have explicitly used a constructivist methodology because, as a researcher, I can't detach myself from the construction of knowledge and merely report it. Instead, my presence influences construction and interpretation of the knowledge. Although this grounded approach increases the time for the fieldwork due to the iterative nature of the data collection, it still brings out the multiple textures of reality that remain hidden through other methods. While this approach lacks generalizability, it focuses on positionality, particularity, and thick analysis (see Timonen et. al., 2018)[lxxiv] to bring out a nuanced understanding of contextual urban processes to reaffirm the unevenness of the global urban processes.

Research Design

I used the case study of the Shimla water crisis in 2018 as the entry point of the research. Exploring the water crisis event helped me to gaze into the nature of the water infrastructure in the city as cracks in the system give a peek into the 'drama inherent in the system (Starr, 1999).[lxxv] The water crisis event acts as a moment of rupture from the established order; such events possess the transformative power of bringing changes to the existing structures (Sewell, 2005).[lxxvi]

The crisis wasn't just a window into the future but also gave a peek into the past of the water governance in the city. The crisis enabled a conversation among the people about the ontology of the water infrastructure in the city, making them question what was just seen as given. We will also see how the water crisis is used as an excuse by the state to restructure the water institutions in the city in an attempt to remove the 'politics' from water governance.

The fieldwork started with the state assembly elections in November and December of 2017, where I began to talk with the local residents about their expectations and demands from the political establishment. Due to the close proximity of Shimla from Mohali, I did several short visits to the city to hold interviews with the government officials from the municipal corporation, both serving as well as retired(n=6) and elected representatives (municipal councilors) (n=4).

The second round of the fieldwork started when the water crisis news came up in the media in May-June of 2018. During this time, I had majorly interacted with the people during their protests and when they were lining up for the water tankers. In this round of the fieldwork, I focused on ethnographic observation and striking the conversation instead

of conducting full-length interviews. During this time, I focused on walking around the city (See Lee & Ingold,2020)[lxxvii] to understand the texture of the urban space and observe people in their daily routines. Walking provided an embodied understanding of the movement of water from the tankers to the homes as I stood around the lines for water collections. I conducted more extended interviews after the crisis during December 2018-January 2019. I selected two wards, Sanjouli and Krishnanagr, and talked to people from middle-class households and people from the lower-income group. I visited local *baories(*Water streams) in Krishnagar areas where I met mostly women who came to wash cloths and collect water from these sources. I conducted 10 interviews in and around baoris with 8 women and 2 men. In the Sanjouli neighborhood, I conducted 10 more interviews through my previous contacts in the region. In this neighborhood I conducted interviews with 6 men and 4 women. All the interviews were unstructured to ensure that the respondents were at ease for the same reason I deliberately avoided using recording devices and instead took sparse notes of the conversations. As we will see in the following chapters, I also included the students living in the Paying Guests in Sanjouli, who have a precarious position as city residents.

During my last visit (for research) in June 2019, I spent time in the Himachal State Archives, where I looked at the colonial records of the Simla Municipal Corporation. I also conducted four more expert interviews with retired officials from the Irrigation and Public Health department of the state government.

The research was made possible through Shimla's extensive repository of secondary data. The studies conducted by various consulting and non-government organizations like GIZ, Price Waterhouse Copper, etc., helped collate the city's information. Multitudes of

documents from policy to audit to city pans from the Shimla municipal corporation were collected and analyzed using critical discourse analysis to understand how these texts perform power in creating and producing a particular urban reality(Fairclough, 2004).[lxxviii] Online sources like Facebook groups related to the Shimla, Twitter hashtags on Shimla and local handles, and the YouTube channels of regional news portals became a source of a large swathe of information post-2010. I also accessed British Newspaper Archives, National Archives of India, and The Tribune Chandigarh's archive as the data source. Due to the city's prominence, I was also able to refer to the other existing works of both Indian and Western historians and political scientists for my research.

Questions related to reflexivity and positionality are essential in ethnographic research, as the researcher's positionality influences how experiences are constructed and ultimately written and analysed (Sultana, 2007)[lxxix]. For this research, I need to acknowledge that I don't own the water crisis experience. Even during the water shortage events, I always had the option of moving out of the city, which most residents didn't have. This difference often created a situation where people considered me an outsider and someone who was incapable of understanding the water problem. This position helped me in a certain way as an outsider; my interlocutors explained the water problems in detail, especially upon hearing that I came from a part of the state with an abundant water supply. As an outsider, I also felt everyday living under water scarcity was difficult for me to reflect on through an auto-ethnographic approach as I have not experienced it over a sustained period (read (Guru & Sarukkai,2012)[lxxx] for a comprehensive debate on who has the right to theorize).

Structure of Thesis

The thesis will explore the life of scarcity through the three chapters.

The first chapter will look at the evolution of scarcity alongside the growth of the city paying particular attention to the spatial and the temporal synamics. The question of water, in particular, is interesting, as the issue of water scarcity plagues almost all cities of the Himalayas (Kovács et. al., 2019; Shah & Badiger,2020).[17] [lxxxi] [lxxxii] Despite recurrent water crisis events in the Himalayan cities, the relationship between urban space and water scarcity has not been given its due attention. The question of water scarcity cannot be separated from the question of production of space in whatever way we see the relationship, be it the deterministic approach or the constructivist approach. The water scarcity is rooted both in the water infrastructure inherited during the colonial and postcolonial period meant for the population of that time and embodying the exclusions and biases of that time. But it is also being produced through changing economic and technological regimes as Himalayan cities are catching up with neoliberal globalization.

The second chapter will look at the formalization of scarcity in the context of citizenship and how scarcity materializes in the city. This chapter will look at citizenship as experienced and performed by the people, produced through scarcity. This understanding of citizenship moves beyond the legal-jurisdic relationship between the state and the people. In the case of colonialism and neoliberalism, external forces tend to restructure this relationship. The performance of this citizenship produces and cements the people and the state through the

[17] Ghai, R.(2018, May 29)Water crisis in the Himalayas: story of urbanisation at the cost of environment. Retrieved May 30, 2018, from https://www.downtoearth.org.in/news/water/fragile-blue-mountains-60555

infrastructure, whose repercussions are felt for a long time. This relation produces a variegated form of infrastructure embodying the contestation within and produces the "infrastructural imaginary" to legitimize the hegemony of the infrastructure. Departing from the notion of contestations (Von Schnitzler,2016)[lxxxiii] for water rights as an instrument to claim citizenship, I would look at the claiming of citizenship through the claims on the water and the articulation of the logic of the state of that time.

The third chapter will look at infrastructure and crisis as the product of scarcity and how scarcity leaves a mark on the city through the infrastructure. This chapter will look at the hegemonic vision of development supported by the continuous building of infrastructure. There is literature on resistance and opposition to development (Von Schnitzler,2016a; Drew, 2014)[lxxxiv] [lxxxv], but the support for the infrastructure is ever-present; despite the extractive foundations of the infrastructural regime, the aspirations of improving services through the development of infrastructure projects play a crucial role in drowning down the voices of resistance. I would try to make sense of the other side of the infrastructure, i.e., legitimizing the large infrastructural projects to de-democratize the city.

Chapter 1: City on a hill: Spatial Ecology of Shimla

"Some of our evocations of a place (in the Western world but not only there) indeed draw on hills… We escape from the city may be to replenish our souls in contemplating the timeless of the mountains, by grounding ourselves again in the' nature.'" Dooren Massey (page 131) [lxxxvi]

Introduction

Urban space in Shimla is going through a churn. On one hand, hill stations are regarded as spaces close to nature; on the other hand, the aspirations of people and the infrastructural changes happening in the region are bringing a change in the region's urban centers. The infrastructuring of the Himalayas through proliferation in the construction/widening of the road network has brought the mountains closer to the plains. This time-space compression has influenced the social and economic space of the region (Harvey, 1999).[lxxxvii] We will see that the urban space of Shimla is shaped by this compression, trying to flatten the 'coexisting heterogeneity'(Massey, 2005,p.9), which started during the colonial period for extraction of the mountain resources. Thus, Shimla's precarity lies in the "geohistorical processes of colonialism and globalizing capitalism." (Massey,2005,p.9)

As I travel to Shimla from Mohali, one thing amazes me is the speed of change in terms of road infrastructure. The road is being widened at the cost of the stability of hills to reduce the travel time to the mountains.[18][19][20] This speed contrasts the slowness inherent in

[18] Sharma, A. (2021, June 24). Good News For Travellers: In Next Two Years, You'll Be Able To Travel From Delhi-Kullu In Just 7 Hours. https://www.outlookindia.com/. Retrieved March 13, 2022, from https://www.outlookindia.com/website/story/india-news-good-news-for-travellers-in-next-two-years-youll-be-able-to-travel-from-delhi-kullu-in-just-7-hours/386063

geography of the region. Accessing Shimla was a challenge for travelers during British time. As Lord Dalhousie (Governor-General of India 1848-1856) wrote,

"We made only one halt from Attock to this place (Simla), and then only because the cattle knocked up. We made 52 marches (18 of them in the hills) in fifty days, the marches averaging 10 miles, and crossed six large rivers, four of the six unabridged, and one of them even without boats, which we crossed on inflated buffalo skins!" (Pradhan,2017, p.57)[lxxxviii]

Later, despite the construction of wider roads, it was still a long ardors journey to access the city. Manual labour was deployed and the use of 'Horse Buggi'/'Palki' was the practice. This continued until the emergence of the railways. As Lady Dufferin (Wife of the Viceroy Lord Dufferin) wrote in her travelogue to Simla in 1885,

"We went at a great pace, ascending and descending, and twisting and turning around the most fearful corners, always at the edge of the precipice!"...We changed our horses every four miles. The only place I have ever imagined like this spot is Mount Ararat with the Ark balanced on top of it, and I am sure that when the rains come, I shall feel still more like Mrs. Noah." (Dufferin,1890) [lxxxix]

Now the hill town had a Lamborghini car rally![21]

[19] Sharma, S. (2019, June 27). Massive landslide waiting to happen on Manali highway. The Times of India. Retrieved March 12, 2022, from https://timesofindia.indiatimes.com/city/shimla/manali-stares-at-massive-landslide/articleshow/69966159.cms

[20] Wounds show up as disasters rock Himachal Pradesh. (2021, July 29). The Times of India. Retrieved March 13, 2022, from https://timesofindia.indiatimes.com/city/shimla/wounds-show-up-as-disasters-rock-himachal/articleshow/84843750.cms

[21] Tribune News Service. (2021b, November 30). Watch: 50 Lamborghinis riding on Shimla roads, special weekend has hill town amused. Tribuneindia News Service. Retrieved March 13, 2022, from https://www.tribuneindia.com/news/himachal/watch-50-lamborghinis-riding-on-shimla-roads-special-weekend-has-hill-town-amused-344657

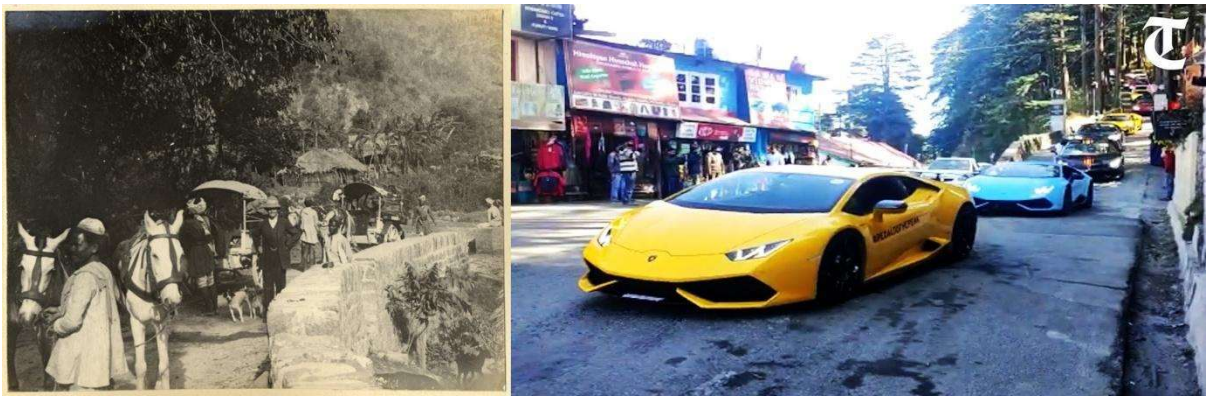


Figure 6 Changing trajectories of transportation from Buggies[22] to Lamborghinis on hills[23]

Ayona Dutta[24] talks about the notion of time in the context of Shimla, where the city produces a topographical slowness which is being challenged through infrastructural interventions, most recently through the SCM(Smart City Mission). While walking around Shimla through its slopes, one can feel that time slows down. The steeper the slopes, the slower the time is; the steep slopes of the city such as in Krishnanagar appear to be fixed at some different time. Infrastructural intervention tends to break this slowness through projects like the ropeway[25] and the proposed escalators under the urban renewal plan for the city. These projects are expected to be implemented in parts of the city frequented by tourists while neighborhoods like Krishnanagar remain off the map for futuristic schemes. Unequal access to infrastructure due to spatial (and topographical) inequality creates a duality of the notion of time in the region, which further increases the distance between the

[22] https://www.reckontalk.com/15-very-old-rare-photos-of-shimla-queen-of-hill-stations-part-ii/

[23] Tribune News Service. (2021c, November 30). Watch: 50 Lamborghinis riding on Shimla roads, special weekend has hill town amused. Tribuneindia News Service. Retrieved March 13, 2022, from https://www.tribuneindia.com/news/himachal/watch-50-lamborghinis-riding-on-shimla-roads-special-weekend-has-hill-town-amused-344657

[24] Datta, A. (2021, September 14). Shimla: The slow contoured life of an imagined Smart City. Learning From Small Cities. Retrieved September 30, 2021, from https://www.smartsmallcity.com/blog/2019/8/4/shimla-slowsmartcity

[25] Tribune News Service. (2021a, March 29). Ambitious Shimla ropeway project to address travel woes. Tribuneindia News Service. Retrieved March 9, 2022, from https://www.tribuneindia.com/news/himachal/ambitious-shimla-ropeway-project-to-address-travel-woes-23189

parts of the city. Instead of bringing different parts of the city together, infrastructural interventions tend to isolate them, making cartographic proximity redundant. The confusion about the city is visible for the first time visitors of Shimla relying on the Google maps leading them into the dead ends or unmanouvarable points as the contours create 'distortions' in the space with the undulations. The confusion is further exacerbated by unique infrastructural fixes of the region, like the stairways, which are part of the city's transport veins but seldom fit within the two dimensional view of the mobile screen. Terrain and its agency has been a differentiator in studying urbanization in the Himalayan region. The slopes in the major cities in Indian plains are precarious and marginal places (Bhide & Solanki, 2016)[xc] where people create their own spaces under the shadow of the state's eye, and the slums emerge in those spaces.

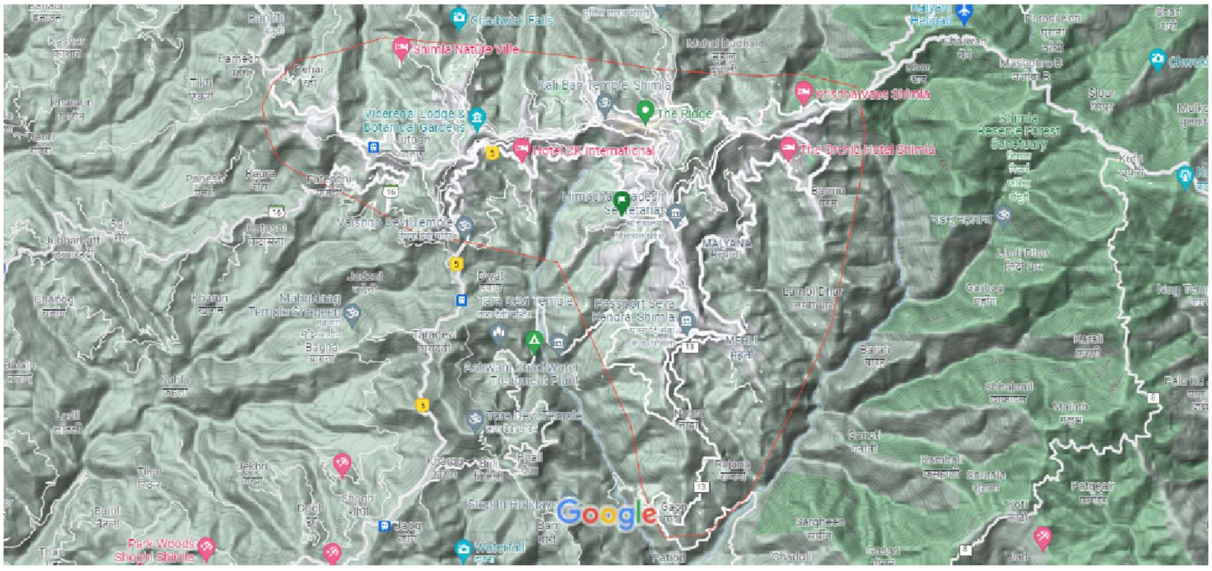


Figure 7 Contour map of Shimla (Satellite) Courtesy: Google Maps

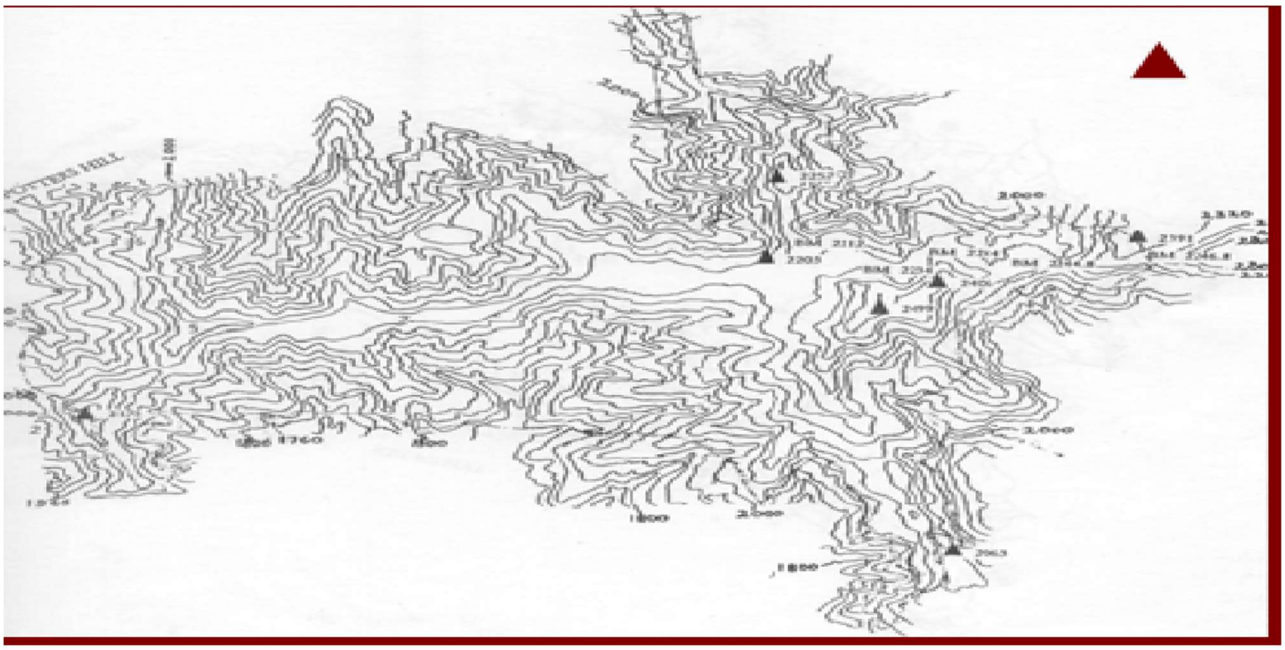


Figure 8 Contour map of Shimla (DP) (Source: Shimla development plan)

Government also sees hill towns as the same precarious spaces without acknowledging their geography. Framing mountain cities as precarious spaces under the solutionist(see Dobbins, 2011, p.16)[xci] regime creates a ground for a 'fix.' Here, the state tends to 'solve' the problems without comprehending the nature of the challenges people face in these cities. Everything becomes problematic, from mobility to infrastructure, which needs to be fixed not just for the city's inhabitants but also for the tourists. Cities like Shimla are an example of the notion of a fix. The regime of 'fix' is not new for Shimla's growth trajectory. Colonial regime modified local ecology for their own benefit (Mahony & Endfield, 2018).[xcii] This fix is in terms of the region's politics where the sovereignty of the space and ecology (Tucker, 1982)[xciii] was fixed by the British. The marketplace and a seasonal base for the nomadic population were transformed into a military outpost, and later into the capital of the British Empire in India, which was a process of fixing the sovereignties over a period of time. In the next chapter, we will have a glimpse of such smoothening through the arrival of the networked water infrastructure, which moves both the material and the aspirations

associated with access to water, and thereby brings more and more areas under the influence of the city.

Mountain urbanization is a less explored part of urban studies in India as they are regarded as quaint small towns far away from the hustle and bustle of the global circuits of capitalism where people go to deurbanize themselves. This 'romantic' image of mountain urbanization is produced by tourists and policymakers. This romantic image of mountains views the region with a bounty of natural resources like clean air, water, flora and fauna. Thereby, it hides the possibilities of understanding the everyday urban challenges like water scarcity in mountain towns.

The circulation of water not only represents the environmental circulation but also the circulation of capital and power. In such cases, the obstruction of such flow during the water crisis engenders the rearticulation of these relationships. To comprehend the water crisis, we need to understand the specificities of mountain urbanization. The urban space of the region should be looked at as the production of a specific socio-temporal form rather than just a geographically contingent thing. But as we know, the water crisis in Himalayan cities is not a one-time event, but rather a recurring phenomenon.[26] [27] [28] Thus, the cases of water crisis, for example in Cape Town caused by the infrastructure failure or in Bangalore caused by the colonial water infrastructure failure, would only give particular forms of water crisis that may not be valid in the case of Shimla. Like the proverbial tale of blind men and

[26] Shrestha R.P. & Seddon, D.(2020, August 31). Solution to Kathmandu's water crisis. Nepali Times. Retrieved October 4, 2021, from https://www.nepalitimes.com/here-now/solution-to-kathmandus-water-crisis/

[27] Gautam, R. (2018, June 1). Kullu Town On The Banks Of Beas River Faces A Water Crisis. Hill Post. Retrieved March 13, 2022, from https://hillpost.in/2018/06/kullu-town-on-the-banks-of-beas-river-faces-a-water-crisis/110484/

[28] Water scarcity problem in Mizoram. (2011, February 12). MorungExpress. Retrieved March 9, 2022, from https://morungexpress.com/water-scarcity-problem-mizoram

elephants, decision makers take case studies of these crises in different parts of the world and try to develop a standardized approach for dealing with the water crisis across the globe. But unless we acknowledge the multiplicities of the nature of the water crisis, we would not be able to effectively intervene in water crises happening particularly at margins of the sites of knowledge production. There have been studies that explore the dimensions of the water crisis through the lens of bureaucratic despotism (Wittfogel, 1957) and the hydraulic relationships (Anand, 2017) produced between the actors in urban space influenced through social and economic factors like gender (Truelove, 2011)[xciv] and caste (Prakash & Singh, 2012)[xcv]. As we move from flatter urban spaces to contoured spaces, the agency of space in the water cycle becomes prominent. As we will see in the later sections, water availability depends on the position of households on the slope. Urban space is structured around water streams, and any attempt to deviate from this trajectory creates water-scarce regions. In this chapter, I consider topographic urban space as an actor in understanding water scarcity and its crisis.

There have been attempts to understand urban water scarcity through a wide ranging case studies (see Heynen et. al., 2006)[xcvi], but these studies are limited to a certain typology of the city. They do not consider the wide variety of urban typology's geographical, spatial, and historical diversity. In the context of countries like India, or what we collectively call Southern Urbanization (Schindler, 2017)[xcvii][29], the historicity of the cities needs to be taken into consideration to start any meaningful conversation about their present. Although

[29] Seth Schindler frames Southern Urbanism as the sites of contested metabolic configurations where the "flows are endlessly expanded, reworked, rerouted, blocked and above all contested." These contestations embody the historical and contemporary processes like colonialism and neoliberalism continuously acting on the urban space. Unlike in Northern cities where the relationship between materiality and political economy is constituted by the latter, Schindler further argues that in southern cities this relationship is always co-constituted.

colonialism is not the only major force to shape urbanization in the Indian context, it is still prominent, even more so in the context of mountain urbanization in India, where many new urban centers like Shimla, Darjeeling, Murry emerged as the new centers of colonial opulence. We see space in the context of colonial cities through the reports and other archives, which were mainly generated by the British people. There is an absence of writings by the Indians about their lived experiences in these towns. thus, the writings about colonial cities may give a one-sided understanding. The notion of these mountain towns as leisure spaces for Europeans produced racialized urban spaces; for example, in Shimla, "between four and seven o'clock in the evenings that the mall was cleared of sweepers, coolies, mule leaders, and workmen" so that the British could "take in the air with the likes of their own. " (Kanwar, 2003, p.63) This was done to ensure uninterrupted leisure time in the public space of The Mall (uppermost part of the city which was designed as the Market place for the British). In the later section, we will see that the segregation in terms of space also articulated itself in the access to water, where the water quality varied depending on the people receiving the water. The question of water, in particular, is an interesting one as the problem of water scarcity plagues almost all cities of the Himalayas(Kovács et. al., 2019; Shah & Badiger,2020).[30]

Furthermore, the British considered themselves civilized because they had an appreciation for natural visual beauty and 'aestheticism.' (Johnson, 2011, p,83)[xcviii] Pleasure was the key differentiator for the colonizers; for them, natives only found pleasure in their daily mundane lives in Simla and did not have the ability to appreciate the beauty of the majestic Himalayas (Harrop, 1925).[xcix]

[30] Ghai, R. (2018, May 29) Water crisis in the Himalayas: story of urbanisation at the cost of environment. Retrieved March 13, 2022, from https://www.downtoearth.org.in/news/water/fragile-blue-mountains-60555

Despite the recurrent events of water crisis in Himalayan cities, the relationship between the production of urban space and water scarcity remains unexplored. The question of water scarcity cannot be separated from the question of urban space in whatever way we look, be it through deterministic approach or the constructivist approach. The water scarcity is rooted both in the water infrastructure inherited during the pre-colonial and colonial period meant for the population of that time and embodying in itself the exclusions and biases of that time. But scarcity is simultaneously being produced through the changing economic and technological regimes as the Himalayan cities are catching up to neoliberal globalization.

In this chapter, I will look at the interaction between water scarcity and urbanity through the lens of political ecology of urban space. I will contextualize water scarcity in the context of Himalayan urbanization, where scarcity and urban space are intertwined with each other in the case of Shimla. I will be adding towards the Himalayan urbanization (Negi et. al., 2016)[c] as an epistemic category that needs to be explored on its own. Case study of spatial development of Shimla would show how urban space in the Himalayas and its relationship with water scarcity are unique and require a separate section within urban studies in the global south.

Making sense of Himalayan urbanization

Himalaya is considered a pristine natural space unencumbered by urbanization until the colonial period, when new towns like Simla were created; one reason for this discourse is that most of urban studies in the region focus on colonial towns. But there have been urban centers in the Indian Himalayas in terms of political centers in cities like Chamba, Srinagar,

or the trading hubs like Kullu and Leh, or the gateway towns for the pilgrims like Joshimath and Dharamshala. Due to the colonial centrality of urban mountain discourse, the nature of urbanization becomes incorporated into the idea of leisure. It ignored histories and geographies of precolonial urbanization that took the form of market towns (Sharma, 2001)[ci]. These precolonial urban spaces were rooted in the idea of the local weather rhythms in which people come together during particular seasons for trade. These towns were connected to the economy and society of the whole region. On the other hand, colonial urbanization brought a sense of imperviousness, where urban centers were not connected with regional ecology. Space, rooted in the idea of leisure, produces particular materialities emphasizing certain infrastructures and thereby producing urban space in a specific image. Colonial urban space remained disconnected from the local mountain economy, where the space was mobile, and the making and unmaking of spaces depended on weather cycles. This disconnected nature of urban policy making has been inherited by the post-colonial state, where the notion of preservation of the mountain geography in its colonial form has become the goal. Focus of the urban policies is to freeze the urbanization in the region to further avoid ecological destruction in the Himalayas.[31] National level policies like National mission for Sustaining the Himalayan Ecosystem paint an image of a rural Himalaya which is not a complete story. Statistically, there is great diversity in the level of urbanization in the region.

[31] NATIONAL MISSION FOR SUSTAINING THE HIMALAYAN ECO-SYSTEM, National action plan on climate change (2010). Retrieved January 26, 2022, from https://dst.gov.in/sites/default/files/NMSHE_Mission_document.pdf.

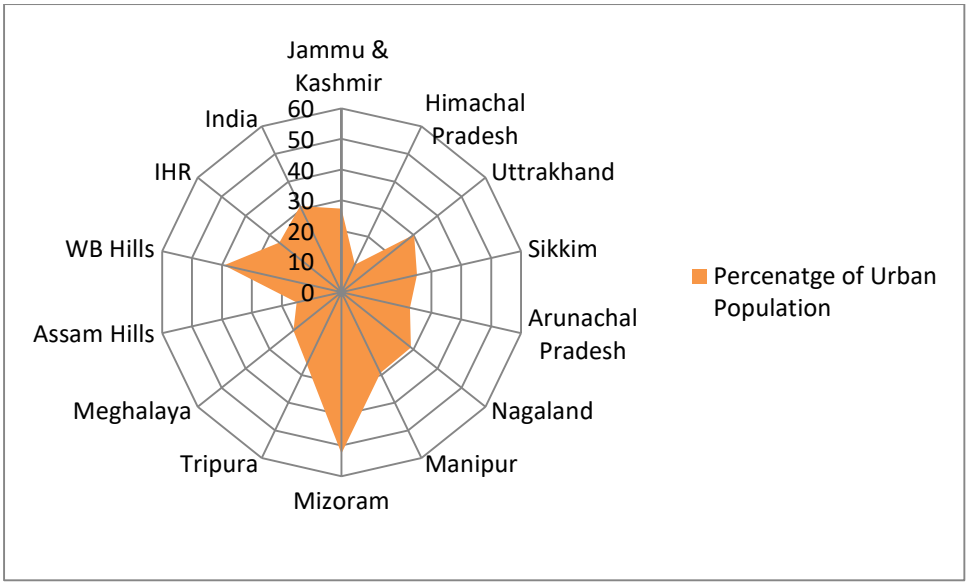


Figure 9 Level of Urbanization in Different States of the Indian Himalayan Region (IHR) Source: Census of India, 2011

Graph (Figure 9) depicts that the level of urbanization is very different for different states of the Indian Himalayan region, varying from 50% to 10%. In the Himalayas, urban centers grow both in numbers and in size (Singh et. al. 2020).[cii] Growth of cities is attracting attention to the study of mountain urbanization as a separate epistemic category in the context of urban studies in India (see Negi et. al., 2016; Kovacs et al. 2019) Himalayan urbanization is seen in the context of the rurality and as the extension of the rural. Studies (see Mehra,2016)[ciii] show a strong dependence on rural agro-economy and social relationships on the scale of urbanization in towns such as Kullu given the history of many of these as market towns. Mountains are now studied beyond the lens of traditional understanding of natural fragility (Fort, 2015)[civ] and somewhat virgin spaces that are not used to human interventions (Price, 1986)[cv]. In this new understanding of mountain cities, the agency of space becomes an important factor in studying their socio-nature

(Swyngedouw, 1996). [cvi] As one question comes to mind, why do the world's water towers[32] have these spaces of scarcity? The issue of water scarcity becomes even more perplexing in the context of Himalayan cities. As per the Meteorological Centre, Shimla, the average annual rainfall in the city is about 1415 mm, with a monthly variation between 346 mm in July to 18 mm in November. To put it in perspective, the average annual rainfall in India is about 1200 mm. Despite more than average rainfall, the city has faced water scarcity almost every year since its foundation. This question is crucial because it has material significance with respect to the cost of water, which is among the highest in the country. It is also important to ask about solutions to water scarcity, particularly through infrastructural interventions. New water infrastructure projects that came after the water crisis in Shimla have generated public enthusiasm. These projects are seen as a panacea for water scarcity which raises the obvious question, when similar projects have failed to solve water scarcity why do we keep promoting the same interventions? Answer to this question takes us to the relationship between scarcity and production of urban space. The shift in the discourse surrounding Himalayan water from abundant to scarce also reflects the more recent leaning toward the commoditization of water as a resource. In the trajectory of commoditization of water through narratives of scarcity, one can see the construction of a "crisis" as the facilitator of this commoditization (Kaika, 2006).[cvii] But beyond the crisis events, commoditization moves slowly with the deterministic building of scarcity through the spatiality of the city. Lefebvre (1991)[cviii] shows how space is used as an instrument of capital reproduction. My research shows how in the case of Shimla, this reproduction is done through the creation of scarcity.

[32] Water from the Himalayan glaciers sustains 10 major river basins of Asia including Indus, Ganga and Brahamputra which is the source of water for more than 1 Billion people.

Materiality of senses

Discussion around mountain urbanization cannot be complete without understanding the affect memory creates in maintaining the spatial form of the hill cities. Memory and its relationship to urban identity have been explored in case of the post-war cities (Husukic & Zejnilovic, 2017)[cix] as single standalone spaces. But it also needs to be seen as part of urbanization in a region.

"Urban memory can be an anthropomorphism (the city having a memory), but more commonly, it indicates the city as a physical landscape and collection of objects and practices that enable recollections of the past and that embody the past through traces of the city's sequential building and rebuilding." (Crinson, 2005: xii)[cx]

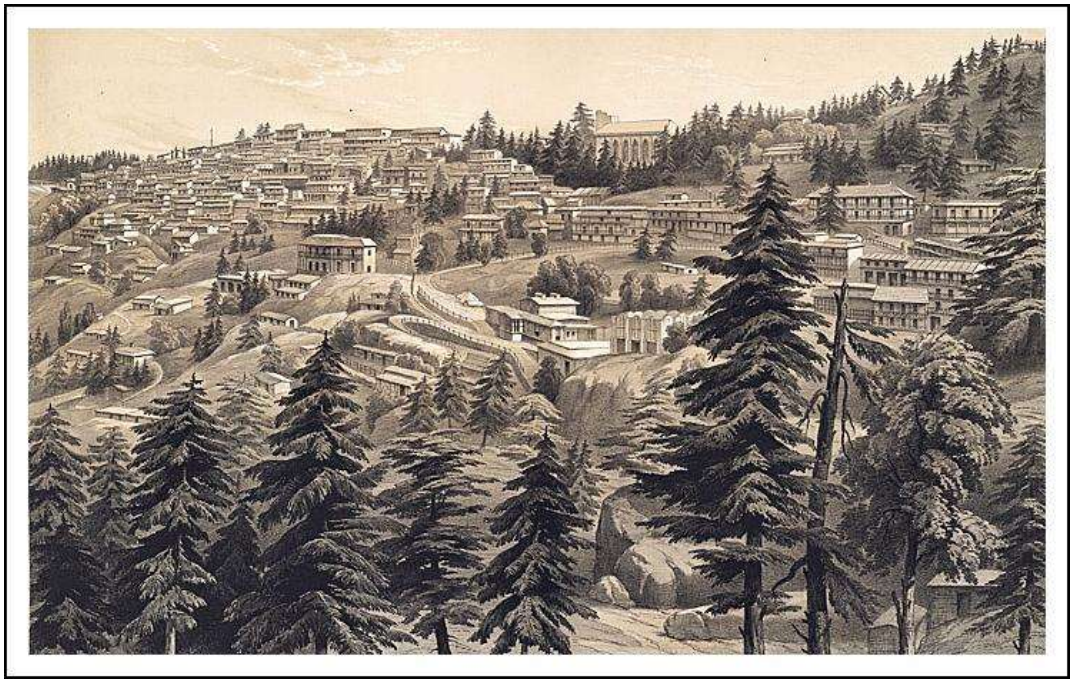


Figure 10 Lithograph of Shimla by Mrs. WLL Scott 1852[33]

Throughout human history, mountains have been associated with the mythical nest that connects heaven and earth. Vision of the Himalayas traverses between the sense of the sublime and a feeling of picturesque (Tuan, 1990, p.71).[cxi]

[33] The British Library. (2008). *Simla Suddur Bazaar, Racket Court, & Church. Sunrise*.

Shimla's image too varies among different people. On one hand, some people see a need for infrastructural interventions in the city, as one official mentioned that the experience of Bolivia inspired the Shimla ropeway project arguing “we should use the international experience to solve the city's problem and make it an attractive destination.” On the other hand, a resident of Delhi quips," Shimla is not a Hill station how it is supposed to be. It is too built up, too popular, too many people. They have put a lift there! A lift in a hill station." (Miles-Watson, 2020, p. 7)[cxii]. Divergent views about infrastructure are produced by a very different understanding of what Himalayan cities are supposed to be. I show through archival research how this Imagined urban experience and creation of the infrastructure for that experience has been a feature of mountain urbanization. The mountain towns in literature evoke a sense of escape from India's hot and dusty plains. The environment imagined here is of a particular kind, the one with a yearning for Europe rather than any connectedness with the locals. This yearning creates a hybrid form of nature that is also in variance with the expression of nature in the cities of Europe, in the form of urban gardens in industrial metropolises (Gandy, 2006, p. 64).[cxiii] Imagination of the mountain cities depend not only on the image constructed by the people inhabiting it, but also on the people who come there for other purposes like tourism and safety (Groetzbach,1988)[cxiv]. This imagination of the hill varies with the purpose of the people; for those who run away from the conquerors, the inhospitable access of the mountain is the desired quality of the region. Experiential elements play an essential role in forming the urban space (Tuan, 1977),[cxv] for example, the issue of access to the mountains would be drastically different for people seeking refuge and people going there for pleasure.

Taking forward the idea of Tuan (1990) on the relationship between experience and the notion of space, I look at mountain urbanization as a product of dialectic between imagined experience and the lived experience that enables particular material changes while dismissing others. The relationship between water and space is impacted not just by the infrastructural interventions that happen in the hill towns through funds from governments and international agencies, but also by the stories built around the water.

Spirits dominate the myths associated with water in the western Himalayas. These spirits, good and evil, act as guardians of water bodies and other natural resources (Sharma, 2007).[cxvi] The incidents related to drying of one water source and shift of people towards the different sources has been told through the myths associated with the angering of the Gods or revealing their secret abode. Shifting the lake goddess to the other side of the river because people threw cow skin on the lake in Chini town in the Upper Himachal shows how people cope and manage water scarcity in the region (Das, 2012).[34] [cxvii] The water in the hills has been associated with sacrifices; the myth of Champavati, a queen of Chamba, tells the story of this sacrifice. The new capital (Chamba) was suffering from water scarcity, so the King decided to build a water channel (locally called Kuhl), but Kuhl came into the dream of the King and demanded human sacrifice from the King's family. The queen was buried alive and, through this sacrifice, brought the water to the town and solved the water scarcity in the city (Bharati, 2001, p. 45).[cxviii] Suhi festival is celebrated every year in April to

[34] The story goes like that "The Kalis are offended when cow or an ox skin is put in any of the high lying lakes. When there is a great drought year the village deotas cause a cattle skin to [be] put in high region lakes and the Kalis, [in order] to purify the lakes, shower down rains. It is said that there was a lake above Chini village from which [there] gushed out water for the ample water supply of Chini and the villages near about Chini. On a drought year day, [in order] to make the Kalis bring down rain, a cow skin was thrown into that lake. [The] kalis did not make the sky rain, but the lake goddesses transformed themselves into two doves and flew off to the other side of the Sutlej River into Barang Forest [opposite Chini, on the left bank of the Sutlej on the northern aspect of the Kinner Kailash Range], where water gushed out just after the two doves sat down on the earth. The lake above Chini went dry and it is not ever likely to have it again [filled] with water. The fairies became very much offended here with the cow skin and left the lake forever." (Das, 2012)

commemorate sacrifice. These stories tell the challenges associated with water in Himalayan towns. Sacrifice associated with water tells the importance of these water bodies in preserving urban space and imbibes the culture of protecting water sources. Stories of these sacrifices of the ruling class for water also helped legitimize their rule.

Myths help in the development of the culture of the city, as they "influence social behavior on the basis that power is naturalized." (Wright, 2013, p.4).[cxix] Modern myths have also built the opposite image of hill towns as waterscapes. In movies like Black (2004, dir. Sanjay Leela Bhansali), Wo Kaun Thi? (1964, dir. Raj Khosla), urban space in the mountains is depicted as a space of misty heights, lush greenery, and torrential rain (Bande, 2009).[cxx] This image of water surplus cities in the mountains also creates apathy towards water scarcity in the mountains in people who are viewing them from afar. This apathy was also visible when the locals told the stories of guests who wanted to came to their houses during the peak of water scarcity in the summer season. Many locals have told me that most of the time, their non-local guests act surprised that there is a water problem in the city. Thus this romantic image of mountain cities is also responsible for the political apathy and inadequate interventions related to water. I will explore this further in the next chapters.

Critics of Yu fi Tuan's work argue that the production of urban space is founded on material relationships (Merrifield, 2013).[cxxi] Approaching the production of urban space through Historical Geographical Materialism brings out how socio-economic life has its specific dynamics of interrelations and context, leading to the production of particular externalities like the water crisis as its outcome (Benton, 1989, p.77)[cxxii]. But due to the absence of 'precise knowledge' beyond the colonial cities, the region's cultural history becomes a vital instrument informing its material development. Urban environments are

materliaze as physical spaces that are connected social and political processes, and cultural constitutions of its residents (Swyngedouw, 2004a).[cxxiii] Our understanding of space starts to be further nuanced when we include the sensory experiences. As Lefevebre argues,

"(Social) space is not a thing among other things, nor a product among other products... . It is the outcome of a sequence and set of operations, and thus cannot be reduced to the rank of a simple object... . Itself the outcome of past actions, social space is what permits fresh actions to occur, while suggesting others and prohibiting yet others.'' (Lefevre 1991, page 73).

The environmental aesthetics of mountain cities oscillate between the imageries of a past and aspirations of the future. This materializes in a spatial configuration, which often remains disconnected from the local present. There have also been cases of the revival of the local forms of architecture styles such as Kathkuni and buildings constructed through locally-sourced materials with sustainable energy and water use, but this is limited to hotels serving the particular aesthetics as a nostalgic commodity. So cities contain both these reproductions (Benjamin , 1935)[cxxiv] of a romanticized past and the present in all its 'reality.'

Environmental practices and their spatial form play a role in the articulation of the political (Loftus, 2007)[cxxv] from creation of the political discourse around citizenship rights to the formation of alliances demanding access to waters (Truelove, 2011).[cxxvi] Changing nature of urbanization and its social forms include changes in the ecological forms of the city. Therefore, it is essential to study the processes involved in the formation of Shimla's particular urban spatial ecology to understand urbanization and the water crisis.

Thinking through Political Ecology

"Environment reacts back on the Philosopher and imposes upon him a continual process of self-criticism." (Gramsci 1971, p. 350)[cxxvii]

The prevailing notion of the city as being the antithesis of nature (Ludwig, 1996)[cxxviii] creates a blindspot in studies on urbanization particularly for Himalayan cities where this difference is fuzzy. Ecology in urban areas becomes visible through morbid conditions such as the spread of diseases, failure of services, etc. Times of crisis thus become important moments to investigate the relationship between nature and urbanization. Be it the analysis of class relationship analysis by Engels (1845)[cxxix]or the new hybridities produced through the interaction between nature and the city (Cronon , 1991).[cxxx] The problem with this duality is that it does not consider the social and the natural processes happening together and sees it instead as two different kinds of forces with their own grammars interacting with each other. Therefore, epistemologically, this frame of analysis would always produce the notion of nature as the other when seen through the urban lens, with the threat of 'seeing one as virtuous and the other as evil.'[cxxxi] Therefore, the case study of a city such as Shimla is an exercise in breaking this epistemic determinism. The idea of the City in this region metamorphoses into nature, as we can see through colonial and touristy narratives. Development plan of Shimla assigns about 61% of the planning area as forest. Urban political ecology thinkers come from the assertion that nature and the city are not binaries but exist in a dynamic relationship (Harvey, 1994).[cxxxii] Swyngedouw(1997)'s conception[cxxxiii] of socio-nature intervenes in the problem of this binary relationship between nature and the city by arguing that both are interconnected. Advantage of viewing the relationship as interconnected is that it broadens our understanding of the issue of water access that

encompasses both nature and city. Thus, Shimla becomes an ideal site for understanding urban space through political ecology.

The UPE scholars explore power through the lens of the Marxist political-economic process (Cook & Swyngedouw, 2012)[cxxxiv] and bring into frames of analysis power structures like gender (Truelove, 2011), caste (Ranganathan, 2021)[cxxxv] , and colonialism (Simpson &Bagleman, 2018)[cxxxvi]. Urban space shapes the access to water and, simultaneously, it is also shaped by the access to water(Ranganathan &Balaz, 2015).[cxxxvii] There have been case studies that examined water disparities within cities (Anand, 2011)[cxxxviii] by framing water scarcity through the framework of power. But much of this literature has not considered historical and natural factors (deterministic factors) that inform the struggle for water. Through the case study of Shimla, I present the production of urban space as a site of continuous struggle between the colonial legacy and the post-colonial push toward urban transformation. As we will see in the following sections, this struggle of spatio-historical processes produces a precarious urban space. As the UPE literature is moving towards a post-structuralist direction by 'going in the city' (Truelove, 2011) to understand the everyday practices constituting the production of the urban space (Lawhon & Silver, 2014)[cxxxix], there is still a scope for the structuralist approach to understanding historical materialist processes, particularly in the small cities of the global south to understand the unique direction of the production of urban space. The production of urban space creates winners and losers according to their gender, class, and social hierarchies (Desfor & Keil, 2004).[cxl] Thus, the ecological transformation of space should not be seen as a neutral/organic process, or else events like the water crisis would only be considered as a natural part of the urbanization process, which is not the case.

Urban political ecology, as defined by Blaikie and Brookfield(1987:17),[cxli] combines the concerns of ecology and political economy through understanding the dialectical relationship between society and nature. Relationship between society and nature plays an important role and produces space. UPE advances the Marxist spatial thought of Lefevbre (1991)[cxlii] and Harvey (1996)[cxliii]by exploring the idea of the production of nature. Recent interventions in the field have brought in frameworks like Deleuzian (see Ranganathan, 2015)[cxliv] and Foculdian (see Rattu & Veron, 2016) [cxlv] which introduced the politics of power, citizenship, and space into the understanding of the processes making the socio-nature. There has been a focus on this interaction in the fuzzy spaces of wilderness, like villages, forests, mountains, etc., where humans have a 'visible' interaction with nature. Cities, on the other hand, are considered as the fiefdom of the people where nature is also produced through labor. Thus, the development of urban political ecology as a discipline problematize the boundary between cities and nature.

Urban political ecology has been further developed through empirical work (Truelove, 2011; Kaika, 2006)[cxlvi] [cxlvii] that has brought in multitudes of dimensions of spatial situatedness in the production of socionatures. But these works are also being ticked as promoting 'methodological cityism,' (Wachsmuth, 2013)[cxlviii] wherein ecological relationships are seen through vantage point of the city, whereas the structures beyond cities play a role in making of the relationship between people and nature. Globalization has connected the world so much that the future of water for Chileans can be affected by a Canadian teacher pension fund.[35] Along with the global changes that occur, city remains the space where these forces are materializing. "Though UPE understands the uneven

[35] Karunananthan, M. (2021, August 25). A group of Canadian teachers could decide the future of Chile's water supply. The Guardian. Retrieved January 10, 2022, from https://www.theguardian.com/global-development-professionals-network/2017/jun/12/chile-water-privatisation-canada-teachers

production of urban environments, spatially, socionaturally, politically, as a global process, the uneven 'urban environments' that are produced continue to be understood as discrete, bounded cities." (Angelo & Wachsmuth, 2015, p.21)[cxlix]

Delving into the notion of the cities as socio-natures, Harvey argues that there is nothing unnatural about the cities as production of urban space is part of the ecological process. If we consider everything as related in the world and then not include the physical environment produced through human labor, this is not the correct way of seeing the urban as produced through the socio-ecological process. Urbanization itself is the product of socio-spatial relations that produce the ecological transformation maintained through these very relations. (Harvey, 1996, p. 94)[cl] It is similar to Jane Jacob's[36] argument that urban environments are as natural as the pack of wild prairie dogs.

Duality of nature and society is critiqued through the concept of the socionatural transformation and the production of second nature. Lefevbre (1996)[cli] talks about the idea of 'second nature,' which is the urban space. He terms it second nature because urban space has been created over nature that has been destroyed, and nature makes way for this produced space. Lefebvre's explanation of second nature, like Harvey, sees urban as the embodiment of capitalist social relations. Second, nature is the ensemble of social institutions that regulate the exchange of commodities (which here is nature itself). Lefebvre argues that the urban environment is socially produced, but this second nature argument does not consider the nature produced beyond the urban, as we can see in case of Himalayan urbanization. William Cronon (2009)[clii] argues that even the first nature has a

[36] Barnet, A. (2018, March 23). Rachel Carson, Jane Jacobs, and the Tumultuous Summer of 1962. Literary Hub. Retrieved March 5, 2022, from https://lithub.com/rachel-carson-jane-jacobs-and-the-tumultuous-summer-of-1962/

value that exists regardless of labor, and its value precedes the commodification process. Labor is producing value, but there is some value in nature itself, as grasslands are transformed into a wheat field by labor, but there was an intrinsic value in the grassland itself. Here capitalism is seen as a set of practices involving the transaction of goods and services between the country and the city rather than an ideology of which people are conscious.

Thus, the city (Chicago) was formed when the ecological and economic forces came together as "a single market, a single geography that spanned much of the interior of the continent." Flow of natural commodities like timber, gain, and water builds the connection between the countryside and the city, which in turn reproduces countryside in the image of the city "temples of commerce that were also, less obviously, mausoleums of landscapes vanishing from the city's hinterland... Behind each urban structure were the ghost landscapes that had given it birth. In sinking its roots into the western soil, the city was remaking the countryside after its own image." (Cronon, 2009, p. 263)

Transformation of nature into urban space can be seen through the lens of urban metabolism, which considers the transformation of nature into a commodity through labor(Foster, 1999).[cliii] This concept was further extended to connections that produce urban and nature through infrastructure (Gandy, 2004).[cliv] The contemporary ecology of cities is rooted in the forces of urbanization, like the flows of capital and commodities. Geography of flows tends to expand as resources are exhausted in the city, creating an antagonistic relationship between the city and villages (Foster, 2000).[clv] These flows have been influenced by the historical spatial shifts, as we will see through the trajectory of Shimla's growth. The production of socio-nature is contingent upon the social power relationships.[clvi] The

'discursive production of nature as a source of crisis' (Swyngedouw, 1996) has been a grand narrative on which the hydraulic relations within Shimla are constructed. The socio-ecological processes during the colonial period have made the city's urban future historically produced and contingent. Although the impact of processes cannot be the same in all cities in global south and this unevenness is quite visible when we compare the experiences of large coastal cities like Mumbai (Anand, 2017), Trivandrum (Ganapathy &Narayanan)[clvii] , or the small and medium towns in the hinterland see Kundu & Chatterjee, 2021; Roberts et. al. ,2013).[clviii] [clix] Still, even an acknowledgement of the vastness has mostly ignored the unique locationality of Himalayan urbanization. Therefore, my research attempts a relook at the vocabularies of urban political ecology to understand the relationship between nature and society in the Himalayan region. Harvey says in context of the idea of nature,

> "Western discourses regarding the relation to nature have frequently swung on a pendulum between cornucopian optimism and triumphalism at one pole and unrelieved pessimism not only for our powers to escape from the clutches of naturally imposed limits." (Harvey, 1996, p.149)

Both extremes are products of the externalization of nature from social life. This duality is visible in the urban space where the city, like Shimla, continues to have the simultaneous gloom of water scarcity and the euphoria around technological optimism. But in both cases, the result is a push towards the deepening of an extractive regime of capital through a push towards infrastructure development. Transformation of nature articulates itself through commodification, as can be seen in how necessities like water are turned into commodities and, in its ultimate fetishization, get traded in the speculative markets.[37] The tag of the most

[37] Shukla, N. (2021, August 6). Water is Now Being Traded as a Commodity Amid Fear of Scarcity. Earth.Org. Retrieved September 30, 2021, from https://earth.org/water-trade

expansive municipal water of Shimla and sense of pride associated with it shows how power relationships have been internalized in this commodification of nature.

Making of the Olympus

"Created ecosystems tend to both instanciate and reflect, therefore, the social systems that give rise to them, though they do not do so in non-contradictory (i.e., stable) ways." (Harvey, 199, p. 185)

"If one was told the monkeys had built it all, one could only say, what wonderful monkeys; they must be shot in case they do it again." Viceroy Edwin Lutyens on a visit to Simla in 1913 (Kanwar, 2003, p. 69)

Every society tries to modify its surroundings in the image of itself (Lefevbre, 1991, p. 31) Himalayan region, with its vastness, appears to be a 'permanent fixture' trying to 'defy easy human control'(Tuan,1990,p. 70) Production of urban space in the region tends to represent the negotiations with these two opposing forces. In the context of Himalayan urbanization, favorability in terms of location of the cities has changed. Precolonial cities like Rampur Bushahr started as the expansion of villages with these cities as in the case of Nahan (capital of a small princely state called Sirmour in the agriculture as the primary economic activity. Thus, their location was closer to rivers, mainly in valleys. Later, with the expansion in the size of hill states, need for timber led to the emergence of new cities on the higher ridges closer to forests(Kanwar, 1999, p. 24)[clx] Even in Shivalik region of Himalayas), construction of lakes was emphasized to ensure water supply. Attempts to create a city on the ridge that was dependent on water supply from the rivers failed miserably, as was the case of Kalyanpur the new capital of the Bushahr kingdom, which was

abandoned due to the water shortage as local water streams could not satisfy the needs of water due to their vulnerability to weather cycles (Kanwar, 1999, p. 86). Therefore, building cities by going against the local geographical considerations tends to have disastrous consequences. Dominance is the central explanatory variable of colonial cities, unlike other urbanization models (King, 2012).[clxi] This dominance is of varied types, such as environmental dominance, spatial dominance, etc. This dominance influences the form of the city. In the case of a Himalayan city like Shimla, the dominance tries to override local geographical considerations.

Traditional settlements are in flatter regions with proximity to water and abundant sunlight (Kumar, 2013).[clxii] As opposed to such vernacular spatial practices, Shimla is designed not as a welcoming liveable city, but as a Mount Olympus inaccessible to people living around it. But these very relations of domination provided the differentiated environment essential for its vitality (Swyngedouw, 2004). Domination in Shimla was not only about the spatial form, but also about the continued maintenance of this form. From barring natives from accessing the mall road during certain time of the day, to imposing restrictions on the number of houses owned by the native royals through price control and outright prohibition in order to maintain racial hegemony at the upper region of Simla. Hill stations became urban many years before they met the criteria for the notion of urban. Even the journey to the city was filled with the idea of racial differentiation, as the route to Simla by British officials was different from the paths used by locals, leading to resistance from porters and, in some cases, their absconding (Alam, 2008, p. 112).[clxiii]

Beyond the perceived health benefits of the space and similarity of climate with the UK, there was also strategic significance of the site. John Lawrence (Viceroy of India 1864-69), in

particular, was keen to keep Shimla as the summer capital as opposed to other hill stations like Darjeeling.

He argued: "Here you are with one foot, I may say, in Punjab and another in the northwest provinces. Here, you are among a docile population and yet near enough to influence Oudh. In other words, around you are all the warlike races of India, all those on whose character and power our hold in India, exclusive of our own countrymen, depends." (Barr, 1978, p.23)[clxiv]

According to British MP Charles Dilke, "The climate of Simla is no mere matter of curiosity. It is a question of serious interest in connection with the retention of our Indian Empire. Simla gives vigor to the government and a hearty English tone to the State papers issued in the hot months." (Dilke 1868) [clxv]

The production of urban space in the hills attempts to create a difference between colonizers and colonized (Stoler, 2002). [clxvi] Uniqueness of the urban space of Shimla is that it was created by the society non-native to the place in order to fulfill its desire to invoke the nostalgia of 'home.' Thus, this urban space was disconnected from the locals. Space was conceived so that colonizers also have home advantage over colonized. Chatterji (2003)[clxvii] argues that the arrangement of space, i.e., British living on the ridge and natives below, represents a method of segregation exemplifying British power. Domination of urban space was articulated through its geography and evident in access to services like water. Archives show how the idea was to provide water to those on the ridge and to create exclusion by removing people from the water catchment areas. Outbreaks of diseases were blamed on the human contamination of the pristine water sources, whereas these people had always lived in this area. Instead of blaming congested living conditions in the city and temporary movement of the massive labor force to construct the Kalka-Simla railway line, which led to bouts of cholera in the city, the Simla improvement Report 1917 recommended that the

people should be removed from the forest, although without impacting the timber supply system. Early urbanization in the region was fuelled by the timber trade. This trade was so prominent that it had changed the ecology of the region, with princely states such as Keonthal having no old Deodar trees left.[38] British rule greatly influenced the ecology of the region. Local forests were cleared for the needs of the city. Simla consumed about 85000 cubic feet of timber per year, and during the construction boom of the 1880s, it reached 250000 cubic feet per year. [39]

Built space in Shimla was dependent on the terrain. First construction began on the sunny and milder slopes of the hills. But there was no regulation, and choice depended on the individual home owner. Municipal body felt that this system was not sustainable. Thus, the colonial government intervened and regulated the construction by taking over roads already constructed by private property owners. To solve the housing deficiency for the lower and middle bureaucracy, the government started to settle European Clerks on Kaithu and Indian Clerks on the Cart Road. It ultimately restricted any new construction in the main town, Kaithu, and Lakkar Bazar by 1904. But this regulation led to a jump in the population outside the municipal limits in the suburbs like Sanjouli and Kusumpti, turning them into new urban centers.

Urban contradictions of Simla can be summarized in these lines of the Annual report of the Simla Municipality of 1877-78,

"If you want to improve Simla, knock down the Bazaar. The removal of the entire bazaar at a very moderate estimate of the compensation would cost sixteen lakh rupees. When you have removed the present native population, where do you find a more suitable location for

[38] Punjab states Gazetteer(1910), Keonthal, p.9

[39] Report by Lalla Chajju Ram, municipal forest ranger Simla, 5 September 1894, Simla municipal Proceedings, vol 6, 1893-94.

the native inhabitants, who are essential to the existence of Simla?" (Kanwar,2003, p. 60)[clxviii]

To give a context, the majority of the Indian population resided in parts of the dense Bazaar Ward area. The rest of the city is classified as the Station Ward, which contains the Villas of Europeans and Wealthy Indians (Sharma, 2020).[clxix]

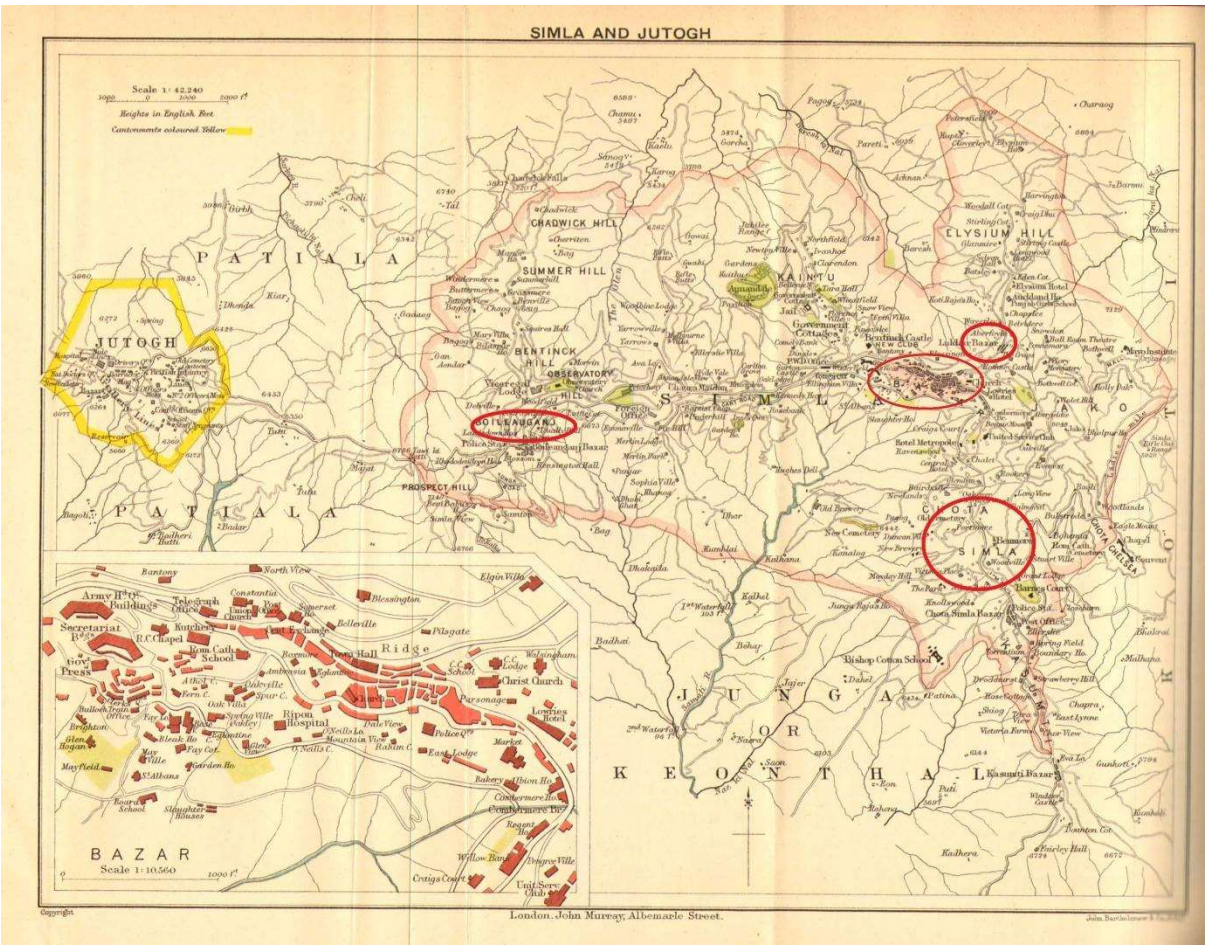


Figure 11 Map of Shimla showing Bazar Ward (courtesy: British Library, John Murry)

Simla, Shimla & possibly Shyamla[40]

"Because of the difficulties its terrain places on transport, the Himalayan region as a whole has been much slower to change than other places. The people who live here are governed by the seasons more than elsewhere." The 14th Dalai Lama (2009, p.3)[clxx]

Shimla was constructed for Europeans to evoke nostalgic memories of Europe (Bhasin, 2011)[clxxi]; this made Shimla an attempt to mimic a landscape shaped by generations of action that had occurred on the other side of the world (Miles-Watson, 2012).[clxxii] Since its inception, the city has been living through the same fate where the forces that do not inhabit the space tend to change its landscape. After independence, Shimla's fate was tied with the fate of Himachal Pradesh. State that looked at horticulture as a viable path for economic prosperity. Culmination of policies in this direction led to what some scholars have termed the "Apple Revolution." (Vedwan, 2008)[clxxiii] High value nature of horticultural crops such as apples, combined with the implementation of land reforms in the 1960s and 70s (Mehra, 2017),[clxxiv] led to prosperity in the hill districts like Shimla. It reflected in the increased urban growth of Shimla, which is now the main urban center of the region. Prosperity of the hills came to the town through investments in real estate and the

[40] Sharma, A. (2018, October 24). Himachal Pradesh CM rules out name change for Shimla amid uproar over VHP demand. ThePrint. Retrieved December 10, 2022, from https://theprint.in/india/governance/himachal-pradesh-cm-rules-out-name-change-for-shimla-amid-uproar-over-vhp-demand/139207/

movement of people to access better services such as health, education and employment. This change in demography and political situation of the region was reflected in the reclamation of identity at urban level.

Simla became Shimla in 1983; the name change represents the changing power dynamics of the region. Simla to Shimla was a postcolonial project of reclaiming the space. Simla was already a city inhabited mainly by Indians by 1940s (Kanwar, 2003)[clxxv], but the space was discursively a British space. The name change in India is also associated with identity politics in the garb of anticolonial identity. Argument raised by the Tamil Nadu government to change the name of Madras to Chennai was that it would free the city of its colonial corruption (Arabindoo,2008).[clxxvi] Name change politics in rest of the world has followed two trajectories, Either the constitutional struggles that result in renunciation of colonial identity, such as in case of the Democratic Republic of Congo, or the junta changing the names of places in Myanmar in order to legitimize its rule through identity politics.[41] Change in urban identity has occurred through a discursive change in the case of Shimla. There is a history of renaming urban landmarks, such as the Ripon hospital was renamed by the BJP government in the early 1990s as Deen Dayal Upadhyay(DDU) Hospital. This attempt to create a new identity for landmarks is also an attempt to establish a particular identity within the fabric of the city even if it is forced. Recent attempts by right-wing groups to rename the city Shyamla drawing upon the stories of Shymala Devi is part of this attempt to further ingrain religious identity in urban fabric. There has been resistance to this change by a multitude of actors arguing against the change from the civil society which is worried about too much tweaking of the city's identity to the local tourism industry which doesn't

[41] BBC News. (2011, December 2). Who, What, Why: Should it be Burma or Myanmar? Retrieved March 15, 2022, from https://www.bbc.com/news/magazine-16000467

want to lose heritage city identity. Change also finds resistance in everyday life as one sees that local buses still use Ripon Hospital as the name of the stop instead of DDU. Even in colloquial conversations, names of the places oscillate between their colonial predecessors and the new ones. The contestation of the identity of Shimla can be summarized in the following narrative.

"The last of the rickshaw pullers, Malu Ram and Devi Ram from district Bilaspur, became coolies and could be seen sitting outside the Grindlays Bank building (now ICICI bank), in all weathers until the 1980s. They were the remnants of an age where courtesy and politeness were imparted together with humiliation and domination. Shimla has lost much of that colonial style, its genteel charm, finesse, and understated elegance, as well as prejudice. They have been replaced by exuberant confidence and joie de vivre." (Paul, 2009, p.64)[clxxvii]

Municipal governance in Shimla faced a period of institutional turbulence after the independence which lasted till 1980s. During this period, construction laws were bypassed, and after the city was declared capital of HP, the speculator growth created havoc in the city. No slope was left untouched. People have also questioned the government's decision to make Shimla the capital city.

"No plans were made; no effort was made to consider whether this choice of capital would benefit the state. . The laws and their implementation got lost between the politicians and local developers, leaving even the administrators with precious little to do." (Dutta,2010)[clxxviii]

Institutional turbulence is reflected in the investment in water supply infrastructure (Fig 12).

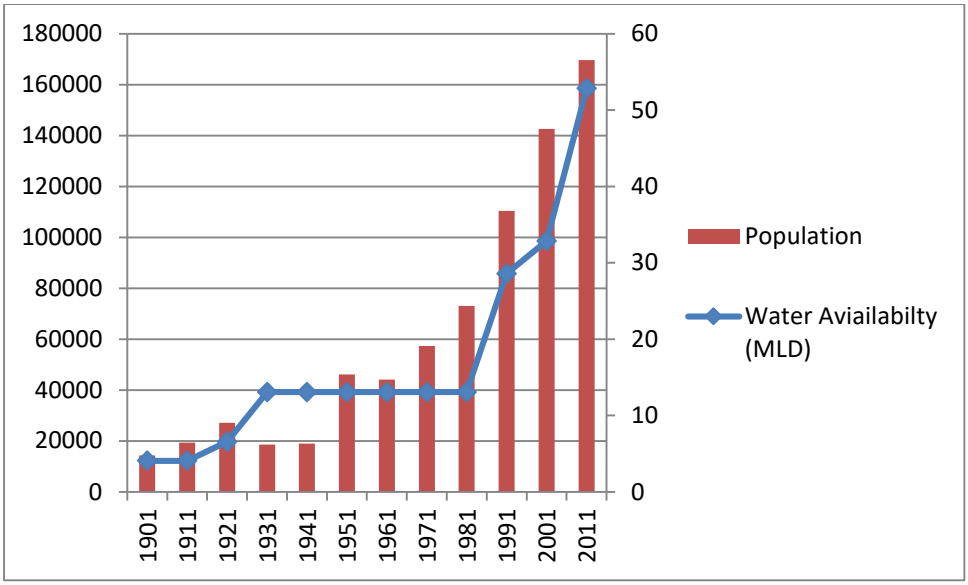


Figure 12 Decadal population and water supply capacity (Source: Municipal Corporation Shimla)

Turbulent period of municipal governance lasted until the position of Shimla became fixed as the capital of the newly formed state of Himachal Pradesh in 1966. A former deputy mayor said that after the precarious nature of the municipal governance after independence, it got some stability after the Shimla Municipal Corporation would again get many of its powers in 1984.

Shimla's first DP (Development Plan) came into existence in 1979, which was for 2001 (As of January 2022, the new development plan is yet to be published). Development plan helped articulate the vision of the new city, while still bound to the grandeur legacy of the old Simla. "Shimla for pleasure and site seeing, it is imperative that areas with predominant green cover are to be preserved" (DP page 30). "Respect for the environmental paradigms in development planning can make the state capital not only perform its political function, but also continue to act as an attractive location for national and international tourism" (DP page 32). "There is a nostalgia of the British time, Shimla, the premier British town, popularly known for its cleanliness, natural environs, heritage masterpieces, scenic beauty, and commanding view of the mighty Himalayas has to be saved at any cost from increasing

pollution, environmental degradation, and ruin" (DP page 41). On the operational side, Clause (iii) of sub- Regulation (3) of Regulation 10.4.4 of the DP stated, "The original facade shall be maintained. The facade shall have the admixture of wood, stone, glass, slate, and tiles as in the original building. If natural materials are not available, the alternative ones shall be given the same touch."

Thus, an attempt is made to get back to the city's old glory of a particular imagination. This imagination feeds into the colonial determinism of the post-colonial city. Another document that has created a particular image of the city is the order of the National Green Tribunal (NGT)[42] on Shimla. The petitioner argued that 90% of the core city is built on a slope above 60% without considering construction norms, making it vulnerable to natural disasters. NGT virtually created Shimla as a city within a forest by banning construction in the city's core area. NGT opined that further construction would lead to unmanageable pressure on the local urban body to provide for enhanced water supply & wastewater collection and management facilities. These issues also need to be fully addressed before considering permissions for further construction in Shimla. According to revenue records, the green belt of the Shimla Planning Area covers 414 ha, out of which 78% of the area is either under 'forests' or 'open area,' and the remaining 22% is a built-up area. About 42% of the total green area is under forest cover and 36% is the open area occupied by shrubs, bushes, grasslands, etc. The discourse around regulation emerging in the city is attempting to remake Shimla into a colonial artifact. This artifact, it is arguedneeds to be preserved in its current form at any cost.

Post-colonial Shimla and its identity are perceived by many as the ruin of concrete which is frozen in her past maintaining an unstable status quo. On the other hand, locals

[42] ORIGINAL APPLICATION NO. 121 OF 2014 and ORIGINAL APPLICATION NO. 505(THC) OF 2015

argue that we cannot go backward and unmaking the already existing things would anyway be more harmful and would lead to environmental damage. A news report shed light on the divide between people's aspirations on how they see the city and changes necessary for realizing those aspirations. On one hand, environmentalist groups want to preserve the current form of the city, as any change from this point would lead to further destruction of the environment. In contrast, other groups see the intervention necessary to rebuild the city to create more resilient infrastructure as well as maintain economic activities. This group argues that if the core part of the city is kept in the current form of dilapidation, the city will expand in the horizontal direction. This will ultimately cause more environmental damage as the construction will happen beyond the city limits which is not regulated by the current municipal regime. There lies the contradiction of mountain urbanization that materializes in water scarcity, as explored in the next section.

Scarcity and the space: A Contoured ecology

"Before the British came, Simla was a marketplace like many others in the region. It was never supposed to be a permanent habitation, but Britishers made it one, and this causes problems like water shortages in the city." (A resident of the city)

Understanding of water scarcity goes beyond the idea of poor infrastructure in third-world countries and moves into the territory of something which is ingrained within the nature of urban space. Water crisis events from Cape Town to Flint, USA, and back home in Chennai seem to be different kinds of avatars of water scarcity. Still, all of these events point toward a missing connection in the relationship between urban space and the notion of scarcity. Only focusing on urban growth as a causation of water scarcity misses the picture

altogether. Cities are becoming the sites of the metabolisation of the global in the local. Cycles of production and consumption in the city now encompass the whole planet, even the footprint of the urban water cycle moves far beyond the urban boundary. This expansion of the city's footprint intertwines water and city in a complicated relationship. "Urbanization can indeed be viewed as a process of contiguous deterritorialization and reterritorialization through metabolic, circulatory flows, organized through social and physical conduits or networks of "metabolic vehicles. " (Heynen et.al., 2006, p.21).[clxxix] Interrelation between water and city is produced through the relationship of the scarcity of space and resources. Water towers of India (the Himalayas are referred to as the region's water towers) having the temporal and spatial moments of water scarcity seem ironic. But this represents an alienation of nature where it becomes irrelevant where the city is located. For example, the Renuka Dam[43] would provide water to Delhi, located about 400 km from the city. Within Shimla, urban space is produced through deterritorialization by the logic of maintaining circulation . Scarcity legitimizes this process, as was argued during colonial times, water charges in Shimla have been intended not as a revenue instrument but a deterrent to the usage (Simla Improvement Report 1917). There have been studies on water scarcity in mountain regions that focused on the specificity of the region in terms of the economic and political structures that have emerged in Himalayan cities (Shah& Badiger,2020).[clxxx] But scarcity has preceded these structures, as we have seen earlier through the example of Chamba and Bushshahr.

[43] This dam in Himachal Pradesh will prove a boon for Delhi's water crisis:5 points | Mint. (2021, December 26). Mint. Retrieved March 9, 2022, from https://www.livemint.com/news/india/this-dam-in-himachal-pradesh-will-prove-a-boon-for-delhi-s-water-crisis-5-points-11640495167471.html

Water and space in hill towns are deeply intertwined; the routes followed by the people are generally parallel to the water flows (Shankar, 2012).[clxxxi] Flowing water becomes part of the people's daily experience in the mountains, as the places of congregation in the city are located in close proximity with water sources. In areas with steep slopes, water sources become a community space, especially for women, as they gather around these streams to hang out. I heard childhood stories of ghosts present near the water bodies that come to life at night. The relationship between people and water changes when water sources move away from the habitations, as these streams lose their utility. The shift in the nature of water also changes the relationship between space and people.

Spatial nature of water saw changes throughout the history of Shimla. Reproduction of space was enabled by the notion of water scarcity. Unlike the popular belief in the city that water scarcity is the product of the city's uncontrolled urbanization, city's water scarcity became a trope in the colonial discourse in an attempt to control more territories in the region. Water scarcity produced the despotic regime. Gazetteer records,"In recent years, the water supply has been inadequate to the needs of Shimla."[44] Control over water catchment went beyond the issue of water access. Shimla municipal president demanded complete control of the catchment area from the local rulers in the letter dated 7th June 1895 to the Deputy Governor of Panjab. Arguing that it would ensure better management of water as through this control, the municipal body can impose its bylaws necessary to conserve this area. This situation emerged when the daughter of the local ruler (from whom the British leased the site) went into the forest to take some timber. The local forest guard

[44] Punjab district Gazettes volume 8 A district Simla, 1904

arrested her, but the ruler's soldiers assaulted the guard and freed his daughter. Under the guise of essentiality, access to water leads to a step towards total control of the region.

Control of water also meant dispossessing native residents of their water rights, mainly related to their livelihoods like water mills and irrigation. In the situation of scarcity between 15 April to 14 July every year, water sources in the region (mainly Nauti Khad and all its tributaries) would be entirely controlled by the municipal body, and there would be no diversion to any other group. Continuing the colonial legacy, this agreement was formalized between the Chief Commissioner HP and the Municipal Committee Shimla in 1948 for ten years. Thus, the jurisdiction of the Shimla Municipal Committee impacted the lives of people who do not participate in its functioning and for whom the municipal government had no accountability. The Simla improvement report of 1917, recommended that there should not be any human habitation in the catchment area except for people working in orchards and for water supply. Report justified it by arguing that people lead to contamination of water. In order to keep water sources free from contamination, the health officer of the municipality has proposed the removal of the orchards but this proposal was not approved by the Panjab government. They justified their decision by arguing that the forests are essential to protect the water catchment. Although the provincial government was generating revenue from forests and orchards at that time, it seems more plausible that both sides used water contamination to push their own agendas. According to the report, ultimately it was decided that sanitary needs superseded revenue needs, and thus supported the municipalities' view. Although this recommendation just remained on paper. The NGT appointed committee also had similar views in 2017,[45] which argued that the

[45] *Yogindra Mohan Sengupta v Union of India Ors* [2017] 121/2014 (NGT).

catchment degradation is happening due to anthropogenic activities such as the collection of fuel and feed for grazing, which needs to be stopped immediately.

Scarcity regime went beyond the quantitative dimension of availability. Cholera outbreak in the region was an important factor in the selection of the water source. With the whole hullabaloo around the water purification technologies, main concern remained the quality of the water at source. Source is still attached to the supply, which this technological regime wants to invisiblize through the technocratic intervention of the piped water. Thus, the Simla Improvement Report, 1917 asked for the complete control of the Chair catchment area in line with their recommendation in the Simla catchment area. Report also discusses the cost of fencing the whole catchment area to remove people from the catchment area. Major EL Perry suggested that people living in the catchment area be removed to prevent cholera, arguing that if they were infected with cholera, they would risk contaminating these small streams.

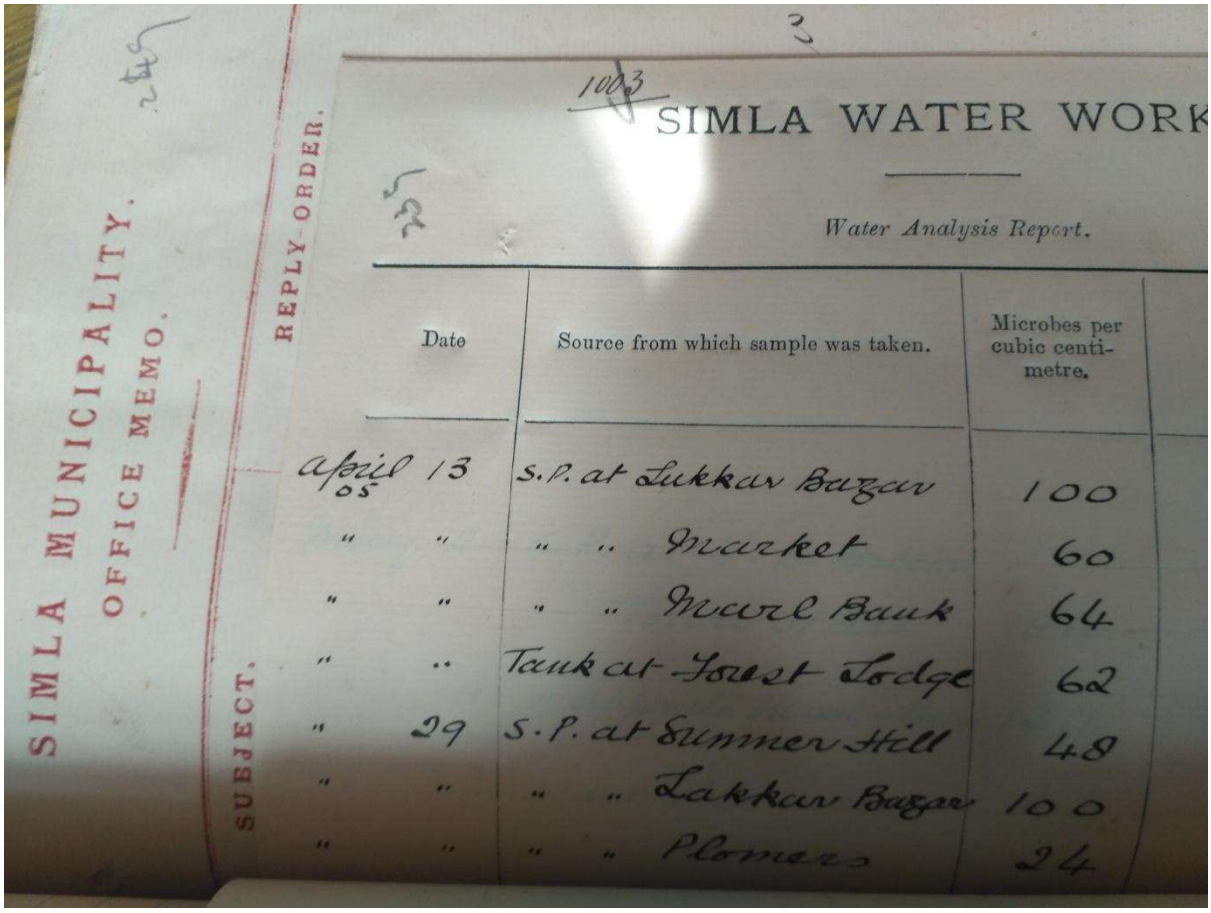
The focus of the policy in Shimla until now has been the same, supply has been a priority in the policy documents and narratives through the government, and the distribution is generally considered secondary and is assumed to be just a matter of technical tweakings.

Emphasis on the discourse around water availability creates a blind spot in terms of water access; when we ask people living in certain areas that experience shortage of water pretty regularly, the question of overall supply becomes irrelevant. Water availability has influenced the spatial pattern of city. Inadequacy of Shimla's water has affected the spatial pattern of the population. First houses were built on the ridge taking into account the water supply from the Jakhoo Hills. Even laborers were moved north towards the hills to ensure

that they could not access the municipal supply and arrange water directly from the streams.[46]

Inequality in terms of water quality can be reflected in the presence of microbes in water at different locations in the city.

[46] Latest Telegrams. (1884, April 17). *The Times of India*.



SIMLA MUNICIPALITY.
OFFICE MEMO.
REPLY-ORDER.
SUBJECT.

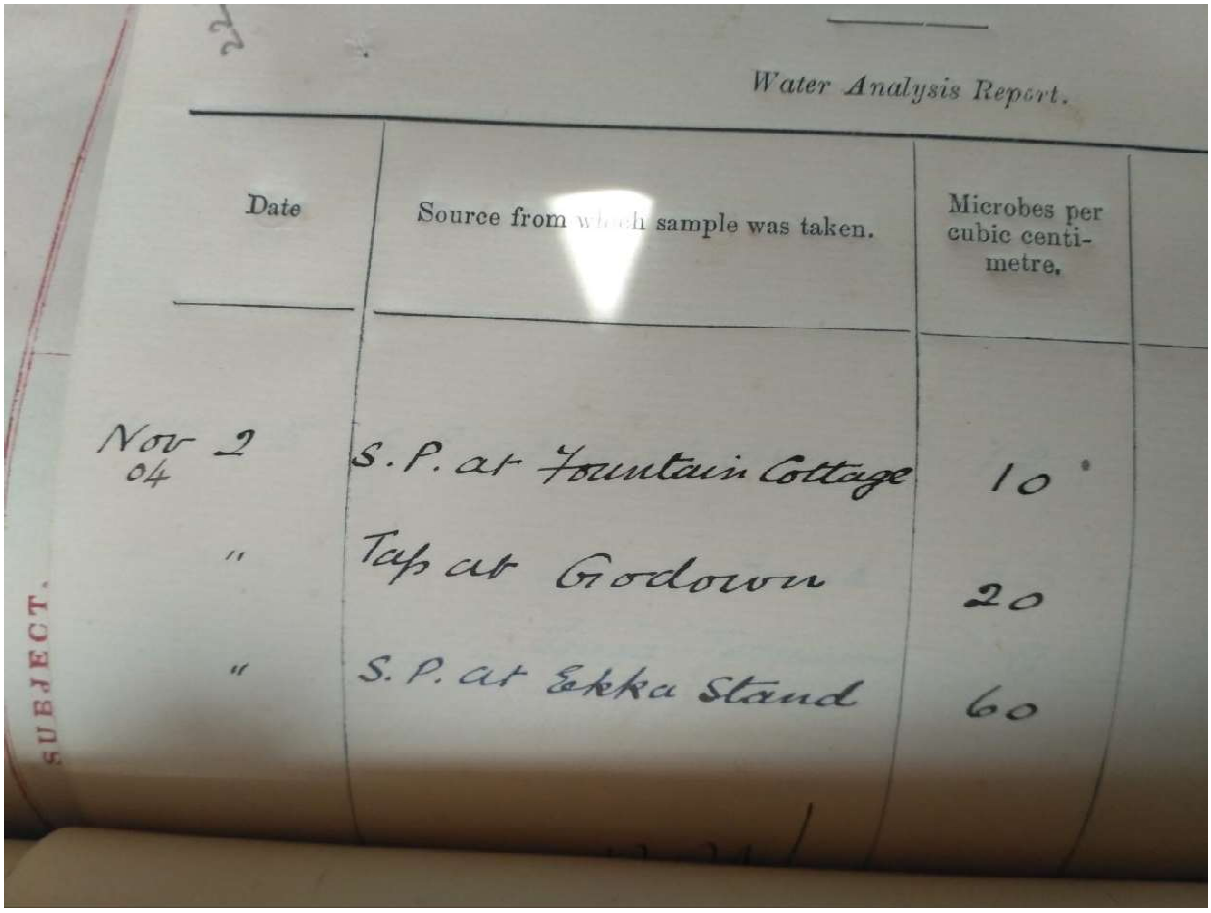
1003

SIMLA WATER WORK

Water Analysis Report.

Date	Source from which sample was taken.	Microbes per cubic centi-metre.
April 13 05	S.P. at Lukkar Bazar	100
" "	" " Market	60
" "	" " Mall Bank	64
" "	Tank at Forest Lodge	62
" 29	S.P. at Summer Hill	48
" "	" " Lakkar Bazar	100
" "	" " Phoenix	24

Figure 13 Water quality Shimla 1905 (courtesy Himachal State archives)



Water Analysis Report.

Date	Source from which sample was taken.	Microbes per cubic centi-metre.
Nov 2 04	S. P. at Fountain Cottage	10
"	Tap at Godown	20
"	S. P. at Ekka Stand	60

SUBJECT.

Figure 14 Water quality Shimla 1904 (Courtesy Himachal State Archives)

Although water came from the same source and was distributed through the same network, there was a considerable difference in water quality. From the names of places in Figure 14, it is obvious that the water quality differed with the economic and racial status of the users. In this case white property owner of the fountain cottage to the rickshaw pullers at the Ekka stand were getting different water from the same source.

In 2016, Shimla faced its worst outbreak of Jaundice in recent memory, with more than ten deaths and approx 1600 people contracting the disease. Spatial analysis of disease spread shows that the worst victims of the outbreak were located at most vulnerable places in the city. The map (Figure 8) shows the spread of the Jaundice outbreak in 2016. There

have been similar outbreaks previously, like in January-February 2007, where 450 people contracted Jaundice in and around the same region (Chobe & Arankalle, 2009).[clxxxii]

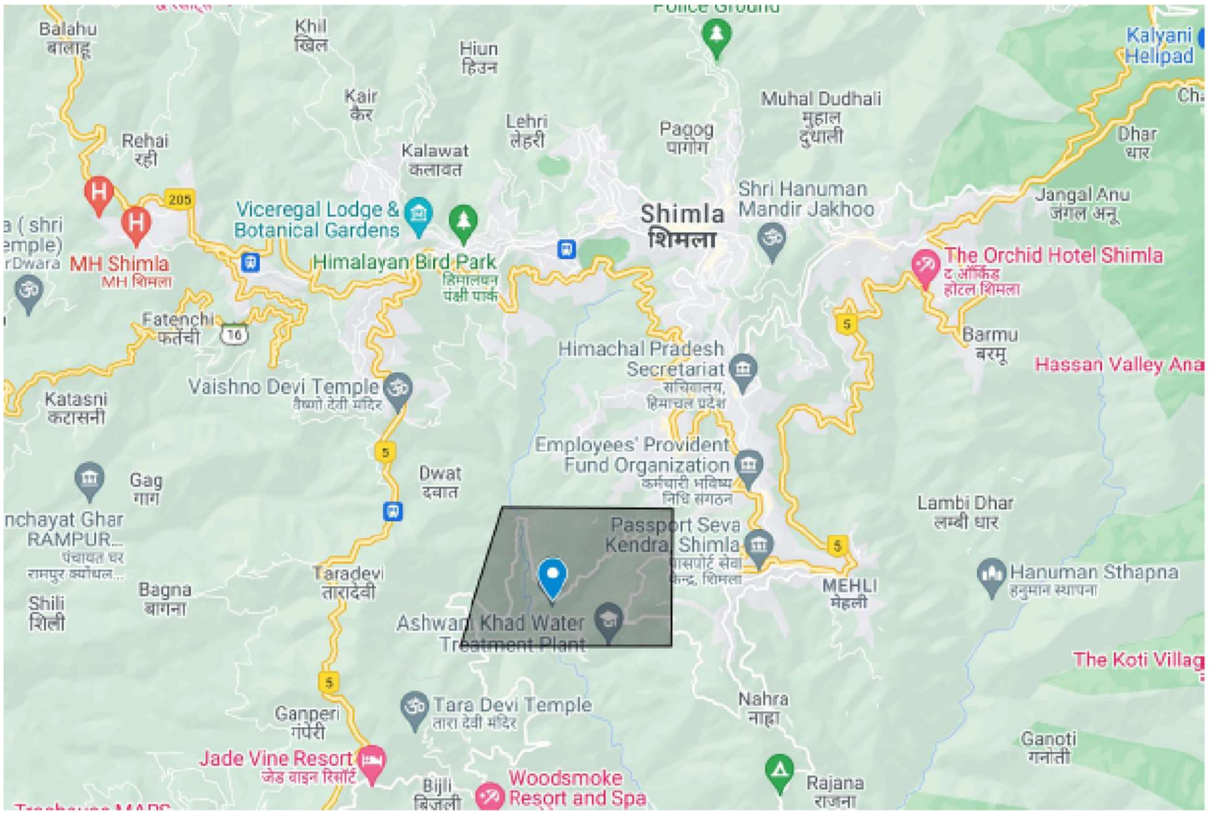


Figure 15 Concentration of Jaundice outbreak (2016) (Tripathy et.al. 2019)[clxxxiii]

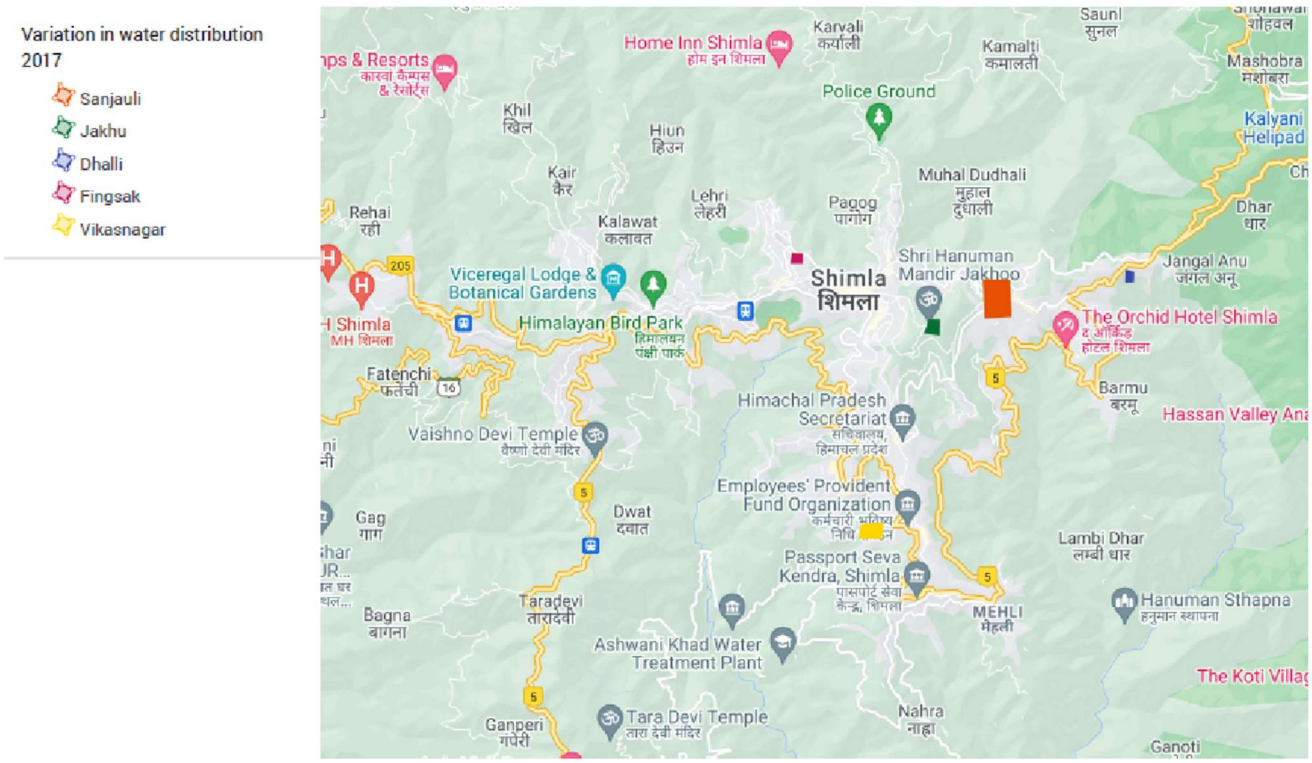


Figure 16 Location of various wards in Shimla (Source: Author)

DMA(district metered areas)	Duration (hours)	Availability
Sanjauli	4	Alternate
Jakhu	8.5	Alternate
Dhalli	6.5	Alternate
Fingsak	3.5	Once in 3 to 4 days
Vikasnagar	8	Alternate

Figure 17 Ward wise water inequality Source: State Annual Action Plan 2017

Not just the qualitative availability of water, but also the quantitative availability of water, has spatial undertones. Variation in the availability of water is the negotiation between the region's geography and the socioeconomic profile of its inhabitants. Shimla's inadequacy of water has influenced the spatial pattern of the population. The first houses were built on the ridge keeping in mind the water supply from the Jakhoo Hills. And now, the engineering regime of the neoliberal state is trying to expand the piped water across the whole space. The idea of scarcity enables these extractive engineering regimes, which

create a society of control (Deleuze,1992)[clxxxiv] wherein even those who were earlier using natural water sources seek to disconnect from the stream and aspire to be part of this extractive regime. Cronon (1983)[clxxxv] showed that the colonial institutionalization of land and the ecological transformation that emerged from it made radical changes in the way of life of people. On asking the question of why they did not try to take water from the local streams instead of waiting for tankers during the water crisis, one resident of Shimla who moved from the Trans Giri region of Sirmour to the middle-class neighborhood of Sanjouli told me," *Hum gaon mein pani Khale se bharte the, par ye to sehar hai."* (We used to fill water from the village's local streams, but this is the city.) On the other hand, in Krishna Nagar, an impoverished area of the city, I saw women using the water of the streams to clean and wash even when municipal water was available, and they told me that they had been doing it forever. City creates a sense of expectation, so the question of taking water from the streams becomes not a question of water availability but also of internalization of the expectation from the urban space based on the social hierarchy. This conversation shows the difference between idea of rural and urban as people behave completely different in their everyday practices when inhabiting these two spaces as opposed to the Lefevbre's(2003) notion of the "complete urbanization of society" where there will be total subordination of rural by urban.[clxxxvi] Gramsci's[clxxxvii] notion of anachronistic understanding of country and city perceived through differences in class structure and ideology helps understand the grainy texture of cities and villages in the fabric of planetary urbanization (Kipfer, 2012). This ideology protrudes out in the Himalayan context as the physicality of the space is not much different in the context of city and villages in the region.

Annihilation of the way of life of the local people becomes not just spatial domination but also ecological domination, bringing deep-rooted changes in lives of the people. Spread of diseases such as cholera in colonial times to the jaundice breaks in the 2000s becomes a symptom of this ecological change. As Engles (1950)[clxxxviii] puts it, "Let us not, however, flatter ourselves overmuch on account of our human victories over nature. For each such victory, nature takes its revenge on us. Each victory, it is true, in the first place brings about the results we expected, but in the second and third places, it has quite different, unforeseen effects which only too often cancel the first."

Lefebvre adds to the question of this restructuring of nature, "Nature, destroyed as such, has already had to be reconstructed at another level, the level of "second nature," i.e., the town and the urban. The town, anti-nature or non-nature and yet second nature, heralds the future world, the world of the generalized urban. Nature, as the sum of particularities that are external to each other and dispersed in space, dies. It gives way to produced space, to the urban. The urban, defined as assemblies and encounters, is, therefore, the simultaneity (or centrality) of all that exists socially."(Lefevbre,1976).[clxxxix] Landscape is not something perceived or something like the human interaction background, but it is the mutual constitution of man and the place through action, always a work in progress (Ingold,1993).[cxc] The urban has the potential to become both a revolutionary and a repressive space. The historical processes with which the city is created are essential to knowing which direction urban space is moving and what kinds of interventions are necessary to make city a site of human emancipation. This emancipation can only happen when forces of spatial cooption are truly understood. The water crisis, explored in this

thesis, reveals these sites of cooption of the space from the material inequality to the site of extractive accumulation.

Conclusion

In this chapter, I have mapped the trajectory of making of Shimla from colonial times to the present through the framework of the urban political ecology by seeing city as part of the socio-nature. In the chapter, I tried to explore why urban centers in the Himalayan region face recurrent water crises despite ample rainfall. Thus, I attempted to bring urban space as an actor in making and unmaking of water scarcity. I have shown that space is connected with water, as the colonial spatial segregation is articulated into water access. This discourse around access also restructured the relationship between nature and the city in which it was. Even in the post-independence Shimla, water supply discourses have been inherited from the colonial period without addressing its baggage leading to the continued water problem. Reproduction of space was enabled through the notion of water scarcity. Unlike the widespread belief in Shimla that water scarcity is the product of the city's uncontrolled urbanization, the city's water scarcity became a trope for the colonial and postcolonial discourse in an attempt to push an agenda of control.

Chapter 2: Making of Infrastructural Citizenship

Introduction

Scholars from Anthropology to Geography have explored the relationship between infrastructure and citizenship (see Lemanski, 2019).[cxci] Looking beyond infrastructures as inanimate artifacts, Susan Star(1999)[cxcii], Graham & Marvin (2002)[cxciii] have conceptualized infrastructure as a socio-technical assemblage that encompasses the politics of its existence within it. Infrastructure is a site for a social struggle where groups struggle to claim its design and access. Works exploring infrastructure from the people's perspective mainly focus on the social negotiation towards access to infrastructure(see Graham&McFaralane,2014)[cxciv]. Relationship between infrastructure and citizenship also brings in the people's agency within the politics of making infrastructural projects. This relationship, which is apparent in hindsight, has only recently received serious academic consideration (Amin, 2014)[cxcv] because of the larger question of the nature of consensus and/or protests around infrastructure projects. Primary focus of these academic interventions has been on the everyday maneuvering of the people living at the edge of the urban space, trying to fill the gap left by the absence/apathy of the state.

Whenever there is a water crisis in India urban water infrastructure built during the colonial period becomes the usual punching bag[47] [48]. This blame is almost mechanical without critically looking at the ontology of these colonial infrastructure interventions whose influence reverberates to the present. Urban infrastructures produced in colonial Shimla are a living artifact and still influence the city's water supply mechanics. But not much attention has been paid to how such infrastructure projects were created through the dynamic relationship between citizens and the state. This chapter will look at the making of infrastructural citizenship during colonial and neoliberal times and how it produces the infrastructure and its after-effects. Reading the two distinct yet interconnected time-space configurations: Colonialism and Neoliberalism in a study on infrastructural citizenship helps to understand the political nature of resource struggle through a common frame of domination and control. Neoliberalism, like colonialism, remakes the relationship between state and its subjects from above(Wacquant,2010).[cxcvi] In both cases, the idea is to make a 'good' citizen who takes individual responsibility. Both ideologies seek to hinder the formation of collective identity to ensure continuity of the respective system.

Citizenship is a highly debated and contested topic in academia, with different disciplines looking at the idea of citizenship through multiple lenses (see Marshall &Bottomore, 1992; Bulmer & Rees, 2016; Jayal,2013; Menon,1998; Baubock,2003).[cxcvii] [cxcviii] [cxcix] [cc] [cci] In most cases, citizenship is viewed through the lens of the political dimension of the nation state. But this approach doesn't consider the ambiguities present in the form of

[47] Your News. (2014, May 7). Shimla's water supply still depend on British leftovers. Himachal Watcher. Retrieved March 13, 2022, from https://himachalwatcher.com/urnewz/shimlas-water-supply-still-depend-on-british-leftovers/

[48] Broto, V. C. (2018, June 30). Colonial infrastructure to blame for Bangalore running out of water. ThePrint. Retrieved March 10, 2022, from https://theprint.in/india/governance/colonial-infrastructure-augments-the-threat-on-bangalore-of-running-out-of-water/76840/

the incomplete and unequal nature of citizenship as it is experienced everyday by the people. Citizenship needs to be seen beyond the perspective of the nation state. Especially in the contemporary period when the nation state is facing a challenge from both the top and the bottom. There has been the idea of global citizenship emerging from multi-national institutions and shrinking space-time for the capital. On the other hand, local autonomy and local struggles for control over resources put pressure from the bottom. According to Holston and Appdurai (1996),[ccii] cities in the globalizing world represent the localization of the global forces, where it becomes the site for the reproduction of global capital as well as the site for its resistance. Thus, cities become a new space for the reimagination of citizenship (Baubock, 2003).[cciii] Urban citizenship is a form of these negotiations. Urban citizenship was a preeminent form of citizenship during city states in countries like India (see Muhlberger,2011)[cciv], Greece (see Rhodes,2007)[ccv], etc. In the current form of citizenship, where the political nature is dealt exclusively by the nation state, urban citizenship becomes a site of negotiations for material contestations.

Critics of the urban citizenship typology, such as Richard Dagger, argue that citizenship is lost in the city due to the loss of civic memory.

"The size, the fragmentation, and the fluidity of the population of our swollen metropolises all contribute to the loss of civic memory, the memory which, by tying its residents to the past of a city, enables them to play a role in its present and to help shape its future. As they contribute to the loss of civic memory, so these factors also contribute to the failure of citizenship." [ccvi] (Dagger,1981,p. 716)

On the other hand, works such as Production of Space(1991)[ccvii] by Henri Lefebvre provides a vocabulary for the relationship between space and society. Urban space is at the core of claiming the right to the city, where space is both the medium and objective of the political process (Busquet &Lavue, 2013).[ccviii] Citizenship is deeply intertwined with the idea

of the right to city (Harvey, 2015)[ccix]. Through urban citizenship, a person seeks the legitimacy of being part of urban processes and politics. Only through the participation of all can the urban space be constituted (Lefevbre, 1996).[ccx] These claims over the city can have both universal characteristics and local texture, but the current discussions around urban citizenship have largely focused on global cities with global capital interests (Sassen,2004).[ccxi]

Articulating citizenship at local level can be seen through its mediation in the relationship between infrastructure and scarcity. Recent scholarship (see Graham & Mcfarlane, 2014)[ccxii] around infrastructure and citizenship locates the absence of the state as the site of the contestation. In absence of the state, the people follow the DIY (Do it yourself) approach to getting services. This brings into question their rights over the resources and their authority to make claims over the urban services, which varies with the locationality and status within the city through social capital of caste, class, and gender, thereby bringing out the variegated nature of citizenship.

Infrastructural making is not just a socio-technical process derived from the problem-solution dichotomy, but it is also a product of social interactions among different actors and institutions. One point of reference on which this interaction can be analyzed is the idea of citizenship. Here, citizenship means a manifestation of the social contract between state and the people. But this contract is dynamic as both sides have to claim and reclaim it continuously. These fissures become even more prominent in a city like Shimla, which was created as an enclave by the British government surrounded by loyal princely states, leading to inequalities in infrastructure access as the city expanded beyond British territory. In the present city, multiple logics of post-colonial urban space are ever present to create ‘scarcity

citizenship' through which the infrastructure is produced. These logics include the postcolonial administrative structure attempting to develop an all-encompassing 'sociohistorical world' through bureaucratic practices (Mbeembe, 1992) [ccxiii] like the annual practice of issuing water shortage directives without any particular specificity.[49] These postcolonial practices come into contact with structural neoliberalism to form variegated citizenship, which ultimately follows the trajectory of creating a specific kind of citizen as the colonial regime did.

This chapter will look at how citizenship is experienced and performed by the people, and is produced through scarcity. This understanding of citizenship goes beyond the legal relationship between the state and people. Performance of this citizenship produces and cements the people and the state through the infrastructure, whose repercussions are felt for a long time. This relation produces a variegated form of infrastructure embodying the contestation within and produces an "infrastructural imaginary" to legitimize the hegemony of infrastructure. As an RJ (Radio Jockey) said during the water crisis in 2016, hoping for the daily water supply, *"Ummed kar sakte hein Umeed par hi duniya tiki hai"*[50] (We can only hope, the world runs on hope). Departing from the notion of contestations (Von Schnitzler,2016)[ccxiv] for water rights as an instrument for claiming citizenship, in this chapter, I will look at citizenship claims through the performance of petitions where people re-articulate the logic of the state to claim rights from it. In the following sections, I will build on the articulation of urban citizenship through the claims over the water infrastructure in colonial and postcolonial Shimla.

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49 http://hpiph.org/Letter%20circular%20proceeding/Contingency%20Plan%20for%20tracking%20Drought.pdf

50 https://twitter.com/RjShaliniSharma/status/775586090078720516

Why citizenship

So you are a citizen, so what? Many contemporary works on citizenship studies look at it through Marshallian (2013)[ccxv] sense but is it enough to look at citizenship through binary logic? In reality, citizenship is a fuzzy notion which needs to be continuously articulated and performed by the state and the people.

State produces citizenship with varying degrees from citizenship as the political right to vote and participate in the political process to a more applied form of citizenship like the access to essential services like water, electricity, etc., where the residency requirements, the domicile, and the property ownership comes into the picture. For example, in Shimla, the water storage for the house owners and tenants is different. Consequently, the water schedule changes their biological clocks, with many saying that their sleep schedule and work schedule depend on municipal water schedules as they have to fill water in various cauldrons. During the water crisis, many of the university students living in the city had to use the hostel facilities of their friends as the landlords claimed that they could not provide the water supply. "*App khud manage kar lo abhi to hamare liye bhi paani nahi hai.*" (You should manage the water on your own as we cannot even meet our supplies). Tenants without jobs, particularly students preparing for competitive exams, were requested by the landlords to fill the buckets whenever the tanker arrived or the water supply was temporarily restored. Property rights thus introduce another layer within the applicability of citizenship.

In addition to economic differentiation, social differentiations such as gender and caste also play a role in claiming urban citizenship during the urban crisis. Embodied consequence of the lack of water negatively impacts women (Truelove 2011).[ccxvi] One respondent said that it becomes her responsibility to get water even if there is no water available in the taps. She had to wait for the tankers or the municipal supply. Sometimes water collection takes almost half a day and only after that can she go to work. Although rare, cases of fights for access to water tanks involved women in some areas of the city. Experience of violence further emphasizes the gendered embodiment of the claims over water. Water exclusion occurs through caste lines in Shimla as the caste is articulated through space. Locations where the majority of the Dalit population live are situated in a precarious location with a steep slope >70® (Krishna Nagar Ward), which has been a site of infrastructural exclusion.

Another dimension of capital and citizenship is also emerging as urban citizenship has moved beyond Chatterjee's (2004)[ccxvii] notion of proper citizen, bound in the propertied relationship. Now, extractive regimes are more about covering everyone and extracting from everyone (Sanyal, 2014).[ccxviii] Case of the Ujjwala Scheme[51] is one such example where expansion of access to cooking gas has not been successful[52] as the focus has been on cost recovery rather than the right to clean air. Trajectory of Ujjwala Scheme also indicates what might lay ahead[53] for the Jal Jeevan Mission , a tap water provisioning scheme designed to provide water to all households. It appears after speaking to many low income households that the Jal Jeevan mission is also about extracting water charges. Thus, the expansion of

[51] Johari, A. (2022, July 20). Modi's Pradhan Mantri Ujjwala Yojana struggles as LPG prices rise. Quartz. Retrieved April 4, 2022, from https://qz.com/india/1982043/modis-pradhan-mantri-ujjwala-yojana-struggles-as-lpg-prices-rise/

[52] Aggarwal, M. (2021, January 22). Government survey paints a different picture of Ujjwala scheme claims. Mongabay-India. Retrieved April 4, 2022, from https://india.mongabay.com/2021/01/government-survey-paints-a-different-picture-of-ujjwala-scheme-claims/

[53] https://jaljeevanmission.gov.in/content/centre-wants-village-committees-collect-water-service-charges

infrastructure provisioning is essentially redefining possibilities of citizenship and its articulations moving towards a consumerist dispensation.

Articulating Citizenship

As a conceptual category, citizenship is traditionally considered the relationship between people and the state. But the notion of citizenship is seeing significant changes due to its articulation on ground. The contemporary work explores this variegation of citizenship across space and scale, from the notion of global citizenship (Schattle, 2010)[ccxix] and local citizenship (Smart & Lin, 2007)[ccxx] to even the material articulation of citizenship like hydraulic citizenship (Anand, 2017)[ccxxi] and litigant citizenship (Gandhi,2020)[ccxxii]. In these articulations of citizenship, the notion of citizenship is considered dynamic instead of the state-centric legalistic approach as, in most cases, the legal framework of citizenship and the rights pertaining to it have been settled. Instead, the claims for the rights become the battleground for the citizenship question. Citizenship thus becomes a site for the contestation as groups seek to access the infrastructure by reinforcing their position as citizens & vice versa.

Ranciere's notion of politics as "Aesthetics" is used to understand these two forms of infrastructural citizenship as in both cases, the notion of "seen" becomes a matter of justice (Feola,2014).[ccxxiii] Two categories of texts, petitions by the colonial subject and the proud display of the water bills by the neoliberal subject, show an attempt to claim legitimacy and, thereby, demand access to resources. For Renciere (1999), "political activity is whatever shifts a body from the place assigned to it or changes a place's destination. It makes visible what had no business being seen and makes heard a discourse where once there was only place for noise; it makes understood as discourse what was once only heard as noise."[ccxxiv]

By claiming this legitimacy, the state creates a kind of control infrastructure, as explained by Fanon(2007, p.37), "these aesthetic expressions of respect for the established order serve to create around the exploited person an atmosphere of submission and of inhibition which lightens the task of policing considerably."[ccxxv] Citizenship in action can be seen in everyday lives of people negotiating for urban services. Works like Hydraulic City (Anand, 2017)[ccxxvi] describe the everyday negotiations of people to access water and claim their right to live in the city. There have been works looking at the enactments (Ranganathan ,2014; Sulatana,2020)[ccxxvii] [ccxxviii] of citizenship through various means, either through resistance or through a thorough maneuvering of structural inequalities. People exercise and enact their rights through protests and negotiations to legitimize their interests. But in most cases, alliances remain temporary, and water scarcity continuously reproduces itself despite the claims over the water.

Urban Citizenship in Colonial times

Like many other hill stations, Shimla became a site for the settler form of colonialism where due to the environmental[ccxxix] similarity with the UK, the colonizers preferred to stay in themselves (Acemoglu & Johnson,2005). Another reason for its spatial form was a very sparse population which allowed the British to establish their enclaves in Shimla. After the mutiny of 1857, the British felt that there was a need to have safe enclaves far away from the native population just in case the situation became bad. These geographical factors also determine the institutional structure developed in these spaces, particularly the legal formalization that emphasizes private property and checks against government power (Acemoglu et. al., 2001).[ccxxx]

Infrastructure produces unique epistemic communities, distinct from their predecessors due to new technologies, and redefines people's relationship with their surrounding. Later, these communities produce their rationalities and claims. Presence of contingent alliances in the assemblage of urban infrastructures as a context-specific imperative offers a sensitive analytical and methodological lens to understand how alternative means of producing the city and region can be conceived and pursued.

Space becomes vital in understanding the notion of citizenship as the British considered Simla a place where they could be free of inhibitions compared to their lives on the plain (Allen, 1977)[ccxxxi], a place they can call home. When a place becomes the home, it also includes its features, including the idea of equality. Through petitions, people have sought access to that home. Water becomes a conduit of citizenship, a bridge (see Simmel, 1994)[ccxxxii] connecting the outside with the inside. Infrastructure projects like water supply, roads, digital infrastructures etc. are designed to connect people far from each other. Infrastructure also acted as a door for the colonial government as it could selectively allow or disallow the population through controlling access.. Infrastructure here becomes a tool for both. In one way, claims on infrastructure fulfill the legitimacy of being a citizen. On the other hand, these claims are produced from the citizenship itself. This precarity of citizenship and belonging for the colonized has a spatial connotation as space is produced through the relationship.

Shimla becomes an important site for understanding urban citizenship because of its unique political geography during colonial times. It provided space for political participation for its residents due to its imagery of a hill town, which was to be created in the British

cities' image and would have to have a similar political space. Murder[54] of a rickshaw puller and subsequent protests by locals give insight into the city's imagery. In this incident, a British officer(Controller of Army Canteen Board) kicked an Indian Rickshaw puller to death in 1925. Initially, the police were reluctant to file the case. Still, the local Indian community, including govt servants and local elites, pursued the case despite the English community's pressure and secured a sentence of 18 months. This incident cannot be removed from the spatial nature of Shimla city as the lawyer who fought for the cause of the rickshaw puller proclaimed that his involvement in the case comes from him being a 'citizen of Simla.'[ccxxxiii](Kanwar, 2003, p. 174)

Town's space gives the scope for claiming rights by the residents of the city. However, this is still rooted in property claims like Rickshaw puller cannot just claim rights as an individual. He had to seek support from local property-owning elites of Simla. City spaces are the battleground for claims over the rights (Isin, 1999),[ccxxxiv] but the organization of this space, both spatial and political, would determine how this battle for rights would unfold. Hill towns were not exclusive sites for the British. Different groups tried to stake claims over the region through economic means, as did the Indian royalty who bought houses. However, later in the early twentieth century, British government stopped the European monopoly over the city's upper echelons. Another claim on the city was made by lower bureaucracy, which became indispensable for the British to maintain their stay in Simla. These local officials made claims through prayers and petitions for essential services to create infrastructural citizenship in the city.

[54] The Case of the Rickshaw Coolie Murder. (2019, November 21). Open the Magazine. Retrieved October 3, 2017, from https://openthemagazine.com/columns/the-case-of-the-rickshaw-coolie-murder/

Petitions: Act of citizenship in the colonial Shimla

Acts of citizenship through the petitions are conceptually different from the actions for the infrastructure as seen in the form of protests for access. Petitioning serves as a point where the voice of the normally silenced shifts from its wants to its entitlement(Pitkin, 1981).[ccxxxv] Petitions have been part of the life of the Indian subject. There has been a large treasure trove of literature on the nature of petitions since the precolonial period. They represent the communicative origins of democratic culture (Raman, 2019).[ccxxxvi] Majid Sidique (2005)[ccxxxvii] argues that the petitions adhered to the sanctioned civility but simultaneously reflected the growing nationalist feeling emerging in the late 19th century. Gandhi[ccxxxviii] supported the idea of petition as for him, "A petition from an equal is a sign of courtesy; a petition from a slave is a symbol of his slavery. A petition backed by force is a petition from an equal, and when he transmits his demand in the form of a petition, it testifies to his nobility."(Parel, 1997,p.85) Thereby, we rearticulate petitions from a sign of servitude to the symbol of anticolonial resistance.

In colonial Shimla's context, many of the rights claimants did not even reside within the state's physical boundary. Still, their demand was derived through utility to the state. However, it increased the municipal body's sphere of influence through the spread of water supply in that area. The infrastructure framework also brings in continuous claims over the infrastructure to look at the improvement in citizenship assertion. In present case, once access is secured, there are claims for the incremental improvement in the water supply

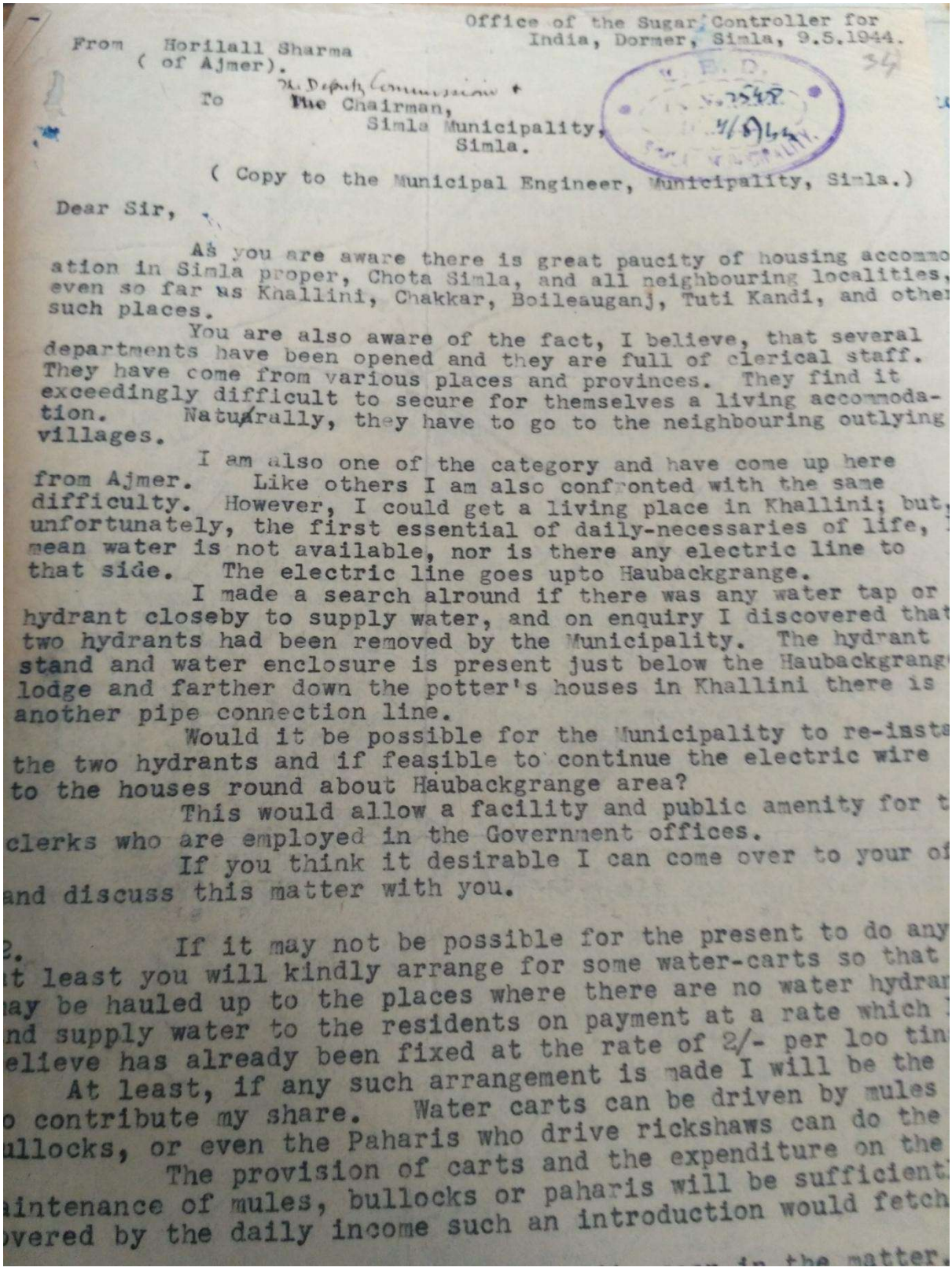
from petitions for common tap to price parity among all the regions and ultimately demanding access to individual connections.

After Delhi became the capital of India, Shimla saw an unprecedented movement of officials from the lower bureaucracy unlike earlier when the capital was Kolkata as many officials preferred to stay back, and only the high ranking officers would relocate. Shimla was fetishized as a European city in India, which gave a sense of belonging to the Europeans and did the opposite to the Indians living in the city. So, these *babus* were foreigners in their own city.

Thus, to control the new surge of the native population, the municipal government acted as the gatekeeper, first by restricting the housing ownership of the Indian royals who started to buy houses in the city. For the service class, this control came with the control of infrastructure access, mainly the access to water infrastructure, and using it to control the city's growth. This created a contradiction wherein the government's need for native officials and its desire to keep Shimla as a European utopia created new suburbs outside the city's municipal jurisdictions. But the push and pull incrementally led to the spread of municipal services in the area.

Here, the infrastructural citizenship of the masses was claimed through the local royals. They became mediators between their subjects and the British government, thereby reproducing their own authority. This new authority then saw them occupying increased political power in India's post-independence (Masselos,2020)[ccxxxix], and again that circle of petitions continued. Their role as this mediator has remained the same between people and an 'apolitical' bureaucracy.

Exploring the nature of petitions, one can see the performance of one's utility to the British government in order to claim access to water. Figure 18 shows how the local bureaucracy uses its position of necessity to access infrastructure services. In the petition, an officer argues that clerical staff has to move outside the city due to paucity of the space in Simla. There is also an element of payment capability as the petitioner explicitly mentions that he would pay for the water. By mentioning the paying capacity, he shows the government that he does not intend to become a freeloader thereby proving his legitamacy as an urban citizen.



Office of the Sugar Controller for India, Dormer, Simla, 9.5.1944.

From Horilall Sharma
(of Ajmer).

To The Deputy Commissioner &
The Chairman,
Simla Municipality,
Simla.

(Copy to the Municipal Engineer, Municipality, Simla.)

Dear Sir,

As you are aware there is great paucity of housing accommo ation in Simla proper, Chota Simla, and all neighbouring localities, even so far as Khallini, Chakkar, Boileauganj, Tuti Kandi, and othe such places.

You are also aware of the fact, I believe, that several departments have been opened and they are full of clerical staff. They have come from various places and provinces. They find it exceedingly difficult to secure for themselves a living accommoda- tion. Naturally, they have to go to the neighbouring outlying villages.

I am also one of the category and have come up here from Ajmer. Like others I am also confronted with the same difficulty. However, I could get a living place in Khallini; but, unfortunately, the first essential of daily-necessaries of life, mean water is not available, nor is there any electric line to that side. The electric line goes upto Haubackgrange.

I made a search alround if there was any water tap or hydrant closeby to supply water, and on enquiry I discovered that two hydrants had been removed by the Municipality. The hydrant stand and water enclosure is present just below the Haubackgrang lodge and farther down the potter's houses in Khallini there is another pipe connection line.

Would it be possible for the Municipality to re-insta the two hydrants and if feasible to continue the electric wire to the houses round about Haubackgrange area?

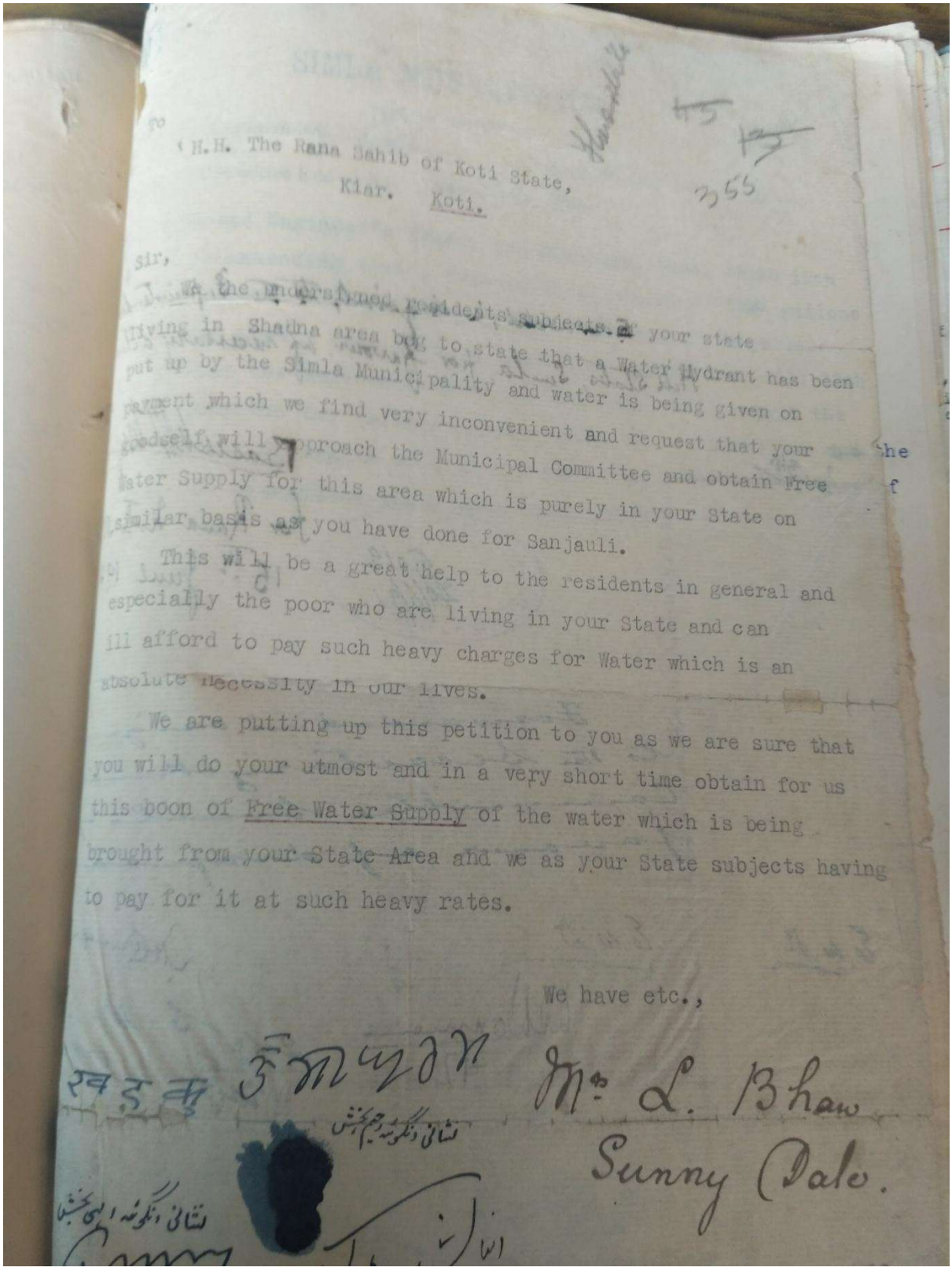
This would allow a facility and public amenity for t clerks who are employed in the Government offices.

If you think it desirable I can come over to your o and discuss this matter with you.

2. If it may not be possible for the present to do any t least you will kindly arrange for some water-carts so that ay be hauled up to the places where there are no water hydra nd supply water to the residents on payment at a rate which elieve has already been fixed at the rate of 2/- per loo tin At least, if any such arrangement is made I will be the o contribute my share. Water carts can be driven by mules ullocks, or even the Paharis who drive rickshaws can do the The provision of carts and the expenditure on the aintenance of mules, bullocks or paharis will be sufficient overed by the daily income such an introduction would fetch

the matter.

Figure 18 Govt employee's petition seeking water Courtesy: Himachal State Archives



To

H.H. The Rana Sahib of Koti State,
Kiar. Koti.

Sir,

We the undersigned residents subjects of your state living in Shatna area beg to state that a Water Hydrant has been put up by the Simla Municipality and water is being given on payment which we find very inconvenient and request that your goodself will approach the Municipal Committee and obtain Free Water Supply for this area which is purely in your State on similar basis as you have done for Sanjauli.

This will be a great help to the residents in general and especially the poor who are living in your State and can ill afford to pay such heavy charges for Water which is an absolute necessity in our lives.

We are putting up this petition to you as we are sure that you will do your utmost and in a very short time obtain for us this boon of Free Water Supply of the water which is being brought from your State Area and we as your State subjects having to pay for it at such heavy rates.

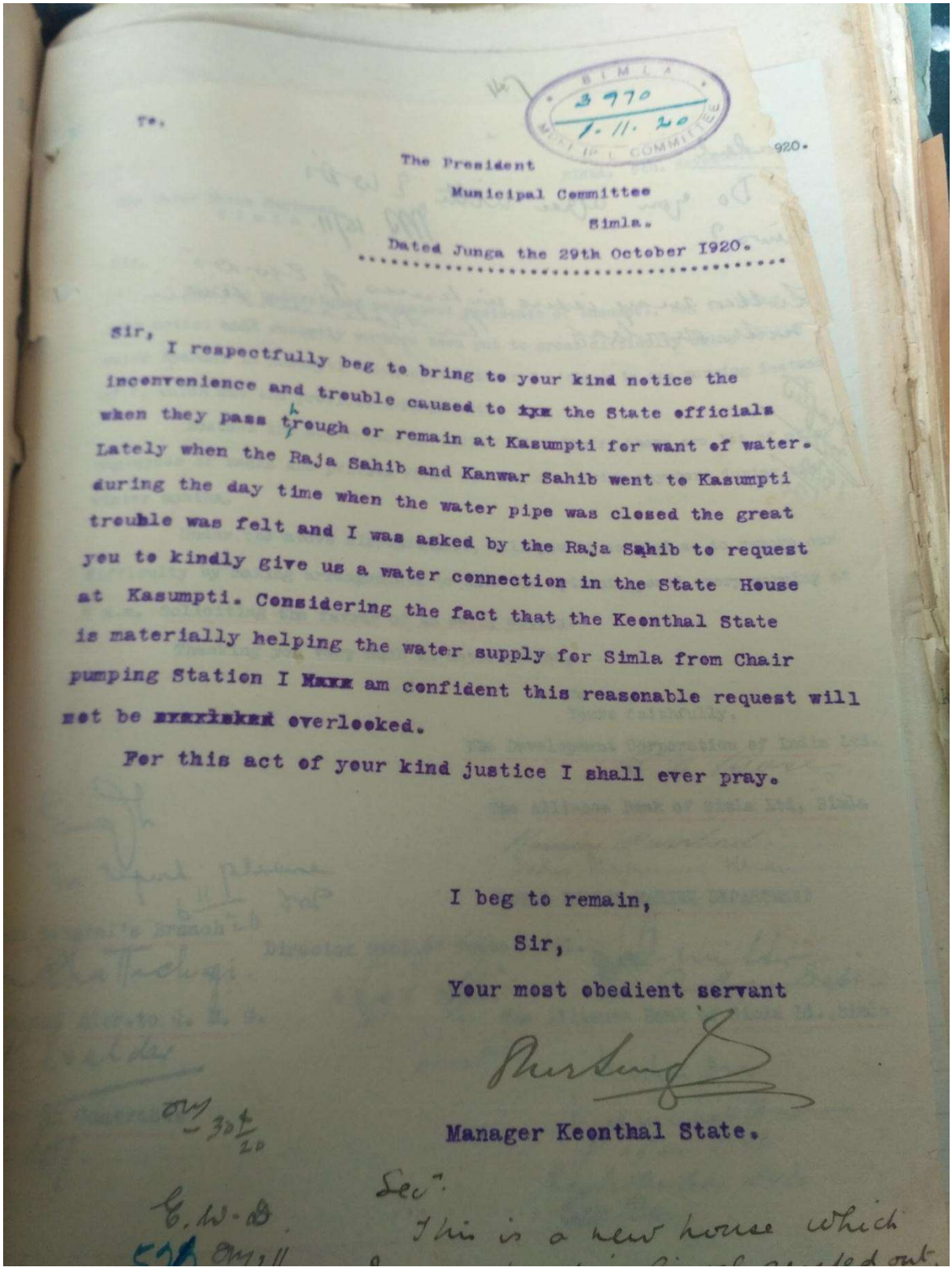
We have etc.,

M. L. Bhau

Sunny Dale.

Figure 19 Subjects petitioning their king Courtesy: Himachal State Archives

As depicted in the letter (Figure 19), people not only applied to the British government directly but also petitioned their local rulers in order to make them intermediary in order to negotiate with the government. Petition tends to justify free water in the name of the poor living in the area, interestingly all the petitioners have signed the petition depicting their social status. Petition emphasizes that "This [free water supply] will greatly help the residents and especially the poor living in your state." Here petitioners also mention that they are the ruler's subjects, but the claim is also towards the British municipal water supply. Thus, the notion of citizenship becomes fuzzy within the boundaries of a colonial city such as Simla. There is also an emphasis on precedence by using the example of free water in Sanjauli to further justify demand.



To,

The President
Municipal Committee
Simla.

Dated Junga the 29th October 1920.

Sir,

I respectfully beg to bring to your kind notice the inconvenience and trouble caused to the State officials when they pass trough or remain at Kasumpti for want of water. Lately when the Raja Sahib and Kanwar Sahib went to Kasumpti during the day time when the water pipe was closed the great trouble was felt and I was asked by the Raja Sahib to request you to kindly give us a water connection in the State House at Kasumpti. Considering the fact that the Keonthal State is materially helping the water supply for Simla from Chair pumping Station I am confident this reasonable request will not be overlooked.

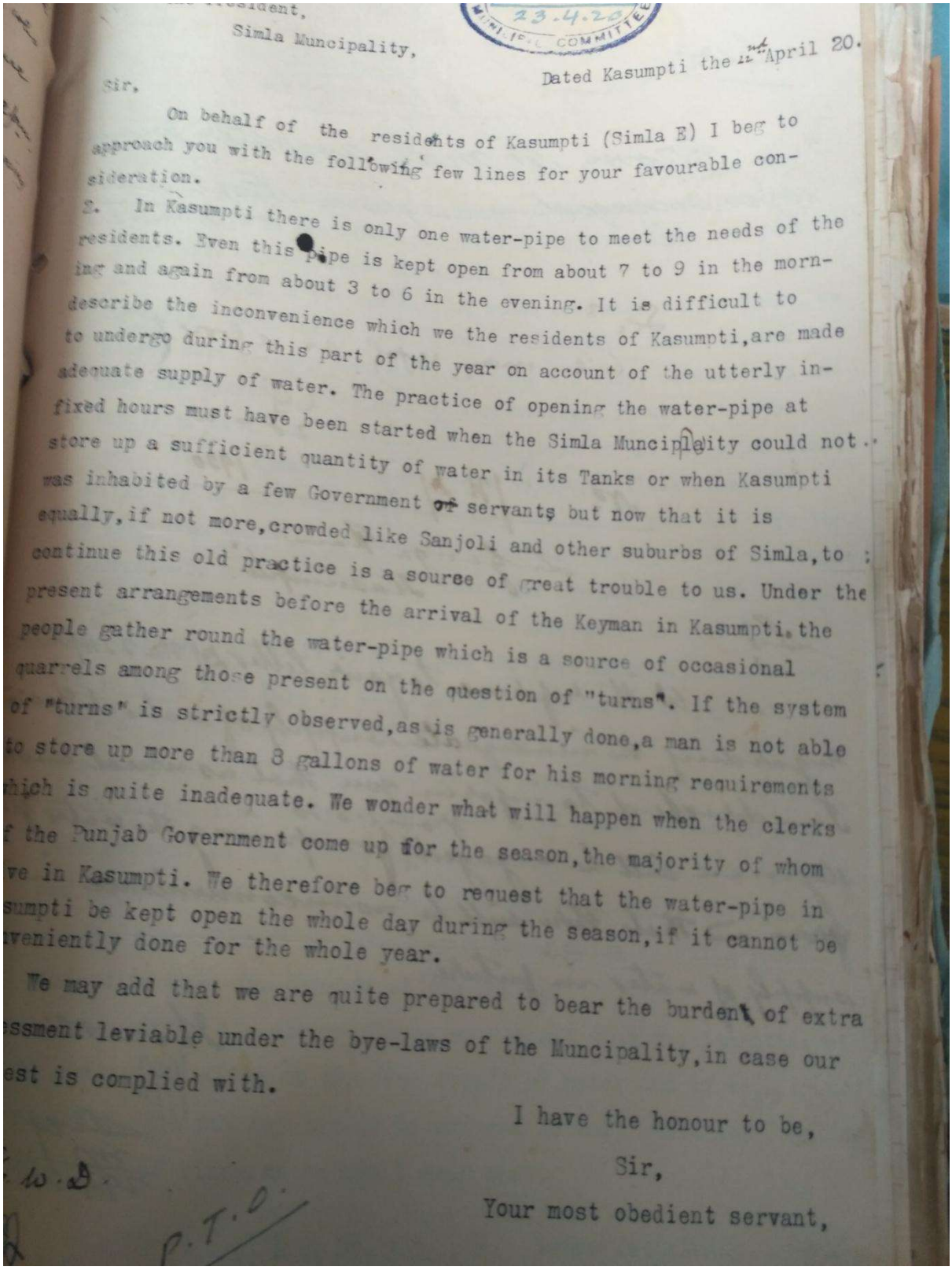
For this act of your kind justice I shall ever pray.

I beg to remain,
Sir,
Your most obedient servant

Manager Keonthal State.

Figure 20 King's petition to the Shimla Municipal Committee Courtesy: Himachal State Archives

Figure 20 shows how the local rulers play a dual role; on the one hand, they imbibe the part of the responsive ruler who should act on behalf of his subjects, but simultaneously there is an acknowledgment of their subservient authority in which the King also rationalizes the need for water in the region by arguing that British government servants are living in the area. Language used reflects both the benevolence and the authority of the government. The duality of tone is visible in the letter written by the Manager of Keonthal State to the President of Simla Municipal Committee “I respectfully beg to bring to your kind notice inconvenience and trouble caused to the state officials when they pass through or remain in Kasumpti for lack of water. Lately, when Raja Sahib and Kanwar Sahib went to Kasumpti during the day, great trouble was felt." (Fig. 20) Surrounding princely states sought claim over the city's water supply, arguing that the source of Simla’s water supply is within their territory. "Considering the fact that the Keonthal State is materially helping the water supply for Simla from the Chair pumping station." (Fig. 20)



President,
Simla Muncipality,

23.4.20
MUNICIPAL COMMITTEE

Dated Kasumpti the 22nd April 20.

Sir,

On behalf of the residents of Kasumpti (Simla E) I beg to approach you with the following few lines for your favourable consideration.

2. In Kasumpti there is only one water-pipe to meet the needs of the residents. Even this pipe is kept open from about 7 to 9 in the morning and again from about 3 to 6 in the evening. It is difficult to describe the inconvenience which we the residents of Kasumpti, are made to undergo during this part of the year on account of the utterly inadequate supply of water. The practice of opening the water-pipe at fixed hours must have been started when the Simla Municipality could not store up a sufficient quantity of water in its Tanks or when Kasumpti was inhabited by a few Government ~~of~~ servants but now that it is equally, if not more, crowded like Sanjoli and other suburbs of Simla, to continue this old practice is a source of great trouble to us. Under the present arrangements before the arrival of the Keyman in Kasumpti, the people gather round the water-pipe which is a source of occasional quarrels among those present on the question of "turns". If the system of "turns" is strictly observed, as is generally done, a man is not able to store up more than 8 gallons of water for his morning requirements which is quite inadequate. We wonder what will happen when the clerks of the Punjab Government come up for the season, the majority of whom live in Kasumpti. We therefore beg to request that the water-pipe in Kasumpti be kept open the whole day during the season, if it cannot be conveniently done for the whole year.

We may add that we are quite prepared to bear the burden of extra assment leviable under the bye-laws of the Muncipality, in case our est is complied with.

I have the honour to be,

Sir,

Your most obedient servant,

P.T.O.

Figure 21 Citizen's petition Courtesy: Himachal State Archives

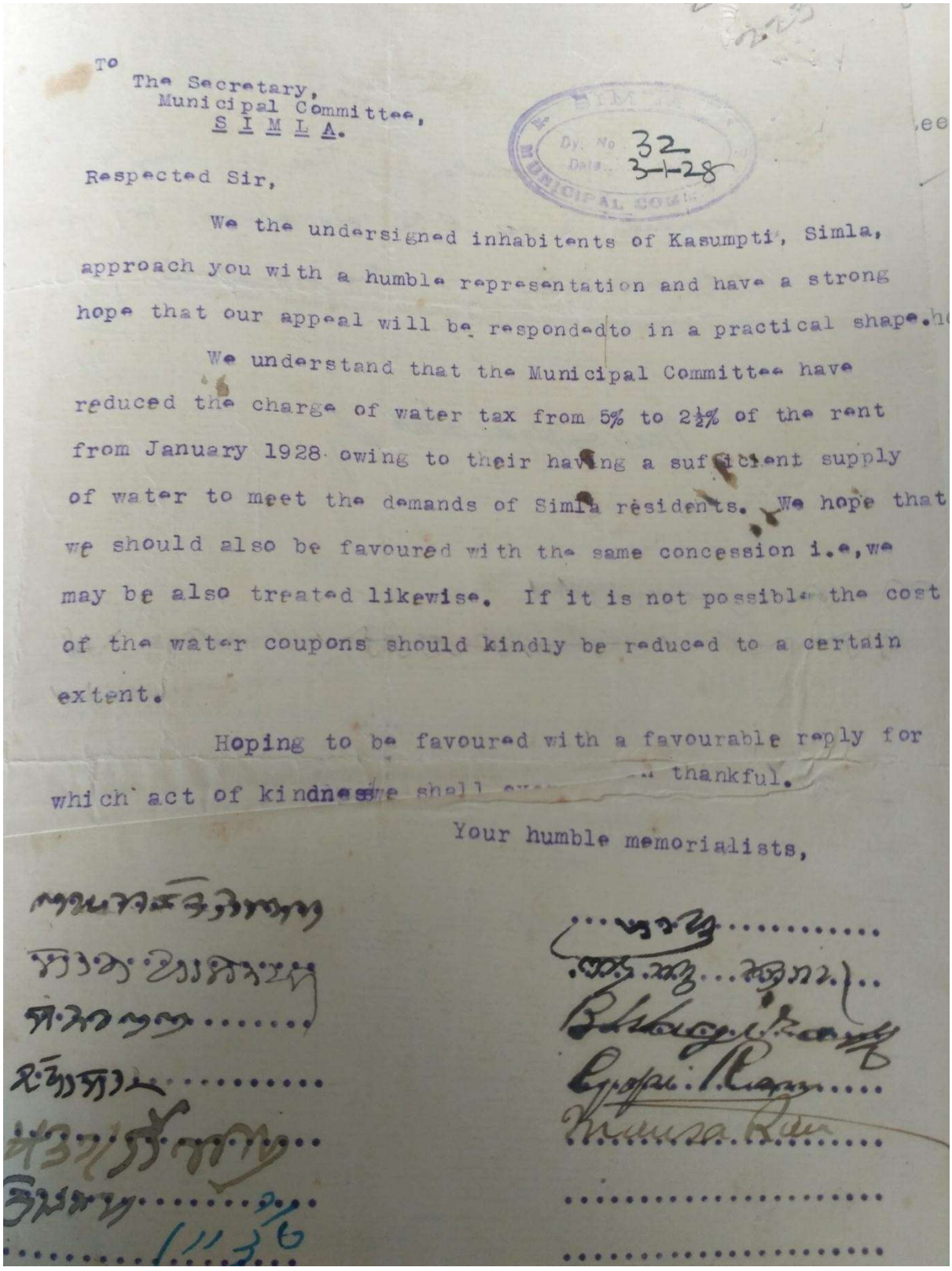
Figure 21 shows attempts to expand the water rights. Here, incremental improvement is sought from limited hours of water supply to continuous water supply. In this case, justification is given in terms of the law and order issue by mentioning fights for water and suggesting that many residents work for the British government. Payment capacity is explicitly mentioned to ward off any skepticism about the financial viability of extending the water connections in the region. Expansion of rights also takes place by bringing an equivalency of utility towards the state, thereby going beyond the spatial situatedness. "We wonder what will happen when the clerks of the Punjab Government come up for the season." (Fig 21) Residents are now demanding similar treatment as residents of the main town. This letter was written eight years after the previous letter seeking continuous water supply.

Expansion of the rights to the level of equivalence with the citizens of Simla municipal corporation can be seen in Figure 22. Here, residents of Kasumpti (part of a princely state) are demanding same benefits as the residents of Simla by arguing that when the water tax is reduced in the city, then they should also "be favored with the same concession, i.e., we may be treated as likewise." (Fig. 22)

Existence of nested citizenship (see Kivisto & Faist, 2009)[ccxl] was also practiced here; as one can see, those who were part of the British government also claimed infrastructural access from local rulers. Figure 24 shows residents seeking free water from the local King, who exerts legitimacy by mediating with the British-run municipal government. Petitioners here claim to be the state subjects “We are putting up this petition to you as we are sure that you will do your utmost and in a short time obtain for us this boon of Free Water

Supply of the water which is being brought from your state area and we as your state subjects having to pay for it at such heavy rates" (Fig. 24)

This expansion of citizenship through infrastructure went on in post-independence India, as shown in Figure 23. Here, we see how the residents of Mashobra(a place beyond Shimla) are also writing to the municipal committee for access to water.



To

The Secretary,
Municipal Committee,
S I M L A.

SIMLA MUNICIPAL COMMITTEE
Dy. No. 32
Date 31-1-28

Respected Sir,

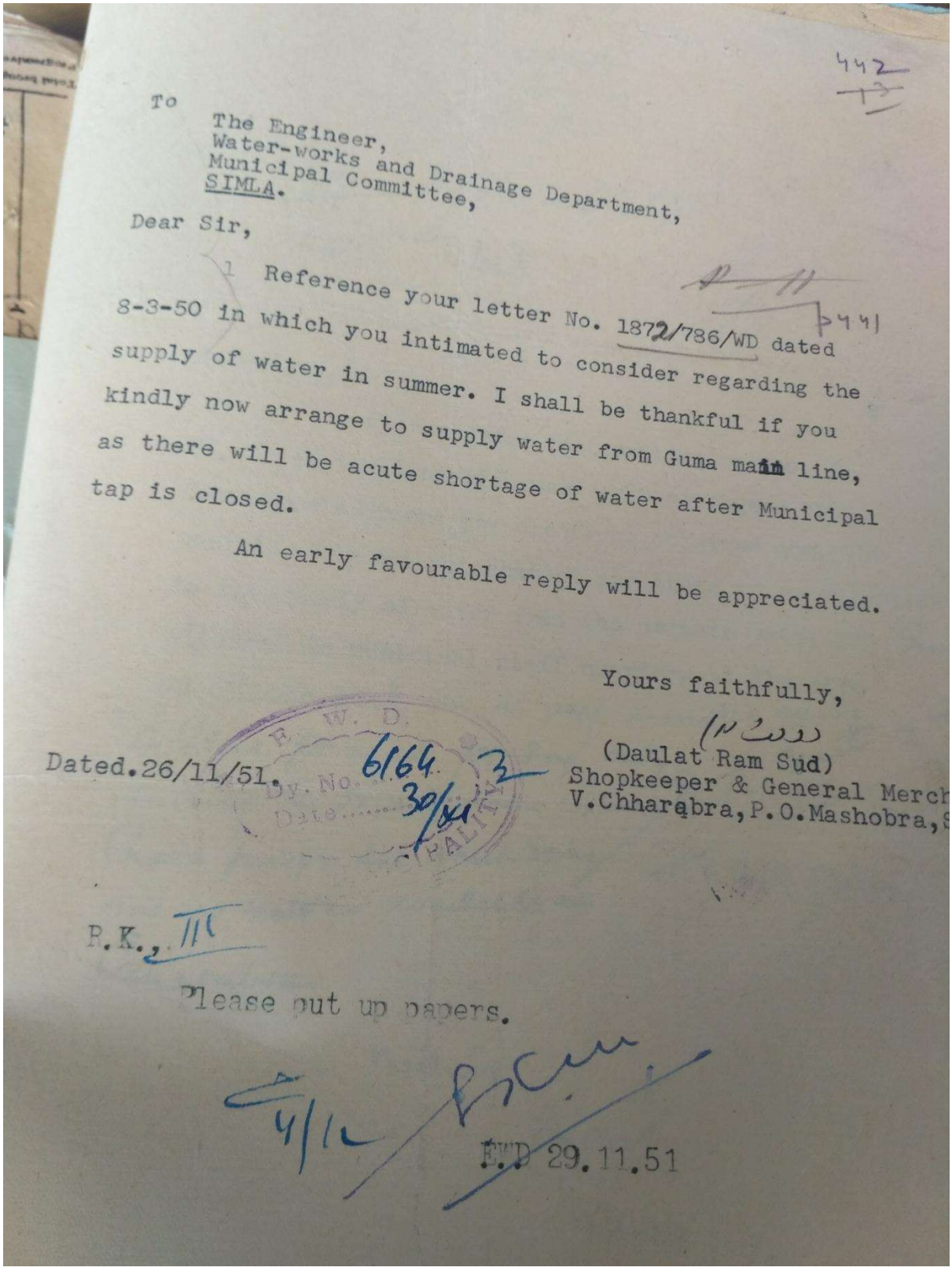
We the undersigned inhabitents of Kasumpti, Simla, approach you with a humble representation and have a strong hope that our appeal will be respondedto in a practical shape.

We understand that the Municipal Committee have reduced the charge of water tax from 5% to 2½% of the rent from January 1928 owing to their having a sufficient supply of water to meet the demands of Simla residents. We hope that we should also be favoured with the same concession i.e, we may be also treated likewise. If it is not possible the cost of the water coupons should kindly be reduced to a certain extent.

Hoping to be favoured with a favourable reply for which act of kindness we shall ever remain thankful.

Your humble memorialists,

Figure 22 Citizen petition 2 Courtesy: Himachal State Archives



442

To

The Engineer,
Water-works and Drainage Department,
Municipal Committee,
SIMLA.

Dear Sir,

1 Reference your letter No. 1872/786/WD dated 8-3-50 in which you intimated to consider regarding the supply of water in summer. I shall be thankful if you kindly now arrange to supply water from Guma main line, as there will be acute shortage of water after Municipal tap is closed.

An early favourable reply will be appreciated.

Yours faithfully,

(Daulat Ram Sud)
Shopkeeper & General Merch
V.Chharabra, P.O.Mashobra,

Dated.26/11/51.

E. W. D.
Dy. No. 6164
Date 30/11/51
SIMLA-3

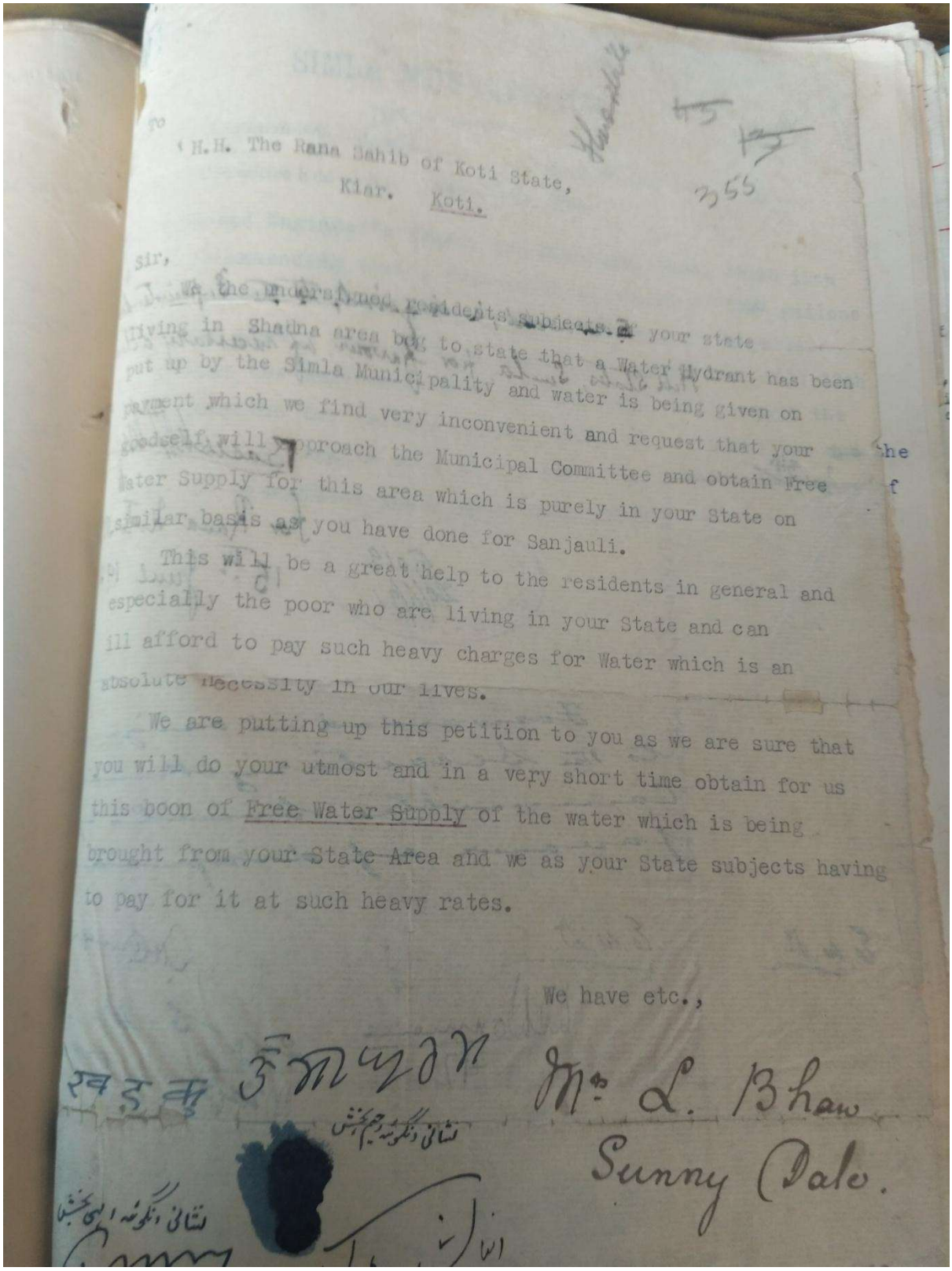
P.K., 11

Please put up papers.

4/12

EWD 29.11.51

Figure 23 Petition in post independent India Courtesy: Himachal State Archives



To

H.H. The Rana Sahib of Koti State,
Kiar. Koti.

Sir,

We the undersigned residents subjects of your state living in Shatina area beg to state that a Water Hydrant has been put up by the Simla Municipality and water is being given on payment which we find very inconvenient and request that your goodself will approach the Municipal Committee and obtain Free Water Supply for this area which is purely in your State on similar basis as you have done for Sanjauli.

This will be a great help to the residents in general and especially the poor who are living in your State and can ill afford to pay such heavy charges for Water which is an absolute necessity in our lives.

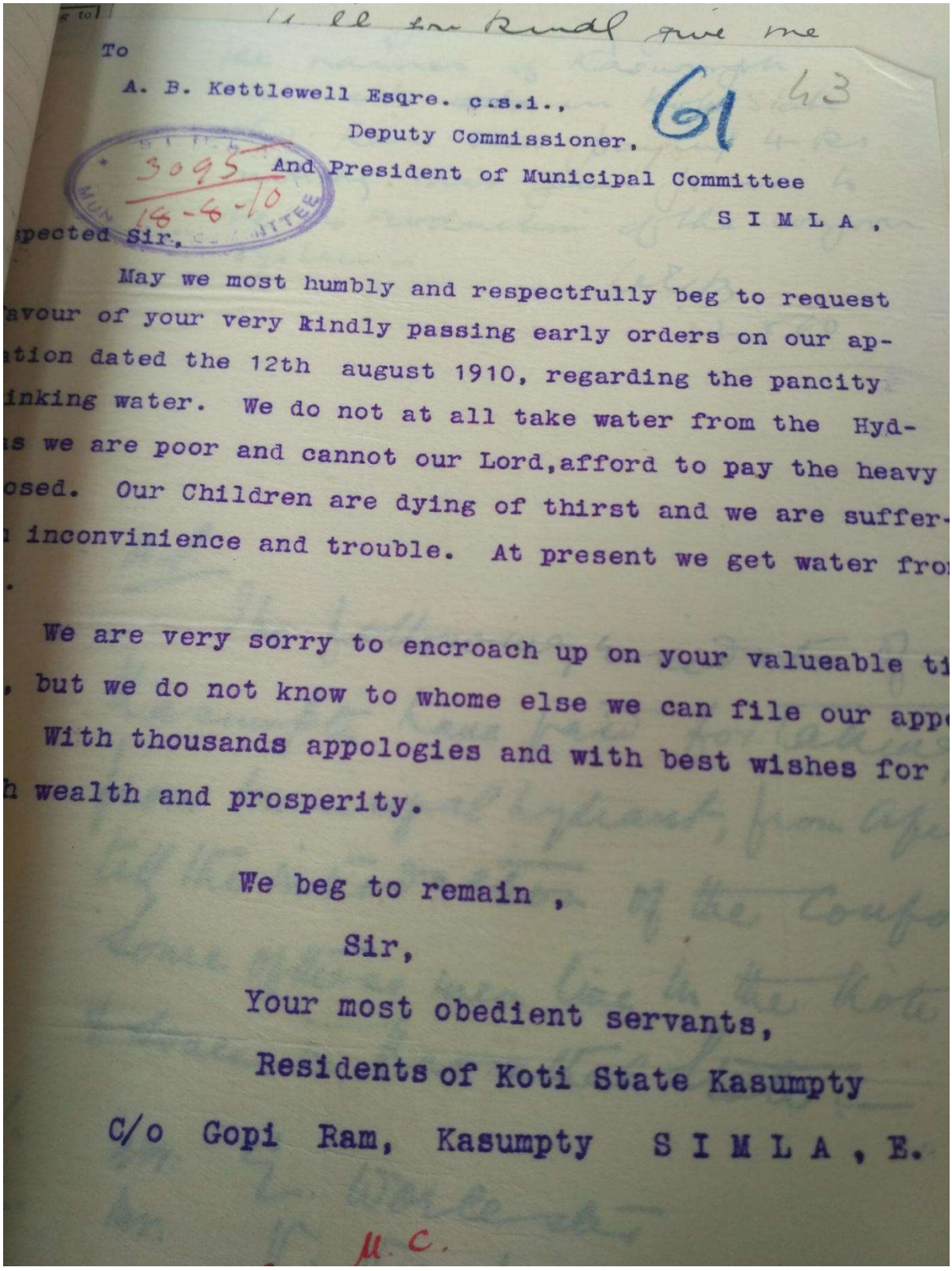
We are putting up this petition to you as we are sure that you will do your utmost and in a very short time obtain for us this boon of Free Water Supply of the water which is being brought from your State Area and we as your State subjects having to pay for it at such heavy rates.

We have etc.,

Mr. L. Bhau
Sunny Dale.

Figure 24 Subjects petitioning their King 2 Courtesy: Himachal State Archives

But this infrastructure access strategy is not just unidirectional. Figure 25 shows how subjects of princely states directly ask the municipal body where they are not even citizens, thereby creating a form of nested citizenship. On the other hand, people who came to Simla as an employee of the colonial government sought water from the local rulers. Therefore, people apply all kinds of strategies to seek access to water. Here, claims are also through the more universal notions of 'human rights' when the petition argues "Our children are dying of thirst and we are suffering great inconvenience and trouble." (Fig. 25)



To

A. B. Kettlewell Esqre. c.s.i.,

Deputy Commissioner,

And President of Municipal Committee

SIMLA,

3095

16-6-10

61 43

spected Sir,

May we most humbly and respectfully beg to request
avour of your very Kindly passing early orders on our ap-
tion dated the 12th august 1910, regarding the pancity
inking water. We do not at all take water from the Hyd-
s we are poor and cannot our Lord, afford to pay the heavy
osed. Our Children are dying of thirst and we are suffer-
inconvinience and trouble. At present we get water fro

We are very sorry to encroach up on your valueable ti
, but we do not know to whome else we can file our app
With thousands appologies and with best wishes for
h wealth and prosperity.

We beg to remain ,

Sir,

Your most obedient servants,

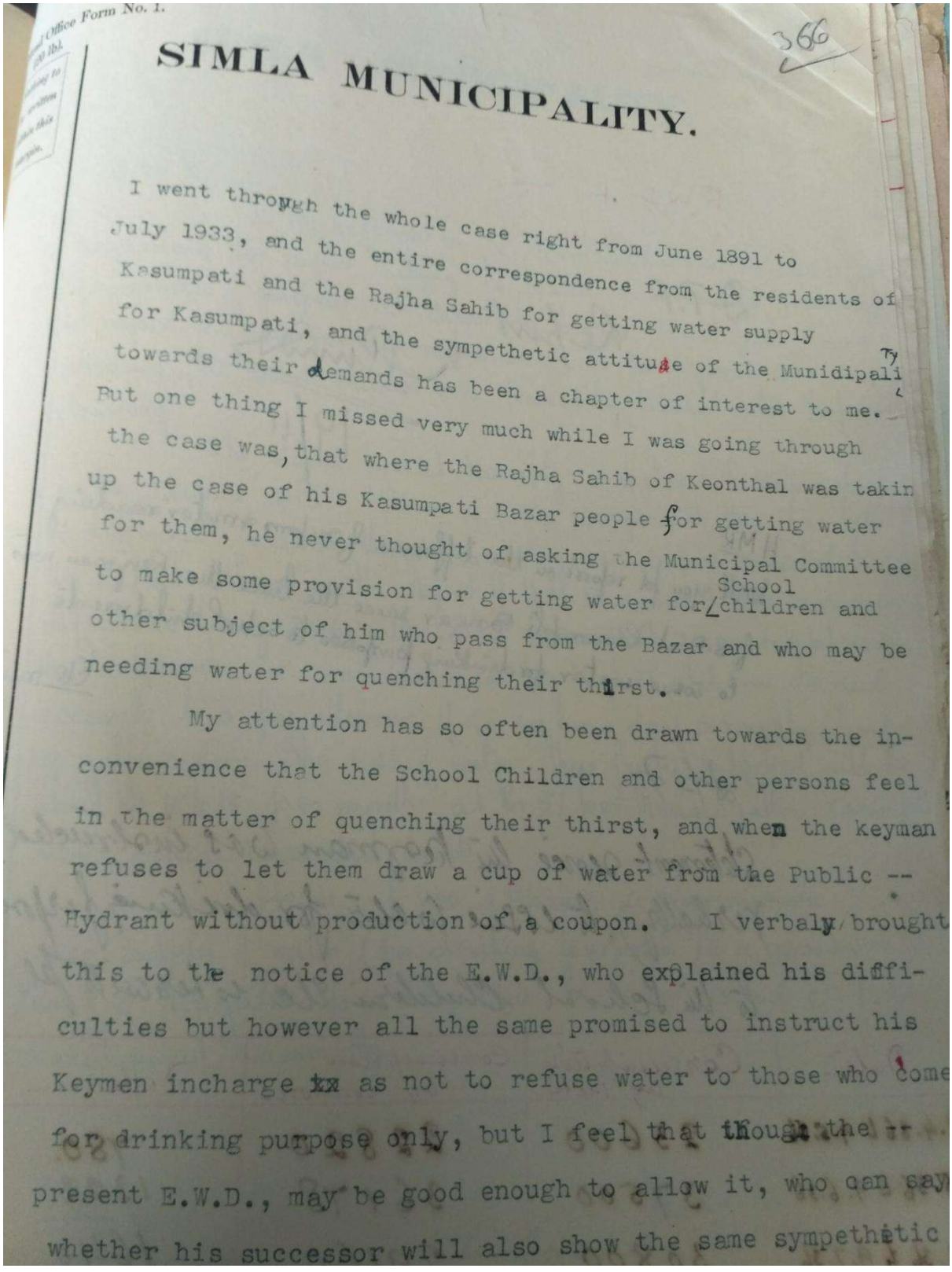
Residents of Koti State Kasumpty

C/o Gopi Ram, Kasumpty SIMLA, E.

M. C.

Figure 25 Subjects Petitioning Municipality Courtesy: Himachal State Archives

Ultimately, the expansion of the water infrastructure was carried out by the British government. As Figure 26 shows, this expansion's logic was on their terms rather than the various petitioners' claims. The expansion of water rights not toward the general residents (as sought by the local ruler) but toward the schoolchildren reflects the colonial government's exertion of the 'state of exception' (Agamben,2008).[ccxli] Thus, water rights were expanded but on the terms decided by the British government instead on using logic of the local rulers in order to maintain the British supremacy on the region.



Office Form No. 1.

366

SIMLA MUNICIPALITY.

I went through the whole case right from June 1891 to July 1933, and the entire correspondence from the residents of Kasumpati and the Rajha Sahib for getting water supply for Kasumpati, and the sympethetic attitude of the Munidipali towards their demands has been a chapter of interest to me. But one thing I missed very much while I was going through the case was, that where the Rajha Sahib of Keonthal was takin up the case of his Kasumpati Bazar people for getting water for them, he never thought of asking the Municipal Committee to make some provision for getting water for School children and other subject of him who pass from the Bazar and who may be needing water for quenching their thirst.

My attention has so often been drawn towards the inconvenience that the School Children and other persons feel in the matter of quenching their thirst, and when the keyman refuses to let them draw a cup of water from the Public -- Hydrant without production of a coupon. I verbaly brought this to the notice of the E.W.D., who explained his difficulties but however all the same promised to instruct his Keymen incharge as not to refuse water to those who come for drinking purpose only, but I feel that though the present E.W.D., may be good enough to allow it, who can say whether his successor will also show the same sympethetic

Figure 26 Municipality's response Courtesy: Himachal State Archives

Language of petitions also plays a role in the conception of infrastructure. It depicts negotiations between the actors. Incremental approach to building citizenship through claims over resources fits with the incremental growth of the water infrastructure in the city. Incremental citizenship is generally ascribed to the urban poor (McFarlane, 2008)[ccxlii], wherein the poor in the post-colonial cities living on margins try to claim the rights over the city by maneuvering through the networks of state and non-state actors.

Petitions in the case of Simla during colonial times show a similar strategy of incrementalism adopted by the local residents living on the margins of the city. Sequence of petitions reflects the evolution of citizenship through claims over the water sources. Looking at the evolution of petitions, we can see the trajectory of incremental citizenship. Claimants start with the basic infrastructure in the name of necessity and later seek regular supply as the customer of water ultimately evolving into the equal citizen demanding regular free of cost water.

Even if the British do not directly acknowledge the petitions as initiators of hydraulic intervention, these interventions themselves further cement the legitimacy of the claim-making process. Urban space is a site of continuous claims for resources, these claims are made using multiple logics, be it the political logic of electoral numbers, the legalistic logic of citizenship claims, or the economic reasoning of paying potential. These logics are not unidirectional as the services are then again used as tools for further strengthening those vary logics. Similarly, citizenship also gets strengthened with infrastructural claims, thus making cities become sites wherein "continual re articulations of the relationships and sites through which citizenship is constructed" (Staeheli,2011, p.393)[ccxliii].

Urban Citizenship in Neoliberal Times

Neoliberal shift in public policy started in the global south around the 1980s which led to a shift in the mechanics of public service delivery. Although the influence of neoliberal restructuring has been very context-specific due to local political and social structures, one can see some patterns in terms of the broader agenda of urban renewal process (see Ong, 2006; Pal et. al., 2021; Maringanti, 2012; Coelho et al. 2020).[ccxliv] [ccxlv] [ccxlvi] [ccxlvii] There have been studies on the variegated nature of neoliberalism, mainly through the context of the nature of local state (Brenner & Theodore, 2002)[ccxlviii]

Neoliberal state impacts the qualitative nature of the notion of citizenship (Haque,2008)[ccxlix] as described by Dagnino and Escobar (1998:22)[ccl], "neoliberalism is a powerful and ubiquitous contender in the contemporary dispute over the meaning of citizenship and the design of democracy." States have moved away from being the provider of services to the interlocutors of regulators, turning into a form of the manager. This shift has changed the nature of citizenship in the neoliberal state where the people are turning into a hybrid of a citizen and a client. Shift in nature of the state and through that the change in notion of citizenship has been a crucial feature of the neoliberal shift in governance. A key feature of neoliberalism is the idea of self-governing citizen that engenders the debate around the norms of citizenship (Ong,2006, p. 9).[ccli] As Nikolas Rose(1999)[cclii] puts it, “neoliberalism is a mode of governing through freedom. It makes the population free of any collective sense, and the individual becomes not just a citizen but a self- enterprising citizen subject.” The individual nature of citizenship is seen both in the policy and in the enactments of citizenship, as the case of the water governance in Shimla will show.

In response to global demands for capital, as well as the political interest of the central government to keep a tab on the urbanization process, central government had introduced the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) scheme in 2005, which intended to increase the participation of private sector in the urban services and governance process (Kamath, 2006).[ccliii] This scheme extended state-led urban renewal in 67 cities compared to the 1993 Mega-City Scheme, which focused on the five largest cities with an emphasis on infrastructure(Chakravorty, 1996).[ccliv] Renewal processes have not benefited the least vulnerable proportionally, as the focus of investment has been large infrastructure in cities instead of focusing on last mile service delivery (Mukhupadhyay, 2006).[cclv] At the same time, a new form of urban governance is emerging in cities in sync with the urban renewal process. There is an increased involvement of nonstate actors in the governance process as urban renewal programs insist on the 'citizen' participation. It has led to a sort of coup by middle class and urban elite groups to claim a share of power(Ghertner, 2011).[cclvi] Simultaneously, in the name of capacity building of urban local bodies, large consulting companies have been allowed as consultants to participate in the governance process. With few large companies participating in this consulting process, there has been a templatization of the governance because of the economies of scale. Because of this, a contradiction emerges in the governance process where it has to negotiate between the variegation of the citizens' participation and the uniformity of consulting companies. This contradiction is visible in the scheme's implementation as, on the one hand, there is a push for inclusiveness with an emphasis on citizen participation and affordable housing for the poor. Still, simultaneously, the state is pushing for the bond markets and borrowing from the markets as a tool to get the financing.

Institutional change in water supply in Shimla by the creation of SJPNL (Shimla Jal Prabandhan Nigam Limited)[55] can be classified as the 'Second wave' reforms (Smith, 2004)[cclvii], wherein instead of privatizing municipal water supply, the public sector water supply is restructured through the ethos of private sector principles. Large cities, which have been the first laboratories of neoliberal change, initiated attempts to privatize the water supply system, and saw resistance from both the employees of public water supply authorities and the citizen groups (Ranganathan, 2014).[cclviii]

Technologies of government see a shift from the subservient citizen participating in the culture of petitions to a self-sufficient citizen practicing approaches like arranging private tankers, foraging for water, and the mechanisms of water conservations not through the logic of ecology but through the logic of dealing with the crisis. This shift in the nature of citizenship from exclusion to universalism gives a distinct understanding of the practice of neoliberalism from colonialism.

Citizenship is produced for and by the state. Case study of Mumbai by Nikhil Anand (2016)[cclix] shows this everyday reproduction of citizenship through claims about water. Urban citizenship, in this case, acts as a vehicle to move through the assemblage of urban actors, from the municipal councilors to the hydraulic engineers. To deal with different actors, people take different roles, from gendered 'domestic public' to a counselor to the rights seeking protesting public to customers of water for the state. In this case, access to water becomes an instrument for seeking legitimacy for their living spaces, and simultaneously using the legitimacy for the living spaces is used to claim access to water. Case study of Bangalore's urban fringe by Malini Ranganathan (2014)[cclx] shows that access

[55] A company incorporated in June 2018, jointly owned by the Government of Himachal Pradesh (49%) and the Municipal Corporation of Shimla (51%)

to government water supply becomes an instrument even for the propertied classes living on the urban fringe to claim legitimacy by the state.

Citizenship is produced at two points, at the bottom by claims and at the top, which uses them for their agendas. During the assembly elections campaign in 2017, candidates spoke about the provision of 24*7 water supplies in Shimla, although it was not mentioned in their manifestos. In municipal election preceding the assembly election during the same year, the congress manifesto specifically mentioned a 24*7 water supply. BJP spoke about proper drinking water supply with a focus on 24*7 water availability.[56] Political campaigns, including manifestos, give a picture of the political party's ideology and strategies, and discourses built around the infrastructural aspirations. In my study, water corporatization is legitimized in the form of public pressure, as officials argue that the people want 24*7 water supply and it will cost money, so there is no choice but to increase the tariff. But simultaneously, protests around the water bills are regarded as a nuisance, as the protests in the city demanding the water tariff should come down are called people with political agenda and vested interests by the officials. Some officials have said that the high tariff is necessary due to the technical complexity of such system. According to a retired engineer of the Municipal Corporation, "We are supplying water at an elevation of 1500 meters, which is unheard of anywhere in the country. The cost of supplying one kilolitre of water is about Rs 100. Therefore, naturally, the cost of water will be high. The focus should be on water conservation like rainwater harvesting and reuse of the wastewater."

Similarly, on the question of universal access to water, the same technical challenge is argued, and people are blamed for not being able to afford water. Officials blame the media

[56] Himachal, D. (2017, June 16). Will Shimla Surprise? Divya Himachal. Retrieved July 1,2017, from https://www.divyahimachal.com/2017/06/will-shimla-surprise/

too, arguing that the news is shown immediately without giving any time to solve the problem. Thus, these vested interests always try to impact the water service delivery without doing anything positive.

Participation under neoliberal citizenship helps in forming new sociability where social relations are organized in the form of paying customers. Here, people recognize each other as having valid rights as long as they are customers. Technologies of neoliberalism like water meters themselves help in "inculcating certain calculative dispositions and modes of subjectivity that contributed to the making of the 'responsibilized'(Rose, 1999)[cclxi] citizen. "(Robins, 2019)[cclxii]

Performing citizenship has both spatial and class variation. In wards dominated by the middle class such as Sanjauli and Vikasnagar, people would call the councilors in the morning if there was a delay in water supply. As one councilor mentioned that now she doesn't receive such calls and people directly call the SJPNL customer care to deal with minor delays. But when the waits are long, generally, people again contact the councilors to raise the issue with the company's senior officials. This is not the case for the low income area of Krishna Nagar area, where people continue to contact their councilors and water ‘key-man’ to complain about water disruptions. Thus, there was variation within the city regarding how urban citizenship is claimed. This variation becomes more visible during the crisis.

Citizenship during crisis

These claims about access to water were even pronounced during the 2018 water crisis. During that time, alliances were formed between different classes of people in the city as the scarcity of water which used to have spatial variation[57] now became universal. There were protests in different parts of the city with different methods. Water is being distributed to VIPs, said a person during the water crisis in 2018. And the wards with the ruling party are getting water through tankers. Tankers become an infrastructure of efficiency for politicians. Water agitation in June 2018, people made *chakka jam*(Road Block) in Kusumpti. They alleged that the corporation indulged in pick-and-choose policy for distributing water. Even, the timing was not fixed. Thus, people had to take leaves to fill the water. In this entire imbroglio, women workers had to suffer the most by balancing the additional responsibility of filling the water.

In Krishnanagar slum area, people burned the effigy of the Mayor. They said that they had not received water for the past seven days. People were getting water from baodi (Local Streams) from the Bemloi area of Jakhoo Hill. Local councilor of Jakhoo blamed the lineman when it was found that some influential apartment complexes are getting out of turn water. Judiciary also participated in the water crisis through its sou moto jurisdiction. Himachal Pradesh High Court located in Shimla took up the case of water crisis and passed some crucial rulings. Court prohibited the municipal corporation from distributing water by tankers to any particular individual and asked it to provide the available water supply to the

[57] There was a variation in the water supply in different wards, As per the data available for 2017-18, in Vikas Nagar ward which house the government officials, the water used to come alternative day for 8 hours. In the fringe wards like Fingsak, it was for 4 hours once every 3-4 days

general public.[58] The High Court concluded that the crisis was escalating due to poor management of the water distribution, for which it focused on the functioning of keymen.

"Lift Schemes, which presently supply water to Shimla town, is one of the two aspects of the matter. The second and perhaps at present the more relevant aspect is the distribution of whatever water is available with the Municipal Corporation, Shimla. It is an open secret that the Keyman is the Key as far as the distribution of said water to the ultimate consumer is concerned. He is the first and the last person between the water available for distribution and the consumer. If he performs his duty honestly, prudently, and skillfully, he can ensure equal distribution of water to all, but if a Keyman happens to abuse his position, then the results can be disastrous." [59]

Thus, the High Court ordered the creation of a WhatsApp group of keymen to monitor water distribution and ordered that each keyman be accompanied by two police personnel while turning on and off the water supply.[60] Involvement of the high court during the water crisis was unprecedented, as the court was involved in the day-to-day management of the crisis. Here, the location of Shimla produces multitudes of actors who claim control over the city in various ways. When the situation somewhat normalized the following year, a resident lawyer gave credit to the court instead of the government," it was he who turned the table on the government last year when (during the water crisis in 2018). After that, things change drastically." Lawyer was referring to the involvement of The High Court during the water crisis when it managed to take control of the situation by passing orders related to the day to day functioning of the water supply wing of the municipal body. On the other hand a Keyman pointed out that they have faced unbearable pressure from all sides during this time. The challenge is reflected in this paraphrased view that they mentioned, “On one

[58] https://indiankanoon.org/doc/36107112/

[59] https://indiankanoon.org/doc/6125458/

[60] https://indiankanoon.org/doc/6125458/

hand we can't say no to the influential people of the area but it is difficult to say no to the areas we have been serving for a long time including in our own localities. But what can we do when there is no water. Due to this water scarcity we tried our best but got all the abuses."

Materiality of Scarcity: Infrastructural citizenship

Figure 27 Image of the lion head water taps in Shimla on the left (source: Himachal Watcher)[61] and the cluster of pipes near the Vikas Nagar locality of Shimla on the right(source: Self)

Side-by-side view of two types of water infrastructure tells a story about the multitudes of articulation of power that marks the urban infrastructure. On one side, the lion head water taps mark an imprint of the colonial power in the city, hiding the articulation of the citizenship of the colonial subjects through the petitions which made the city's water supply. On the other hand, it is the bundle of pipes that tells the story of the incremental nature of the infrastructure. Thus, both represent the materiality of the relationship between people and the state.

[61] Your News. (2015, January 26). Shimla's Lion-head water taps – British era heritage left in ruin. Himachal Watcher. Retrieved August 5, 2017, from https://himachalwatcher.com/urnewz/shimlas-lion-head-water-taps-british-era-heritage-left-in-ruin/

"Infrastructures are neither ontologically prior to politics nor are they merely effects of social organization. Infrastructures are flaky accretions of sociomaterial processes that are brought into being through relations with human bodies, discourses, and other things (sewage, soil, water, filtration plants)." (Anand, 2017, p.13)[cclxiii]

Punjab District Gazetteer in 1904 mentioned the water supply issue in Simla," Of late years, the water supply has been inadequate to the needs of Simla."[62] Water shortages also led to its monetization in the guise of conserving limited resources. Water tax started in the city in 1900 with Rs. 2% per year on their property, generating value of about Rs 4951. In addition to it the Punjab sanitary board in 1926 produced a report arguing for metering the water connection. It took the example of Shimla, which started metering in the 1900s. Report argued that people with piped water connections waste a lot of water due to the fixed-rate water taxation system. In a water-scarce region like Shimla, this wastage is almost criminal. Municipal Committee went even further by arguing that an unmetered water supply system is causing water famines[63] in the town. It follows the liberal economic logic of commodification, which is rooted in the idea that commodification and its associated value rationalize the use of a resource. Thus, they recommended a metering system in which water usage would be monitored more frequently at the dwelling level. Moving beyond the approach of rationalizing the need for meters, report also recommended attaching metering requirement to the grant in aid provided by the state government to the municipal bodies.

[62] Punjab district Gazettes volume 8Adistrict Simla, 1904

[63] The water scarcity in Shimla were referred as the water famines during eh colonial time. As P. sainath a prominent journalist quips that there are no famines in Maharashtra after 1963 because the government deleted the word famine through an act called 'The Maharashtra Deletion of the Term "Famine"Act, 1963", similarly the word has gone missing from the lexicon of the municipal government in the city.

Simla Improvement Report 1917 in the appendix 9 of recommendation by the engineer in charge stated that the committee's focus should remain on the water supply arrangement, as water distribution within the city does not need much of the intervention.

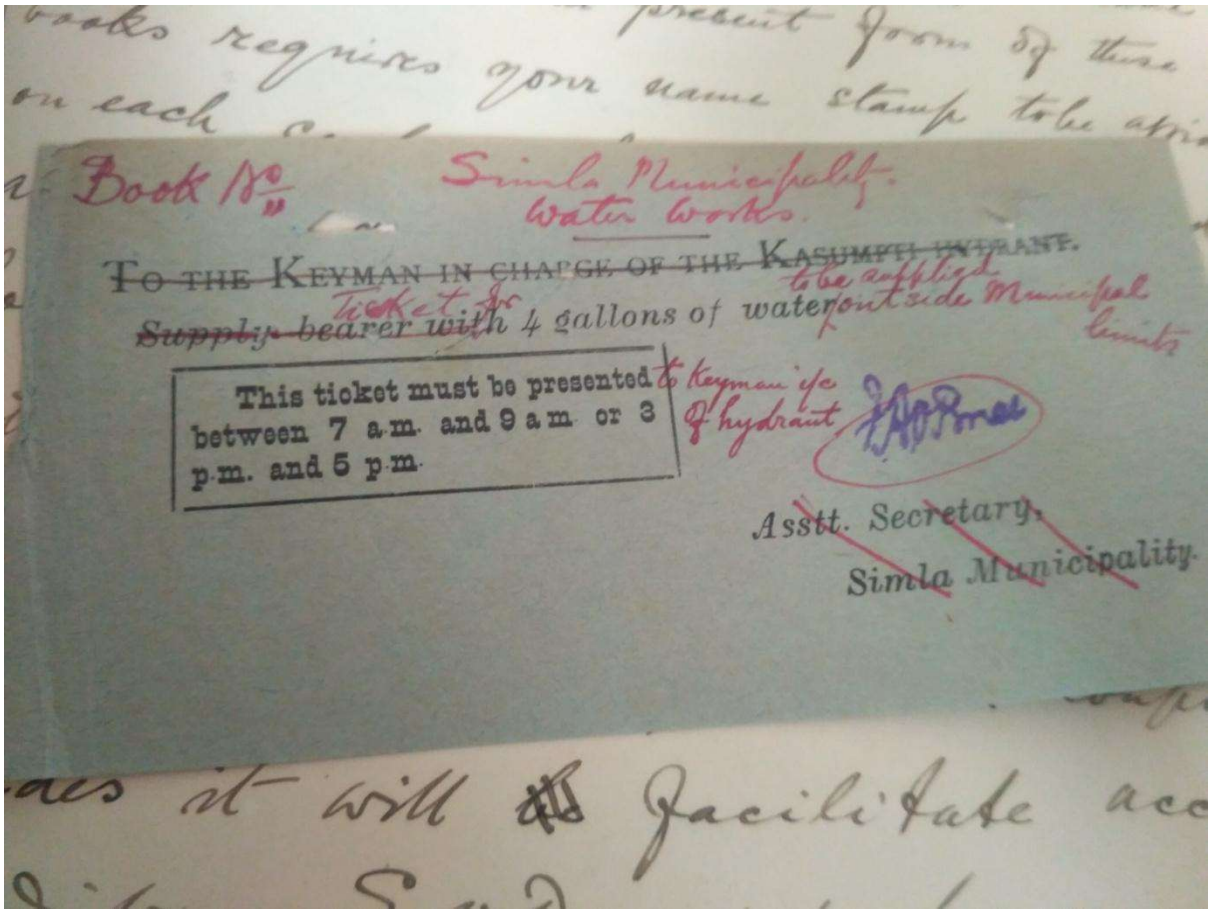


Figure 28 Water token for Shimla's suburbs (1930s) (Courtesy: Himachal State Archives)

Sr No	Project Name and Code (List all projects to achieve universal coverage in the City separately for water supply and sewerage)	Infrastructure Improvement			
		Change in Service Levels			Estimated Cost (Amount in Rs.Crores)
		Priority number	Year in which to be completed	Year in which proposed to be completed.	
Water Supply					
1	Providing and fixing of Bulk Water Meters on main Water supply Lines	1	2015	2016	3.00
2	Procurement of Leak detection Machine for Water Supply Pipelines.	2	2015	2016	0.50
3	Augmentation of Lift Water Supply Schemes at Giri, Chair, Ashwini Khad, Gumma, Cherot, Jagroti and Seog Catchment	3	2015	2016	8.00
4	Providing and replacing of existing Sluice Valve of different diameter within Shimla city	4	2015	2016	2.00
5	Installation of Filtration plant for purification of water of natural springs at 6 locations	5	2015	2016	1.00
6	Providing and fixing of AMR ready Water metering for Domestic, commercial Water Meters within Shimla City.	6	2015	2016	20.00
7	Providing Supplying of water ATMs at each ward within Shimla City. (25 Nos) with 10000 Ltrs Storage Tanks	7	2015	2016	2.00
8	Provision of Water Tankers 2 nos 4000 ltrs and 2 nos 8000 ltrs	8	2015	2016	1.00
9	Rejuvenation and Construction of Water tanks at Different Locations in Shimla City.	9	2016	2017	1.18
10	Development & maintenance of natural nallah/spring or bowri	10	2016	2017	0.84
11	Providing Automation of all the Water meters within Shimla City by AMR System.	11	2017	2018	30.00
12	Rehabilitation of Water Supply for Shimla City.	12	2015	2020	136.93
11	Providing, Supplying, Laying, lowering Water Supply Pipelines of various sizes at different locations within Shimla City	11	2018	2019	3.20
12	Replacement/rejuvenation of existing water supply lines	12	2018	2019	0.67
13	Provision of water supply lines, pumping machinery in ward no. 8, 10, 12, 16, 21, 24, 14, 6, Shimla as per Estimate prepared	13	2018	2019	2.00
14	Improvement and refurbishment of existing water supply system from Sanjauli to Ridge Area with Ductings and Trussels	14	2018	2019	10.00

Figure 29 Priority list of water supply in Shimla as per the SAAP report under AMRUT

Idea of scarcity produces the new materiality of relationship between the state and citizens which further reinforces the idea of scarcity. Focus of the water policy in post-independent Shimla has been the same. Supply has been a priority in policy documents and narratives produced by the government there the distribution is generally considered secondary. According to municipal engineers water distribution is assumed to be a minor technical issue in front of the water supply challange. But when we ask people living in areas who experience water shortage regularly, they can't comprehend the policy of supply side priority by the state. Thus, the water supply policy is still highly colonized in its strategy. As is evident in the priority of the Shimla water system (Fig 29), the same approach of priority is followed even now furthering the spatial inequalities that were established during the colonial era.

"Scarcity is not the result of any absolute lack of a resource but rather of the decision by society that it is not prepared to forgo other goods and benefits in a number sufficient to remove the scarcity"[cclxiv] (Calabresi & Bobbitt, 1978, p.22). Thus, scarcity causes a resource allocation problem as it forces society to confront the question of what criteria society follows to allocate the resources among its constituents. Instead, it is a techno-political strategy used strategically for some goals. In the context of the water situation in Shimla, these choices are made by the state through engineering interventions. There is a heroic euphoria around water provisioning in the city portrayed as an engineering marvel. This euphoria is rooted in the idea of water scarcity in the city, which causes an eternal search for the water sources, taking the search for water sources ever further away from city. This scarcity is also present in the discursive plain of the policy narrative.[64] Textual reading of the

[64] PWC. (2016, June). World Bank Surging to a smarter future "ICT Enabled Integration for Green Growth."

policies around the water interventions shows that the idea of scarcity was never quantified, and it was always a perception, and whatever data existed was from the source level without any measurement at the household level availability(page 128, Shimla Draft Development plan).

Scarcity pushes for supply-side interventions overlooking the demand-side understanding and ultimately moving the focus away from the notion of affordability. Pride in providing tap water to such a height ignores the fact that such water then needs to be distributed and made available to people. This pride in the engineering feat was present not only in the engineers and technocrats but also in the residents, as one of the former elected members of the municipal body explained to me that this water system is remarkable, unlike nowhere in the country. Maybe in the world, the water head (difference in the elevation of the water source and the storage) is at such a high elevation. But simultaneously water shortage is also a concern for the locals. In a survey (Das, 2014)[cclxv] of tourists, water scarcity was seen as the biggest problem, with more than 30% agreeing on it. This continuous articulation of scarcity produces a silent consent for further commodification of water, as cost becomes a check against the wastage of water creating what Donald Moore calls, 'emergent interests' through consent (Moore, 2005).[cclxvi]

State has always argued that the water charges in Shimla have not been intended as a revenue instrument but as a deterrent to usage. Simla Improvement Report 1917, mentions that expanding free water by 25% would happen after the complete operationalization of Chair water supply project. SAAP (State Annual Action Plan) report in 2015-16 mentions that officials accepting the Scarcity of Water with "Bulk meter should be a priority to check the

losses, but meters at a household level should be discouraged as the water supply is intermittent." This led to the priority of measuring the losses of bulk water supply. "An appropriate strategy to meet the O&M costs has been thought of through user charges, effective billing and collection, tariff rationalization, smart metering, reduction in NRW, green fees, and saving costs through energy conservation and efficiency improvement in pumping stations and other electrical installations. Effective asset management strategies will also be evolved to generate revenues from the land assets possessed by the ULBs in the waterworks premises by enhancing the amenity values by utilizing the surplus space for green space development, child-friendly parks, etc. "(SAAP report 2016-17) According to the priority order (Figure 14), bulk water meters is first one and the improvement of existing supply is last. As Samer Alatout (2008) points out, these small utterances of the state have a deep significance in terms of both the nature of the state as well as the formation of the citizens around that state. "It is important to remember that the very hegemonic character of scarcity is reproduced in the daily practices that take it for granted, in utterances that do not put it into question. Moreover, the very relations of power and government that scarcity ushered in are being reproduced in these instances. Retelling its history of emergence denaturalizes the notion of scarcity and sheds light on those very relations of power that made it possible while being shaped by it."[cclxvii](p.979)

Due to the scale of water scarcity and its reproduction through policy utterances has transformed the relationship between people and the state because it is only the statist space which is a viable option to solve this crisis (Altout, 2008). This transformation has led to the closing of the possibilities for individual or community interventions in water provisioning, ultimately creating an infrastructural subject who sees water how the state

sees it, from a technical point of view. During my conversations with people, many talked about the availability of water in the engineering lexicon LPCD (liters per capita per day) and MLD (million liters per day). Due to water scarcity, these terms have been added to the popular lexicon through news reports and their interactions with the engineering department. This lexicon merges the idea of water availability with a measurable technical notion of water infrastructure. Thus water access becomes exclusively a factor of the measurable municipal water supply and if there is a shortage, it is the shortage of only the municipal supply. Scarcity narrative in Shimla is based on the availability of 'safe' drinking water. Shimla Municipal Government has placed signs in streams about unsafe consumption. Through these signboards, there is an attempt to centralize the water supply. A lady washing clothes in one of such streams in Krishna Nagar said that she has never seen anyone check the quality of these water sources or take any sample. But the municipal body has always warned them against the consumption of this water through warning signs placed near water streams and baolis. Thus, at least for drinking purposes they only rely on the municipal water supply. Thereby citizenship is also transformed around the measurable water. This measurable water frames the question of citizenship around the use of government technologies to create a subject (Focoult,1991).[cclxviii]

Water mediates the relationship between people and the state. Water in this frame becomes a political field where contestations for rights occur. The state uses the notion of water scarcity to formalize the relationship between the state and the people. First, this formalization was done in colonial times to legitimize colonial rule. Later in neoliberal times, this formalization produced the legitimization of the extractive nature of the regime. Marginality is produced by the actions of the state rather than by nature. Studies on

citizenship (silver & McFarlane, 2019)[cclxix] explore the margins as to where the notion of citizenship becomes fuzzy. New technology is an instrument of citizenship as opposed to what Von Schnitzel(2008)[cclxx] explains in the case of South Africa, where there was resistance to incorporate new technology. Through this resistance, citizenship is proclaimed, which is the citizenship of resistance. But infrastructural citizenship goes beyond the idea of protest-based citizenship, where the claim over citizenship becomes an event. Instead, citizenship is much of a lived experience that has to be negotiated every day. People either use the DIY approach to citizenship as described by James Holston(2009)[cclxxi] through the concept of insurgent citizenship, where people build the infrastructure first and later formalize it through various strategies. Thus, people attempt to seek a permanent solution through different kinds of claim-making strategies. Case of hydraulic citizenship[cclxxii] In Mumbai by Nikhil Anand (2017) is one such example where access to water is negotiated through everyday relationships that go beyond the terrain of engineered water relationships. In the case of Shimla, one can also see the acceptance of the technology or push for the technology as a tool to claim citizenship, where one wants to belong to the larger projects of the state. This is built through the notion of scarcity, where exclusion also means uncertainty and denial of the service. This work shows the making of citizenship not at the point of fuzziness but at the heart of the urban. The techniques of acquiring citizenship in neoliberal and colonial periods were attempted towards individualization. But as an externality, this approach led to the formation of new groups, simultaneously giving power to the state to determine its relationship with the people. In the end, these alliances formed for the water demand are short-lived because of the narrative that the scarcity produces a competitive struggle for water. This struggle creates further narratives of the theft, collusion between other groups, illegal connections, etc.

Idea of infrastructural citizenship is about accepting the multiplicities of the approaches to access resources. Citizenship should be about participation in the creation and use of infrastructure. Claiming right to the city (Harvey, 2012)[cclxxiii] not just to access the city as water services, but to change and modify it not through the intervention of external forces but through the alliances of the people of the city.

Conclusion

In this chapter, I used the framework of 'infrastructural citizenship'(Lemanski, 2020)[cclxxiv] to argue that water scarcity restructures the relationship between society and state, mediated by the (in)access to the public infrastructures of water. Through colonial archives of petitions and the performance of citizenship in present-day Shimla, I have shown that citizenship moves beyond the juridical-legal relationship between the state and the people. I argue that relationship producing water infrastructure needs to be understood through the ideological structures existing in the society, as we have seen in the context of Shimla, wherein we cannot study the relationship between water scarcity and infrastructure without delving into the question of colonialism and neoliberalism. Performance of this citizenship produces and cements the people and the state through the infrastructure, whose repercussions are felt for a long time. This relation produces a variegated form of infrastructure embodying the contestation within and produces the "infrastructural imaginary" to legitimize the hegemony of infrastructure. I have shown how water plays a mediating role between people and the state. Water in this frame becomes a political field where contestations for rights occur. State uses the notion of water scarcity to formalize its

relationship with the people. First, this formalization was done in colonial times to legitimize an outside rule. Later in the neoliberal period, this formalization produced the legitimization of the extractive nature of the regime. The marginality is produced through the actions of the state rather than by nature. Thus, I attempted to center the idea of infrastructural citizenship within the multiplicities of access to resources and the approaches to those accesses. Citizenship should be about participation in the making and use of infrastructure, instead of the competition for these resources.

Chapter 3: Impossible Infrastructure: Understanding the water crisis in Shimla

Introduction

As I started my field work in Shimla, the queen of hills was in the news about the water crisis, with the media calling it Shimla's worst water crisis. As a regular visitor to the city, I had faced a water shortage since my childhood days when local guest houses used to ration hot water during the winters. Many times hotel staff complained that they had to queue at the pump to get water for guests or wait for the water tankers if the situation got worse. It seems like they transformed into the new age *Bhishti*[65](Traditional water carriers) reincarnated through the failure of the modern water infrastructure, which had once sent this occupation into oblivion. When enquiring about water shortage from locals, I would get responses depending on the season. In summer, shortage is due to the lack of snowfall in the previous winters. In monsoon, it is the silt that blocks the pumping of water or the landslide that damages the pipelines, and in winters, it is the mixture of lack of rainfall and the frozen water supply. City's vulnerability to seasonal cycles feels like a unique feature of the region, adding to the Himalayan grandeur, where everyone seems insignificant in front of the majesty of nature in the mountains. On my recent visit again, hotel owners complained about the unavailability of water. I have also heard tales of dreaded water supply from the residents, who complain about getting unreliable water supply despite

[65] https://en.wikipedia.org/wiki/Bhishti

paying for the most expensive municipal water in the country. High cost of the municipal water is due to Shimla's precarious terrain combined with a lack of robust water source within the proximity to the city. Due to these two factors, there has been a series of high value investments in the urban water supply with only a little improvement in quality of service. In this chapter, I will explore why the water crisis in Shimla is a recurrent phenomenon despite continuous infrastructural interventions? What do these interventions do in their failure to solve the water crisis?

This chapter will look at the hegemonic vision of development supported by continuous building of infrastructure. Whie there exists literature on resistance and opposition to development (Von Schnitzler, 2016; Drew, 2014)[cclxxv] [cclxxvi], the support for infrastructure investments is ever-present among political actors. Despite the infrastructural regime's extractive foundations, aspirations of improvement of services through the development of infrastructure projects play a key role in drowning down the voices of resistance. I would try to make sense of the discursive side of infrastructure, i.e., legitimizing large infrastructure projects to dedemocratize the city.

I will begin by mapping the notion of scarcity in the development of water infrastructure in colonial Shimla and arriving at the present water crisis. Infrastructural journey of water in Shimla is accompanied by redrawing of the institutional structure of the water provision, first through centralized approach of the colonial municipality where people of certain social strata controlled municipal functioning and later transforming into the multi-institutional fragmented regime of the post-independent India, where the push and pull of control created many institutions where one department deals with bulk water and another with the distribution of the water in the city, and finally moving towards a central body of a

technocratic neoliberal regime. Change in the institutional structure is legitimized in the name of scarcity, but ultimately enables the infrastructural regime of the time. In this chapter, I look at the 2018 water crisis in Shimla to understand the logic of the state response. World Bank funding of the large hydro project in 2018 coincides with the creation of a parastatal body named SJPNL (Shimla Jal Prabandhan ltd.), depoliticizing the water pricing regime by taking it away from the elected body to a technical body, but the official response to the logic of this creation lies in response to water crisis in Shimla. I will argue that this shift in governance structure has impacted the hydraulic relationship between people and the state. Cities in South Asia are the sites of "privileged theatres for different forms of demonstrative politics that are often but not always democratic. Cities are the site for the performance of contentious politics." (Tawa Lama-Rewal & Zerah, 2011, p.3)[cclxxvii] There is a production of a solutionist vocabulary, and anyone outside is portrayed as obstructionist. Encouragement of public participation is always about participating in this solutionist regime. This leads to further shrinkage of political space, as political space is used to affirm the differences (Swyngedouw, 2015).[cclxxviii] Slavoj Zizek (2001; 2006)[cclxxix] [cclxxx] terms it post-political, a political formation that forecloses the political. Under the system, complexity of technology removes people as a stakeholder in the decision-making process.

Technocratic regimes bring about a rigid government logic in which the focus is only on technical and managerial aspects of the government, and foundational questions move to the foreground. Thereby, the solution to any problem becomes a performance in which the public becomes an audience who watches the infrastructure making without any participation. Stripping of the people's agency through their expectation of the state in itself, like Zizek, argues that the government has been reimagined in the managerial form,

where there is no disagreement between the people and state on the nature of the functioning of government. This produces a form of performative government in which the debate has moved away from the political function. There has been an annulment of dissensus (Ranciere et. al., 2001)[cclxxxi]. Studies on the interrelationship between the state, society, and infrastructure focus on the articulation of claims made by the people within the modernist infrastructural discourse (Robinson, 2006).[cclxxxii] The case study in this chapter would argue that without questioning the infrastructural discourse, the crisis would continue to repeat itself endlessly, as the crisis events help reduce the decision-making process for infrastructural projects by restricting detailed debates and discussions around the projects (Olesen, 2020).[cclxxxiii]

In this chapter, I discuss the notion of scarcity in the context of Shimla. I draw from theories of governmentality to situate the discourse surrounding scarcity. I also situate the notion of scarcity as continuing from the colonial roots of the city's founding. Second, I argue that this permanent notion of scarcity produces a continuous cycle of water crisis events and infrastructural fixes through the case study of the water crisis of 2018. Lastly, I explore the idea of incomplete infrastructure (Guma, 2020)[cclxxxiv] and through its exploration introduce the concept of the aspirational (de)politics produced by incompleteness, thereby perpetuating the endless cycle of infrastructural interventions.

Scarcity and its crisis in Shimla

Idea of water scarcity has been discussed across the disciplines(Secler et. al. 1999; Postel, 2000)[cclxxxvcclxxxvi], where the notion of scarcity is assumed to be given. Policy making is done based on the idea that the ever-growing consumption of water with increasing population has been the cause of water scarcity, making scarcity a natural condition determined by simple rules of demand and supply (Liodakis, 2017)[cclxxxvii]. This singular approach does not consider the structural factors behind the making and the ensuing politics of the scarcity. Scarcity is regarded as a temporary condition in the technologically deterministic world in which advancing technology would solve the challenge of scarcity (Gowdy, 1984).[cclxxxviii] Scholars like Panayotakis (2013)[cclxxxix] argue, "To understand whether, how, and why the parameters of scarcity, as well as people's experience of scarcity, keep changing, one has to pay attention to the social relations structuring the socioeconomic system in question and to the logic according to which this system functions" (p. 186). Although this approach advances the understanding of scarcity from an economic model to a social phenomenon, it fails to elaborate on the permanent state of scarcity under a capitalist regime, where technology and discourse go hand in hand to produce the state of scarcity. There is another way to look at scarcity, a 'moment' produced through scientific rationality mixing up with the neoliberal institutional restructuring aimed at water privatization.

On one hand, the case of Shimla points towards the condition of permanent scarcity, which continuously reproduces itself within every infrastructural fix. This fits the Marxist understanding of capitalistic development, which considers capitalism an inherently crisis-prone socioeconomic system (Bayırbağ & Penpecioğlu, 2017).[ccxc] Capital moves through these crises by finding new geographies of accumulation. Here, the strategy includes

selectively inclusive rollout strategies (Peck & Tickell, 2002; Peck, 2012)[ccxciccxcii] like expanding the infrastructural access like Jal Jeevan Mission[66] to make available the individual water connection for the entire household, but with the fear of disconnecting if the household does not pay for the usage.

This expansion delays the crisis temporarily until the failure of the 'governance of alienation' (Bayırbağ & Penpecioğlu, 2017). Urban crisis in the neoliberal parlance is the material crisis (Weaver, 2017)[ccxciii] that can be dealt with through infrastructural interventions that can be seen through various urban renewal programs across the Global North and South. The approach of infrastructural development has been characterized as 'infrastructuralism,' pushing for the continuous demand for new infrastructure projects to give infrastructure a preeminent place in economic development (Olesen, 2020).

Of all urban infrastructural interventions, water infrastructure is one of the most contested ones, as it becomes a matter of right and the final frontier of capitalism (Bakker,2011).[ccxciv] As Karen Bakker (2011) puts it," water is simultaneously an economic input, an aesthetic reference, a religious symbol, a public service, a private good, a cornerstone of public health, and a biophysical necessity for humans and ecosystems alike."(p. 3). Due to the shifting of the frontier of capitalism towards smaller towns versus large metropolitan cities in countries like India (Mukhopadhyay, et. al., 2020)[ccxcv], the geography of the commoditization of water is also. This has led to the smaller cities becoming the perfect site to produce the fix.

[66] https://pib.gov.in/PressReleasePage.aspx?PRID=1694420

This cacophony of scarcity production and infrastructural fixes is most visible during extreme water shortage events that are now popularised as the Day Zero events[67]. In recent memory, the most famous of such events was Day Zero in Cape Town in 2018. Days before, the situation approaching the day zero scenario, the primary water storage infrastructure of the city failed, with critical storage reaching about 13.5% of the total distribution capacity.[68] This led to drastic restrictions in terms of water use for public and agricultural use. But like the previous water crisis, ultimate hope still remained on rainfall, which in 2005 saved the city from an even worse shortage with the euphoria around new projects that would bring additional groundwater and desalinated water.[69] Campaigns around day zero threats focused on water conservation (Robins, 2019)[ccxcvi]and reduced usage until the crisis was solved while simultaneously expediting water metering devices to strengthen the foundation of water commodification (Milington & Scheba, 2021).[ccxcvii] This imagery of new infrastructure projects and technological solutions ultimately leads to a new form of politics around the waiting for the infrastructure during these scarcity events. Through case of Shimla, readers will see the continuous reformulation of infrastructural fixes due to a continual state of scarcity events.

[67] Winter, K. (2018, 22 February)Day Zero is meant to cut Cape Town's water use: what is it, and is it working? . Retrieved April 4, 2020, from https://www.downtoearth.org.in/news/water/day-zero-is-meant-to-cut-cape-town-s-water-use-what-is-it-and-is-it-working--59765

[68] Winter, K. (2018, 22 February)Day Zero is meant to cut Cape Town's water use: what is it, and is it working? . Retrieved April 4, 2020, from https://www.downtoearth.org.in/news/water/day-zero-is-meant-to-cut-cape-town-s-water-use-what-is-it-and-is-it-working--59765

[69] ANALYSIS: This water crisis won't be Cape Town's last. (2017, February 18). News24. Retrieved April 4, 2020, from https://www.news24.com/News24/analysis-this-water-crisis-wont-be-cape-towns-last-20170218

Locating Shimla and its water

"In hot weather, this accent is exceedingly fatiguing, and as there is no stream or boulee between the Nudee and Semla, a ***Faquir*** *is stationed at the pass to give water to travelers, from whom he receives a small trifle in return…"* Based on the accounts of the Gerard brothers, British officers surveyed the place in 1817. The name Shimla came from 'Shyeamalay,' 'dark,' or 'blue,' abode, a reference to the slate house of the fakir who lived on the hill of *Jakho*, which looms over the town. Thus, the history of the city is intertwined with water.

Shimla was established by the British in 1819 as a small hill town with an intended capacity of 25000 residents. It became the summer capital of British India and later became the capital of Punjab and then Himachal Pradesh. Being the most significant mountain town in the region, it is also a major tourist destination due to its proximity and connectivity to the large urban centers of North India, particularly the National Capital Region. Growing middle class with an appetite for traveling as a leisure activity (Akihito, 2017)[ccxcviii] has changed the tourist profile of the city from a place for long duration holidays to a weekend getaway. Beyond tourism, the city is the absorbent of the surplus capital of the accumulation from the region through investments in real estate and through the youth coming to city for education in universities, boarding schools and coaching centers. Town's identity has taken many forms depending on the frame of reference from which one sees the city. But in the city's multiple lives, one thing that has remained constant is that every water project that emerged since its beginning has been touted as the city's savior with very short-lived success, thereby keeping it in the permanent state of water scarcity, as explained in the next part.

Figure 30 Location of Shimla[70]

The spatiality and the identity of the city played a role in determining the hydraulic future of the town. The location of the houses in the towns also determined power. British wanted to occupy the commanding heights of ridges to symbolize authority and power (Chatterji, 2003).[ccxcix] Shimla's elevated topography affords it a 'superior and invulnerable position that affirms the political order.' (Spurr, 1993, p.16)[ccc] To achieve the elevated position, the city was built on the Ridge, thus making it dependent on the few water streams at even higher reaches[71] and later, due to increasing demand for the growing city, to the continuous pumping from far away sources. In terms of identity, the city was constructed to evoke the memories of Europe (Bhasin, 2013)[ccci]; in an attempt to mimic a landscape shaped by generations of action that had occurred across the other side of the

[70] https://www.probharat.com/

[71] Report of the Simla Water works Committee,1904,

world (Miles-Watson, 2012).[cccii] The 19th century saw a focus on the development of the water supply system as the increasing density of the towns started causing the spread of infectious diseases in Europe.The focus on the cities as the site for the spread and control of diseases started in the 20th century leading to the emergence of new institutions and infrastructures(Treffers et. al., 2021).[ccciii] Gandy (2004) uses the term bacteriological city to describe the emergence of the comprehensive water supply system in the 19th century in the cities across the world.[ccciv] This led to the beginning of massive investments in those cities' water supply and sanitation infrastructure. In the case of India, this response emerged with the spread of the plague in cities like Mumbai. The plague of 1896 in Mumbai and later the constitution of the Indian Plague Commission in 1898 had a far-reaching impact on the urban processes in the region. In the book 'The Making of Indian Metropolis,'[cccv] historian Prashant Kidambi (2016) shows how the plague created major changes in the governance of the city by the emergence of new institutions like the Bombay Improvement Trust. The trust drawing the legitimacy from a health emergency brought in a radical spatial restructuring of the city. The model of Bombay Improvement Trust was replicated in many other large Indian cities like Calcutta and Delhi. Shimla also had a history of water-borne diseases; the British even called the seasonal bout of Cholera around the rainy season' Simla Epidemic'(Buck, 1904, p.21).[cccvi] In Shimla, the beginning of the water infrastructure project was with this understanding as the city saw cholera outbreaks in 1857, 1867,1872, and 1875. Significant investment in the water and sanitation infrastructure started after the 1875 cholera outbreak, killing 184 people, natives and Europeans alike. [72] This outbreak of diseases led to the restructuring of the relationship of

[72] Simla Improvement Committee, 'Final Report of the Committee on the Improvement of Simla' (Oct 1875-Jan 1876)

water with the city with a push for the centralized water supply to move away from using the natural springs directly. According to the Punjab health report 1927, the annual rate of mortality due to dysentery and diarrhoea was 1.4 for the five years before the water project started in 1893, and in 1927 the yearly rate declined to 1.0. So the water service provisioning was deemed successful.

First water project came up in 1877-78; it was intended for the 16000 people of the city with a capacity of .45 MLD(Million Litres per Day). This was done by extracting spring water from 11 miles away from the Ridge and bringing it to the town through the gravitation system. The natural supply is always dependent on climatic variation, which causes this system to fall to about .27 MLD in the extreme summers and winters. Thus, large reservoirs were constructed in the city to counter this variation and bring uniformity. This project sufficed for only five years as the city started increasing in the 1880s. Thus in 1893, the first pumping system began in the city on the same springs. Its purpose was to ensure more water supplies in the reservoirs to supply the city. During this time, the city's population (without considering the floating population) rose to 25000, and the water capacity was 1.28 MLD. But this augmentation in the capacity lasted about five more years. In 1898 the total population went to about 40,000 with a requirement[73] of about 2.72 MLD. Since then, there has been a cat and mouse game of water infrastructure provisioning, which depends on the population demand and incremental increase in the water supply by tapping new water sources.

[73] This period also saw a change in the per capita requirement of water, although the Shimla municipal body only estimated 6 gallons per day as requirement but the Shimla extension committee of 1898 thought that the planning should be done with 15 gallon per day which would also include non domestic water usage.

Meanwhile, there was an acknowledgment of the shortage of water by the British as the Punjab district gazette of 1904 noted, “Of late years; the water supply has been inadequate to the needs of Shimla.”[74] As we have seen in the citizenship chapter, the narrative around the water scarcity persisted throughout the colonial period in Shimla. The legacy of water scarcity continued after the independence. Post-Independence Shimla saw a state of neglect till the creation of the State of Himachal Pradesh in 1972 due to its uncertain position as the temporary capital of Punjab. The re-formation of the municipal corporation in Shimla in 1985 further saw a push towards developing new water schemes for the city. Although the water control mechanism saw a significant shift in the new municipal body, unlike the colonial municipal body, the new municipal body didn’t control water sources and development. Instead, the state Govt managed the supply side of water through the Irrigation and Public Health department which was an engineering line department under the state government, whereas the municipal body dealt with the distribution. Still, as per the local officials, some voices for the city played a significant role in pushing the state government for investment in the water supply.

[74] Punjab district Gazettes volume 8Adistrict Simla, 1904

Water supply situation in Shimla

Water supply situation in Shimla has been in a continuous state of scarcity. This has been known at the various levels of government for a long time. We can infer this from the fact that Shimla became the second major city after Chennai to make rainwater harvesting compulsory for all private buildings in 1998.[75] Answering the unstarred question No 1947 on 07.03.2000 in Lok Sabha on the condition of the Grand Hotel in Shimla, the MoS Urban Development acknowledged the inadequate and low-pressure water supply by the Municipal body.[76]

Average water supply in the city has always been about 110 lpcd which is below the standard norm of 135 lpcd. This does not take into account the spatial inequality of the water distribution in the city. To maintain the periodic water flow, the supply has been planned in an intermittent fashion ranging from 4 hours every two days in areas like Fingsak to 8.5 hours every alternate day in places like Vikasnagar during 2017-18.

Since its inception, there have always been incidents of water shortages almost once every few years.[77][78] As an official said, since the city has one of the highest water heads

[75] Sharma, SP. (1998, November 14). Rain water harvesting made mandatory. The Tribune. Retrieved April 4, 2020, from https://www.tribuneindia.com/1998/98nov15/himachal.htm

[76] https://eparlib.nic.in/bitstream/123456789/394274/1/12055.pdf

[77] Demand for water tankers up in HP. (2003, June 5). Tribune News Service. Retrieved March 6, 2021, from https://www.tribuneindia.com/2003/20030606/himachal.htm#4

(vertical distance between the source and storage), the water supply becomes a complicated system. These events range from erratic rainfall, drying, or contamination of the water source to pump failure and even wastage of water by both locals due to the absence of a checking mechanism and the colonial-era supply lines. Going beyond local issues, the main reason cited by municipal engineers for the sudden water shortage events has been the climatic conditions that have caused disruptions in the weather cycles and the volume of snow. According to a former geologist with the Himachal government, there have been limited water sources due to the geographical location of the city. Whenever these water sources are affected, it completely disrupts the city's water supply. This was seen in the water crisis in Shimla in 2016 when the primary source of water, Ashwini Khad, became contaminated due to the mixing of untreated sewage water, which was unable to be diluted this time due to insufficient rainfall.[79] According to a former elected representative, these situations showed the lack of integrated urban infrastructure planning, leading to an utterly man-made disaster. Mayor demanded that the focus should be shifted from this project to the Giri River Project to create a new point in the infrastructural imagery. He told the media, "We made it clear(to the state government's Irrigation and Public Health Department) that the supply from the Ashwini Khad would not be accepted, and the department would have to increase the capacity of the Giri scheme."[80] Previously, city faced similar bouts of the

[78] Water: HP seeks 20-cr Central aid. (2002, May 10). Tribune News Service. Retrieved October 8, 2019, from https://www.tribuneindia.com/2002/20020511/himachal.htm#4

[79] News (2016, January 5). Shimla water supply on alternate days after Ashwani khud declared contaminated. Himachal Watcher. Retrieved 3 June, 2017, from https://himachalwatcher.com/2016/01/05/shimla-water-supply-on-alternate-days-after-ashwani-khud-declared-contaminated/

[80] Bodh, A. (2016, January 10). Jaundice outbreak reaching epidemic proportions in Shimla. The Times of India. Retrieved 15 June, 2017, from https://timesofindia.indiatimes.com/city/shimla/jaundice-outbreak-reaching-epidemic-proportions-in-shimla/articleshow/50517708.cms

disease in 2007, 2010, and 2013 due to water contamination[81] leading to the shortage events. After the 2007 water shortage, the city saw the start of the Giri lift water scheme, which, according to the minister in charge, would solve the city's drinking water needs for the next 30 years.[82]

Current Status of Water Supply

Sr. No.	Source	Installation Year	Maximum Flow Designed (MLD)	Average Flow Available for Jan – Nov 2010 (MLD)	Average Flow Available in lean period (MLD)
1	Seog Catchment Area	1875	0.23	0.25	0.25
2	Cherot Nallah	1889	3.86	2.83	2.50
3	Chair Nallah	1914	2.50	0.60	0.50
4	Nauti Khad (Gumma)	1923 & 1982	24.60	13.00	13.00
5	Ashwani Khad	1992	10.80	9.00	5.00
6	Giri River	Under test run	20.00	12.00	9.50
	Total		**61.99**	**37.68**	**30.75**

Source: I&PH, Water Supply DPR
Note: May-June are considered as lean periods

Figure 31 Water supply from different sources (GIZ City sanitation plan Shimla, 2011)

[81] Tribune News Service. (2016, January 7). Jaundice cases mount to 500 in Shimla. Tribuneindia News Service. Retrieved June 15, 2017, from https://www.tribuneindia.com/news/archive/features/jaundice-cases-mount-to-500-in-shimla-180306

[82] Rs 65 crore Giri Water Scheme to meet water needs of Shimla town. (2007, June 11). Retrieved July 8, 2018, from https://www.oneindia.com/2007/06/11/rs-65-crore-giri-water-scheme-to-meet-water-needs-of-shimla-town-1181571322.htm

Water Crisis of 2018: The Vikral roop[83] of scarcity

Water shortage has been part of the history of Shimla. With each crisis, a new infrastructure project has been conceived. Whitewash of the technocratic approach hides the politics behind the governance process. This situation reflects what James Ferguson (1990)[cccvii] describes as the "anti-politics" machine. Politics also brings about anti-political effects when it closes the space of resistance, making infrastructural intervention a completely technocratic exercise (Barry, 2002).[cccviii] I will present the case study of the 2018 water crisis in Shimla to understand the logic of the state's response. As there are multiple narratives about the causes of the water crisis, it is crucial to paint a detailed picture of the crisis beyond just the triggering event to have a holistic view of the situation.

Although water scarcity is a common feature in many Himalayan cities[84] [85], Shimla's crisis received national media attention due to the visibility of the city and the crisis happening during peak tourist season. Crisis at its peak lasted about ten days in June. During

[83] Protestors and media referred to the water scarcity taking the Vikral Roop meaning taking a formidable form

[84] Ahmad, O. (2021, January 6). Thirsty Kathmandu waits for water that never arrives. The Third Pole. Retrieved March 9, 2022, from https://www.thethirdpole.net/en/climate/kathmandu-water-crisis/

[85] Bisht, G. (2021, April 12). Amid drought-like conditions, water crisis looms large over Himachal. Hindustan Times. Retrieved May 15, 2021, from https://www.hindustantimes.com/cities/chandigarh-news/amid-drought-like-conditions-water-crisis-looms-large-over-himachal-101618255657910.html

this time, total available water was 18 MLD versus the required 44 MLD. Water shortage is not new to the city; one can see the record of the intermittent period of shortages in both the summer and winter season. But this crisis was much more intense than usual due to the combined effect of multiple shortage events in the near past. The 2018 water crisis has its roots in the 2016 jaundice outbreak that killed 30 people. Due to the jaundice crisis, the main source of water, Ashwani Khad, was shut down. State's unwillingness to clean up the infected site for two years created a vulnerable situation for the city. The problem further increased with the dry season in 2017-18, leading to the drying of the Gumma scheme. This created a situation in which the whole system collapsed despite investments in large water projects.

Through interviews with the local activists, it also emerged that excessive urbanization and increased tourism have led to construction activities in and around the water catchment area of the city. This was seen as the main reason for drying water sources. However, experts from the municipal body blamed it on climate change, causing the variation in the weather patterns. Even the Chief Minister issued a statement saying that climate change has led to the drying of water sources in any part of the state and thus this kind of situation has emerged. But residents said that the water shortage is not new, but this has always been the case in the city. The only difference for them was that the national media had picked up on the crisis this time, and because of this, the plight of the people was more visible. They were sensing the opportunity to seek a more permanent solution to the crisis, which led to protests from residents. It included both the mass mobilization in the form of a protest march through *Chakka Jam*(Road Blocks) and the demand for judicial intervention in the form of public interest litigation.

Figure 32 Chakka Jam by the residents during 2017[86](on the left) and 2018[87](on the right). The Chakka Jam strategy has been a go-to move for residents to show their anger. The precarity of the roads on the hill makes the city almost standstill due to these jams.

[86] Amar Ujala Digital Team. (2017, April 22). शिमला में पानी के लिए हाहाकार, गुस्साए लोगों ने किया चक्का जाम. Amar Ujala. Retrieved May 10, 2017, from https://www.amarujala.com/photo-gallery/shimla/chakka-jam-at-tutu-on-after-water-crisis-in-shimla-city

[87] Madan. (2018, June 2). Water Crisis Shimla : Common people not receiving water despite 7 MLD increase in daily supply. Himachal Watcher. Retrieved June 7, 2018, from https://himachalwatcher.com/2018/06/02/water-crisis-shimla-common-people-not-receiving-water-despite-7-mld-increase-in-daily-supply/

Locals also used the peak tourist season to bring attention to their situation. Tourists became an active agent in the water crisis in the city, with a floating population share of about 1/3. On one hand, excessive tourist footfall during the summer months was blamed for worsening the water crisis, but on the other hand, the pleas to the tourists (like the one in Figure 4) put pressure on the state government to resolve the crisis. Although one hotelier claimed that tourists were not much affected by the crisis as they are not connected to Shimla's municipal supply, most hotels got water from tankers from outside the city. Still, with the media glare and the city's image on the line, the administration responded with a series of actions discussed later in the chapter.

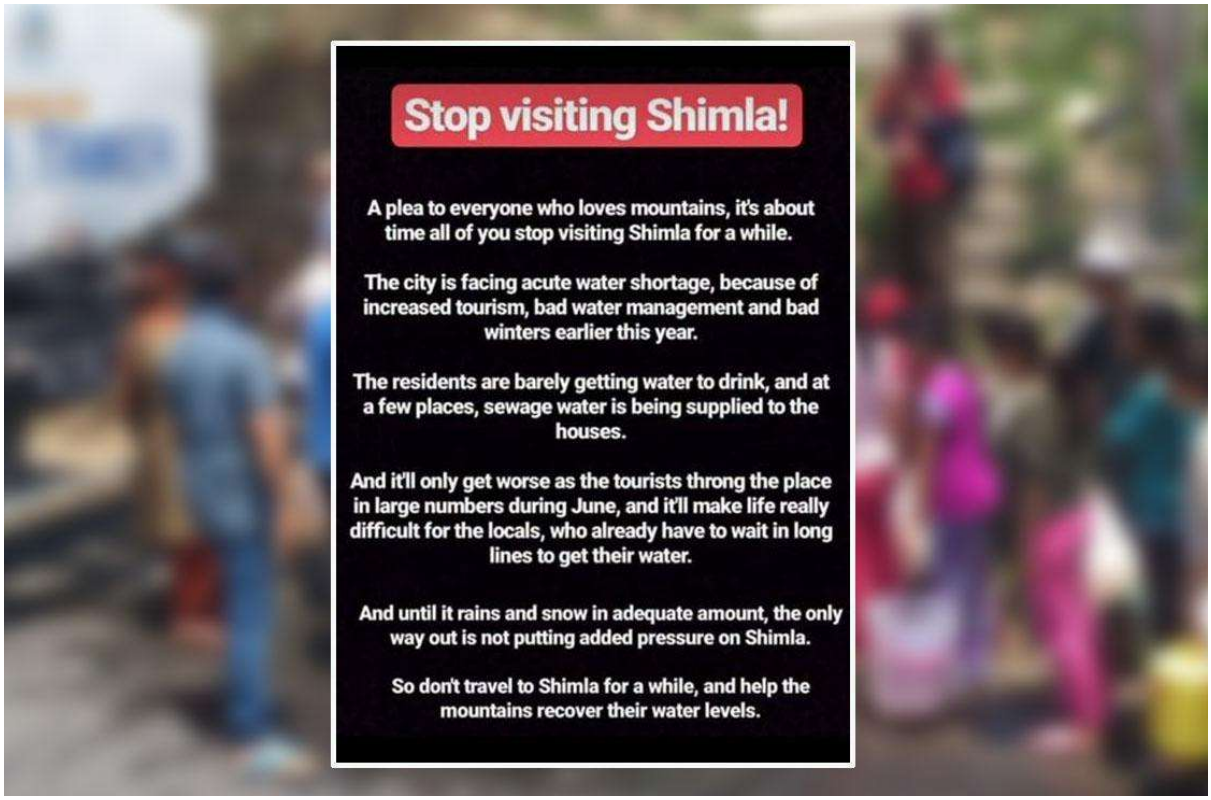


Figure 33 Such pamphlets discouraging tourists from coming to the city were seen on social media to draw attention to the water crisis[88]

Along with civil society groups, political parties also participated in the protest using innovative instruments such as marching with empty buckets to the municipal corporation. A political activist said that the ruling party won on the promise of a 24*7 water supply and still they have not received water for the past 8-9 days. Spaces for resistance emerge within the technocratic regime in new political communities. These political communities came together on the issue of water supply.

[88] Desk, (2018, May 29). 7 days of no water leave Shimla locals angry, tourists asked not to visit. India Today. Retrieved June 7, 2018, from https://www.indiatoday.in/india/story/7-days-of-no-water-leaves-locals-angry-tourists-asked-not-to-visit-1244613-2018-05-29

State's response was two-pronged; first, it created a new parastatal body, the Shimla Jal Prabhadhan Nigam Limited (SJPNL), which took over from the Municipal Corporation. SJPNL is a specialized technocratic body. Tanya Murray Li (2007) has explored how this technocratic regime of governance[cccix] creates a new class of people who become decision makers in the new governance regime. A clear demarcation is created between the two groups. Through SJPNL, the democratic space in the decision-making process is reduced. This specialized body is dominated by engineers and civil servants and has very little representation from elected members. This parastatal body shifted the location of the decision-making process from the local level to state level, as the appointment in the organization was done by the state government. The SJPNL was the successor of the Greater Shimla Water Supply Authority, which the High Court created in response to the previous water crisis. Previous authority was created by ring-fencing the city's water supply finances. Move from GSSW, an engineering authority that emerged after the jaundice crisis, to SJPNL also included non-engineering approaches to water governance. It can be seen in their communication strategy NIT" Communication strategy goals for SJPNL : (a) build broad support and consensus for the project; (b) identify and address the genuine concerns of stakeholders, both during design and implementation; (c) facilitate behavior change in users that will be needed to optimize and sustain the benefits from a reformed continuous water supply (such as water conservation practices or maintaining repayment discipline, etc.); and (d) set up institutional forums for stakeholder interaction and grievance redressal." According to the policy document for the creation of SJPNL," The program is the systematic response of the Himachal Pradesh Government (GoHP) to the prolonged water crisis in GSA. It is the next step in the stage-by-stage roadmap following the short-term countermeasures after the Jaundice epidemic in 2015." Privatization has been fixed in the policy itself.

Therefore, it is not a means of achieving a water service goal, but rather a goal in itself. "SJPNL will develop a business plan and energy efficiency plan in line with GoHP policies. 24 *7 water is fixed in the policy itself. "The water supply in GSA will be continuous and pressurized. Continuous pressurized supply will be accompanied by 100% metering of all households and supply points and volumetric increasing block tariff."

The groundwork was created to facilitate the large hydraulic project. Dam becomes essential in the core functioning of the SJPNL" The WSS responsibilities in peri-urban areas will be transferred to SJPNL by the Government of Himachal Pradesh / Gram panchayats, once the additional bulk water from Satluj is available to expand the water supply."[89]

Second more significant step, which was the announcement of the Kol dam lift scheme stuck in the files for almost half a decade, has emerged as the savior of the water crisis for the state. As protests increased during the peak of the crisis due to the inaccessibility of water tanks, which were there as a stop-gap arrangement, announcement of the Kol dam project led to control of the situation. The World Bank is funding this project with a loan of Rs. 1000 crore. The project is expected to solve the city's water needs until 2050 to provide 24*7 water supplies. The expected completion date is 2024. Despite the long completion window of the project, it has solved the state's immediate goal that was to satisfy the angry residents that the state is responsive. Thus, infrastructure needs to be seen beyond just the object serving a technical function and the politics it produces. The institutional changes produced on the back of the infrastructure can be seen in the Shimla water crisis. These changes, particularly the creation of SJPNL, are not intended to improve the water services provision but rather create an institutional foundation that secures the international agencies' investments by depoliticizing the cost recovery mechanism in terms of the user

[89] 156-Gazette Notification Urban Development Department HP-01/11/2018

charges. This situation has become visible in Shimla, where a few local representatives have pointed out that if someone complains about the inflated water bills or the unavailability of the water, they feel helpless, as the SJPNL is not accountable to the municipal body. This approach of "staying in, but keeping out' (Smith,2004)[cccx] where the state controls the water management body but provides a techno-managerial cover to the new institutions against local politics instead of outright privatizing the water utility. This strategy helps hedge investments against business risks of water demand and paying potential.

Due to this large infrastructure project, other projects which focused on revitalizing traditional water sources within the city have been neglected. With the opportunity to take advantage of perennial rivers, the hydraulic potential of the streams is not taken into account (Kovacs et. al.,2019) [cccxi] . Without any data on the hydrology of the streams, their rejuvenation becomes an exercise in aesthetic improvement of the city rather than revitalizing the source of water. In the case of Shimla, the ICLEI-ACCCRN[90] network has sanctioned Shimla Municipal Corporation about 17 lakh rupees to rejuvenate the traditional water resources in the area. The project had the potential to include community participation in preserving local streams. But, this project could not become a priority for the municipal body to such an extent that 1.25 lakh of the project fund was used in the GIS mapping under the smart city project.

Presently, the government focuses on the 'reliable' water sources, i.e. Kol Dam. State's response follows the neoliberal logic, in which the crisis becomes an opportunity for spreading the extractive logic of the capital. Although multiple actors play their role in dealing with the crisis, it all re-calibrates itself within the neoliberal logic. The ultimate focus

[90] https://en.wikipedia.org/wiki/ICLEI

is on non-revenue water or, in the nontechnical parlance, the idea of cost recovery; even the committee of NGT (National Green Tribunal) under the Chairmanship of Shashi Shekhar in 2017 talked about it even though the committee's mandate was to identify the ecological and spatial challenges confronting Shimla.

Infrastructure is seen as the linear march of progress in the city (Graham, 2010)[cccxii], which is considered an obvious development progression. In this case, the protests are the push towards the project's early completion, which is why the state could deal with the protests by announcing the new projects. So instead of being boring and filled with technical Jargon (Star, 1999)[cccxiii]infrastructure becomes a moment of hope and relief for the people. As told by people from Sangati ward, where the pilot project for 24 * 7 water supply was announced in 2017[91] as part of the Kol Dam project but finally started in February 2020, according to the member of the ward, with all technical challenges, SJPNL has successfully started the pilot project from this ward. Since the company started (referring to SJPNL), they are not receiving calls from the public about the water issues, unlike the earlier time when they used to receive complaints from the early morning itself. One resident said that this is an *Achambha (*amazement) for the people, when the roadmap of the 24*7 supply was announced last year, it seemed like a dream. But going through the technical documents of the project, it looks like the whole city would not get a 24*7 water supply because, as per the project DPR(Detailed Project Report) (page 25-26), "For zones where new reservoirs are to be proposed, capacity will be kept at 8 hours requirement of that zone for Intermediate stage (the year 2035). For zones with existing reservoirs, no new reservoir will be proposed if the existing reservoir has the capacity to fulfill at least the 6 hour demand of that zone.

[91] Tribune News Service. (2017, August 9). Sanjauli, Tutu to get 24x7 water supply, says MC. Tribuneindia News Service. Retrieved June 7, 2018, from https://www.tribuneindia.com/news/archive/himachal/sanjauli-tutu-to-get-24x7-water-supply-says-mc-449243

For zones with existing reservoirs having capacities less than 6 hours, new additional reservoirs of capacity will be proposed such that the storage capacity of the existing & new reservoir proposed will together be of 8 hours of Intermediate stage requirement of that zone."

Thus, the supply would be intermittent for the foreseeable future and only a few pilot projects in small areas would keep the enthusiasm for the infrastructure going. Although few residents also showed skepticism about the project, they wanted to wait until summer to comment. It has become clear that this skepticism was not farfetched but rather a part of the memory of the cycle of busts. In the summer of 2021, same problem of water cuts began to arise due to the resumption of tourist activity.

Incompleteness of Infrastructure

However, the above case study is not a unique event in Shimla's water history. There have been multiple events of water shortages and multiple events of announcements of new projects. In most cases, the idea of solving the water crisis is for all involved getting water from a faraway river to ensure a perennial water supply. Two such projects remained incomplete, which were once touted as the city's savior. In 2008, the GoHP forwarded a project proposal for the enhancement of water supply for Shimla City from the river Pabber at an estimated cost of Rs. 70.81 crore to finance ministry seeking funding. The project has been examined and recommended for possible funding from external agencies. At the cost of 715 crores, the 13th finance commission deemed it too expensive, as this was shelved. Similarly, the Giri River project envisaged in 2000 was also scrapped after many changes in its plan. Under this project, the water was supposed to come from 31.5 km at a height of 1200 m, making it financially unviable after the announcement of the Kol Dam project. Local

government officials respond to the project planning and implementation question by stating that the state government plays a key role as the funds with the municipal body are insufficient. Second, the local body does not have sufficient technical staff to deal with the policy and project issues. As seen by technical experts, the problem with the continuous failure of water infrastructure projects has been the lack of capacity of the implementation bodies (Barnes et. al., 2011, p.170).[cccxiv] Another reason for failure is the presence of multiple agencies in projects with no clear focus on the results, as seen in case of a turnkey water rehabilitation project for Shimla in 2010. The plan was costing approximately Rs 72 crore, but 26 crores fell under the jurisdiction of the IPH (Irrigational and Public Health) Department and rest with the municipal body. Later in 2011, the project was merged with other water projects under JNNURM (JawaharLal Nehru National Urban Renewal Mission) to develop through the PPP (Public-Private Partnership) mode. This was done to allow JNNURM funding for the project. In 2013, after receiving only one bid, it was decided to shift the project into an EPC(Engineering Procurement and Construction) mode project. Until then, the government had already spent close to 83 lakh on the bidding process. Subsequently, funding was sought from the World Bank for the project. Due to the pressure of returning the unutilized JNNURM funds, the municipal corporation transferred the said funds to the IPH to start constructing tanks in the city in the amount of 23 crore. About 43 crores lapsed in the process. End result of the whole exercise was that the turnkey water rehabilitation project only remained on papers. This incompleteness stands in contradiction with the legitimization narrative created around the infrastructure projects arguing that they are a 'done deal.'(Legacy, 2016)[cccxv]

Incomplete infrastructure projects explored in the section produce their own materialities beyond the purpose they are solving, thereby co-constituting the completeness of their formation. Therefore, incompleteness must be seen as a conscious political decision rather than a category of dysfunction(Choplin & Ciavolella, 2017; Guma, 2020).[cccxvi] [cccxvii] In the case of Shimla, the result of incompleteness has taken away the focus of people from the rejuvenation of traditional water sources to the waiting state for these large projects. Decay of traditional projects then leads to a decrease in the quality and reliability of the water from these sources, ultimately leading to large projects remaining as the only viable option. Cancellation of such smaller projects that have the potential for people's participation further alienates the public from the infrastructural making (van Veelen et al., 2021).[cccxviii]

Performance of the Dam

So, will the Kol Dam lift scheme solve the water crisis of Shimla? For that, one has to wait a few more years until the project is ‘complete.' But until then, the project has succeeded in creating hope for the solution, which Mrazek (1997)[cccxix] described as an 'enthusiasm of the imagination.' This enthusiasm is generated simply by the utterances of the state. Austin(1975)'s book "How to do things with words "[cccxx] argues that some utterances said by someone under some conditions can make things happen; he describes them as perlocutionary performatives. Butler(2011)[cccxxi] expanded this notion from linguistic performativity to "acts, gestures, and desires." Butler also uses Derrida's notion of iterability as a form of performance. Derrida(1988) argues" "Could a performative utterance succeed if its formulation did not repeat a 'coded' or iterable utterance, or, in other words, if the formula I pronounce in order to open a meeting, launch a ship or a marriage were not

identifiable as conforming with an iterable model if it were not then identifiable in some way as a 'citation'?"(p.18)[cccxxii] Thus, performativity is not an act, but a ritual (Butler, 2011).

Performativity cannot be understood outside the process of iterability, a regularized and constrained repetition of norms. And this repetition is not performed by a subject rather this repetition enables a subject and constitutes the temporal conditions for the subject. This iterability implies that "performance" is not a singular "act" or event but a ritualized production, and ritual reiterated under and through constraint, under and through force of prohibition and taboo, with the threat of ostracism and even death controlling and compelling the shape of the production, but not, I will insist, determining it fully in advance." (Butler, 2011, 95) Butler argues that performativity provides agency, as subjects are formed through action by the ritualized repetition of acts and gestures bound by the norms.

Infrastructure projects like the Kol Dam can be seen as the site of the state's performativity, which intends to produce the modernist imagery of the control of nature continuously. Through that, control over the scarcity is reproduced. The modernization process is expressed through hydrological development, in which discourses around the production of nature are produced through specialists such as scientists and engineers (Swyngedouw, 1999).[cccxxiii] Since the conception of these water supply systems, there have been attempts to create euphoria around them through exhibitions to make people praise and familiarize themselves with the projects (Kaika& Swyngedouw, 2000).[cccxxiv] The solution to the water scarcity in Shimla is always more projects moving further away from the city, thus completely neglecting the socio-environmental vulnerabilities of the region. Experts further rationalize these larger projects by arguing that climate change has made smaller

water sources vulnerable. Therefore, it is essential to tap into perennial rivers such as Satluj for long-term planning of the water supply system in Shimla. Water infrastructure interventions existed in pre-capitalist society, but technocratic regimes aspiring for standardization across the board brought in the extractive logic of capitalism (Brenner et al, 2010).[cccxxv]

Unique nature of infrastructure in the context of countries such as India where the infrastructure is both unavailable and highly visible in the form of the jumbled network of pipes without any water makes the study of the water infrastructure on its own ever more important (Gandy, 2014).[cccxxvi] Thus, the infrastructural projects become a very important political tool despite their cost and time overruns as these projects give "a sense of urban modernity, the permanence of place, order, sophistication, and connectivity befitting enduring world-class cities." (Boschken, 2002, p.184)[cccxxvii] These particular imageries of the city are produced through rationality of the transformative powers of modern technology, what Stephen Graham and Simon Marvin call the "modern infrastructural ideal' (Graham& Marvin, 2002)[cccxxviii] produced through the global capital. These imageries are used as a discursive tool to build consensus around the projects.

According to the detailed project report (DPR) of the World Bank-funded bulk water supply project (page 49), " SHIMLA city will get tremendous benefits from the 24x7 water supply scheme. Some of the beneficiaries of the 24x7 water supply scheme for SHIMLA are focused below. A. Citizens will get better urban services and eventually lead to improvement/ upliftment of lifestyle B. Positive positioning of Shimla city C. Improvement in hygiene D. Investment in and around Shimla City E. Restrict the migration of Shimla to other

urban centers F. Will create employment opportunities through new investments by large industrial players. G. Shimla will be positioned as a sustainable city in the country."

These ideals of the 'World Class' city (Schindler, 2015)[cccxxix] builds consensus around the projects, particularly within the groups like policymakers and aspirational middle class, to generate initial support for the projects. The ideal of these 24*7 water supplies is used to gain legitimacy. And this is why the water crisis of the 2018 crisis is unique because, in this crisis, the global capital had finally reached that tipping point in terms of both materials and discursive hegemony. This growing acceptance of the project has even allowed the SJPNL to further increase the price of water, which is already among the highest in the country. For Althusser(2006), the infrastructural intervention is the mechanism of reproducing the domination by the dominant class. He argued that "this reproduction does not consist solely in the reproduction of the conditions of ‘social relations' and, ultimately, the 'productive relation'; it also includes the reproduction of the material conditions of the relations of production and exploitation."[cccxxx] Ferguson(2006)[cccxxxi] describes infrastructure development regime as an 'anti-politics machine. When politics closes the space of resistance and makes the policy a technocratic exercise, it brings anti-political effects (Barry, 2002).[cccxxxii]

But one needs to be skeptical of the idea of the end of politics as it exists at the local level due to the mixing of the highly technical approach of infrastructure forming within the norms of the aspirational modernity. Beyond the local space, politics also exists on the global scale where infrastructure norms are produced (Santos, 2017).[cccxxxiii] As the funding and control mechanism moves from the state to international lending agencies like, in this case it is the World Bank, politics also moves beyond the state as 'governance-beyond-the-

state" (Swyngedouw, 2005)[cccxxxiv]. Politics of global enters the local area by making impossible infrastructure possible, as the idea of getting water from Satluj to Shimla is not new. A British official Major General Beresford in 1904 recommended that the water from the Sutlej River be lifted to Shimla to meet its growing needs for water in the aftermath of the water crisis in 1903. The British government had rejected his suggestion and had pointed out that it would involve (at that time) an expenditure of about Rs.25 lakhs (Pubby, 1996).[cccxxxv] The project was again explored in 1981-1982 at the cost of 35 crore, which was again shelved due to financial constraints of the state government. Now the same project has become possible due to the World Bank funding.

Conclusion

In the chapter, I have started by mapping the notion of water scarcity and its relationship with urban water infrastructure through colonial and neoliberal governmentality. Through the case study of the water crisis in Shimla and its aftermath, I have shown that urban infrastructure performs multiple functions even in its conception stage. Using the performativity (Austin, 1962)[cccxxxvi] framework, I argue that technocratic regimes bring about rigid government logic where focus is on the technical and managerial aspects of the government, and foundational questions move to the foreground. Thereby, the problem becomes a performance wherein the public becomes an audience who watches the infrastructure's formation without any participation. This produces a form of performative government where the debate has moved away from the political function. In the present case, the technicalities of supplying water to such a height and from such a

great distance lead to a euphoria around infrastructure that kills any discussion about the price of water and hydro-exclusion the high price creates within the city. The absence of debates around water access and distribution becomes muted by the noise created around the macro-issue of water availability.

Due to interventions to improve existing water sources, the water crisis has not been a problem for some time. Still, such an event of the crisis has etched a scar in city's memory through the permanent institutional changes. To get out of this cycle of the water crisis and infrastructure fixes, there is a need to bring back politics into the infrastructure. The ontology of infrastructure as the instrument of carrying the capital both in space and time needs to be brought out by demystifying the techno-politics of such projects.

Conclusion

"Constantly bound by craving and fear to a future full of uncertainties, we strip each present moment of its calm, its intrinsic import, which we are unable to enjoy. And so the future destroys the present." Hannah Arendt(1996, p.10)[cccxxxvii]

In this thesis, I tried to provide insight into the scarcity of water in the mountain city and how it mediates the relationship between state, space, and people. I introduced the dissertation by emphasizing the need to understand Himalayan urbanization as a separate epistemic category. This helps in understanding small cities in the region as their own thing rather than the larger urban centers(Guin, 2019).[cccxxxviii] Thesis comes as an interjection in the debate by bringing in the Himalayan cities, as they are small when we compare with the cities of the plains, but within mountain spaces, they are the largest human congregation. Unlike small cities in the plains (Mukhopadhaya et al., 2020)[cccxxxix] mountain cities are places that were urbanized by state institutions. State recognizes them as cities with small sizes because institutions of urban governance were already present there. Analysis of urbanization in mountain towns must include these institutions' legacy, course correction, etc. Apart from the institutional framework, the geography of the mountain towns also plays a role in the governance of the mountain cities. Nature of the space in the Himalayan cities can be termed as what James Scott calls the 'friction of terrain'(Scott, 2009)[cccxl] where terrain becomes an active member of the urbanization process.

The study is located within the current debates around the Anthropocene, where water scarcity is becoming an imminent reality for most of humanity (Bindi et al., 2018).[cccxli] This thesis uses the water crisis in the summer of 2018 as an entry point to understand the situatedness of the scarcity in Himalayan urbanization. In the thesis, I did not go into the

engineering and physical environmental dimension of the water scarcity in hill towns, as it has been explored much better in many other works (Molden, 2020; Devkota et al., 2018).[cccxlii] [cccxliii] Clear themes emerging from the thesis is that scarcity has a material impact on people's lives through a continuous restructuring of the relationship with the state. Water scarcity goes beyond the physical availability of water. It becomes part of the city's socio-natural landscape, "the interwoven knots of social processes, material metabolism, and spatial forms" (Swyngedouw & Heynen, 2003)[cccxliv] of the city. Looking at the reforms led by the crisis in the city, I argue that discursively the reforms create a new subjectivity (Turken et al, 2016)[cccxlv] that takes the water away from the rights framework to that of the commodity and restructures the institutions by bringing in new actors within the water supply. We see how the water infrastructure is not just used as a tool of negotiation with nature, but also negotiates the relationship between people and the state. The infrastructure reproduces power relationship within the city.

In the first chapter, I developed the trajectory of the making of Shimla from colonial times to the present through the framework of the urban political ecology by framing the city as socio-nature. Therefore, urban space is centered as an actor in the making and unmaking of water scarcity. I have shown that the space is connected with the water as the colonial spatial segregation is articulated into water access. The reproduction of space was enabled through the notion of water scarcity. Unlike the widespread belief in the city that water scarcity is the product of the city's uncontrolled urbanization, the city's water scarcity became a trope for the colonial and postcolonial discourse in an attempt to push an agenda of control.

In the second chapter, I moved from space to citizenship to understand the relationship that water scarcity produces at the individual's level. In this chapter, I used the framework

of 'infrastructural citizenship' (Lemanski, 2020) [cccxlvi] to argue that water scarcity restructures the relationship between society and the state, mediated by (in)access to public infrastructures of water. Through the colonial archives of petitions and the performance of citizenship in the present time, I have shown that citizenship moves beyond the juridical-legal relationship of the state and the people. In the case of colonialism and neoliberalism, external forces tend to restructure this relationship. Performance of this citizenship produces and cements the people and the state through the infrastructure, whose repercussions are felt for a long time. This relation produces a variegated form of infrastructure embodying the contestation within and produces an "infrastructural imaginary" to legitimize the hegemony of the infrastructure. I have shown how water plays a mediating role between people and the state. Water in this frame becomes a political field where contestations for rights occur. The state uses the notion of water scarcity to dominate its relationship with the people. First, this domination was done in colonial times to legitimize its actions. Later in the neoliberal period, this produced the legitimization of the extractive nature of the regime. I argue that marginality is produced through the actions of the state rather than by nature. Thus, I tried to center the idea of infrastructural citizenship within the multiplicities of access to resources and the approaches to those accesses. Citizenship should be about participation in the creation and use of infrastructure instead of the competition for these resources.

Third chapter builds on the idea of infrastructure and its relationship with urban politics. I map the notion of scarcity within the context of colonial and neoliberal governmentality. I have shown how the shift in governance structure has impacted the hydraulic relationship between the people and the state. The infrastructural regime produces the vocabulary of the solution, and anyone outside it is portrayed as obstructionist; positive participation is

always about participating in the solutionist regime. This leads to a further shrinkage of the political space as the political space is used to affirm differences (Swyengedouw, 2015). [cccxlvii]

The chapter also shows how the 24*7 water supply has become a buzzword among people and has rationalized the new regime by bringing the global discourses of the urban consumer shifting emphasis from the urban citizen (Hall et. al., 2015)[cccxlviii]. Using the performativity (Austin, 1962)[cccxlix] framework, I argue that technocratic regimes bring in a rigid logic of government where focus is on the technical and managerial aspects of the government, and the foundational questions move to the foreground. Thereby, problem solving becomes a performance wherein the public becomes an audience who watches the infrastructure's formation without any participation. This produces a form of performative government where the debate has moved away from the political function. Thus, without questioning the infrastructural discourse, the crisis would continue to repeat itself endlessly, as the crisis events help reduce the decision-making process for the infrastructural projects by restricting detailed debates and discussions around the projects (Olesen, 2020).[cccl]

The water crisis is over, and all is well?

After the water crisis of 2018, the government took many steps to strengthen the water supply in the city. Although there are bouts of water shortage, they are time and region-specific. Overall, the Kol Dam lift project's much anticipated start, and the improvement in the existing supply has made the people hopeful for the future. The movement of the water source from the smaller streams to the larger river like Satluj has given a sense of assurance to the people that the water supply wouldn’t face disruptions due to the seasonal variations. But the larger question on the issue of water scarcity in the Himalayan region still remains, particularly in the context of climate change. Climate change is expected to impact

the availability of water in the glaciers of the region, thereby risking the water supply of the cities dependent on these 'perennial rivers' (Matthew, 2013; Xu et. al., 2009).[ccli] [cclii] Secondly, the unabated pace of the infrastructuring of the Himalayas, both through roads as well as the dam construction, risks the geological stability of the region. New projects like the Jangi Thopan Powari hydroelectricity project (JTP HEP) on the Satluj River impact the ecology of the region and the hydrology of the river. Thus, although the water supply projections, which assure a 24*7 supply for the city onwards 2050, would make people and the government say all is well, one must be cautious of the enormous water scarcity lurking in the background. So, where does it leave the people of the city? On the one hand, the new institutional restructuring is bringing post-political governance by taking the governance beyond the democratic institutions by bringing in a stakeholder approach to governance (Swyngedouw, 2009).[ccliii] The stakeholder approach brings in experts, technocrats, NGOs, etc (crouch et. al., 2004)[ccliv] , and pushes out the voices of the people who would ultimately use the urban services. New systems like the grievance redressal through the call centers intend to create a new form of urban citizenship that intends to restructure the relationship between the people (as a collective and as an individual) and the state. Thus, water infrastructure should be seen "..as a complex social and technological process that enables—or disables—particular kinds of action in the city."(Graham & McFarlane, 2014, p.1)[cclv]

In this restructuring of the relationship between the people and the state, it is necessary to go back to the right to the city and reclaim the urban space for the people (Harvey, 2012).[cclvi] The reclaiming of the city would require wider alliances of people not just living in the city but also the people connected with the city's future. Solidarities need to be built

among people of different classes as well as regions. The hydro-future of the city is not just confined to the people within Shimla but also the people in Kinnaur protesting the dams on Satluj. Urbanization is associated with social emancipation (Wirth, 1938).[cccLVII] In a city like Shimla, where the urban space and the social hierarchies are intertwined on the slopes, the flow of water becomes an instrument of emancipation or an instrument of exclusion through its terrain.

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