

Villages of Delhi

Towards Inclusivity and Plurality in the Urbanizing Countryside

By RANU SINGH
Bachelor of Architecture (B. Arch.)
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Submitted to the Department of Architecture in Partial Fulfillment of the
Requirements for the Degree of Masters of Science in Architecture Studies
at the Massachusetts Institute of Technology

JUNE 2018
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Department of Architecture
May 24, 2018

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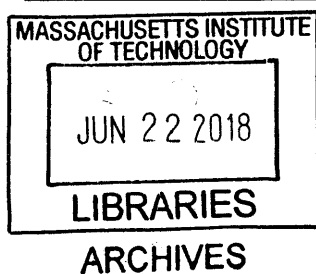
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Villages of Delhi

Towards Inclusivity and Plurality in the
Urbanizing Countryside

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Abstract

The idiom of urbanization driven by financialization of rural land is purported to bring development to rapidly developing contexts. However, the nature of the resulting urban realm, functionally, socially and ecologically dispute any concept of betterment. Delhi is a poster child of this kind of rural to urban conversion generating a sprawling megalopolis, which is increasingly fragmenting into islands of high-end gated residential enclaves and ghettoized villages. The resultant urban form is an archipelagic state that supports only certain types of urban citizenship, systematically removing and de-legitimizing rural modes of existence and citizenry.

Following the trend of urbanization of peripheral metropolitan areas, the thesis addresses the current wave of urbanization in the rural periphery of Delhi. This move will lead to the conversion of 95 villages to urban areas, affecting about 30% of land in the National Capital Territory. As an alternative to the centralized, city-centered mode of urbanization for the rural belt, the thesis proposes an alternative framework of the network-territory that allows for urban exchanges while maintaining and transforming rural landscapes. This model of planning and design stems from the villages themselves, organized around the idea of village collectives that integrate social, ecological and economic values in the new developments in the countryside. Approaching the project at multiple scales, these village collectives would operate at the scale of districts in Delhi that plan and accommodate for new growth and sustain life forms of the villages as well.

Thesis Supervisor: James Wescoat

Title: Aga Khan Professor
Professor of Architecture

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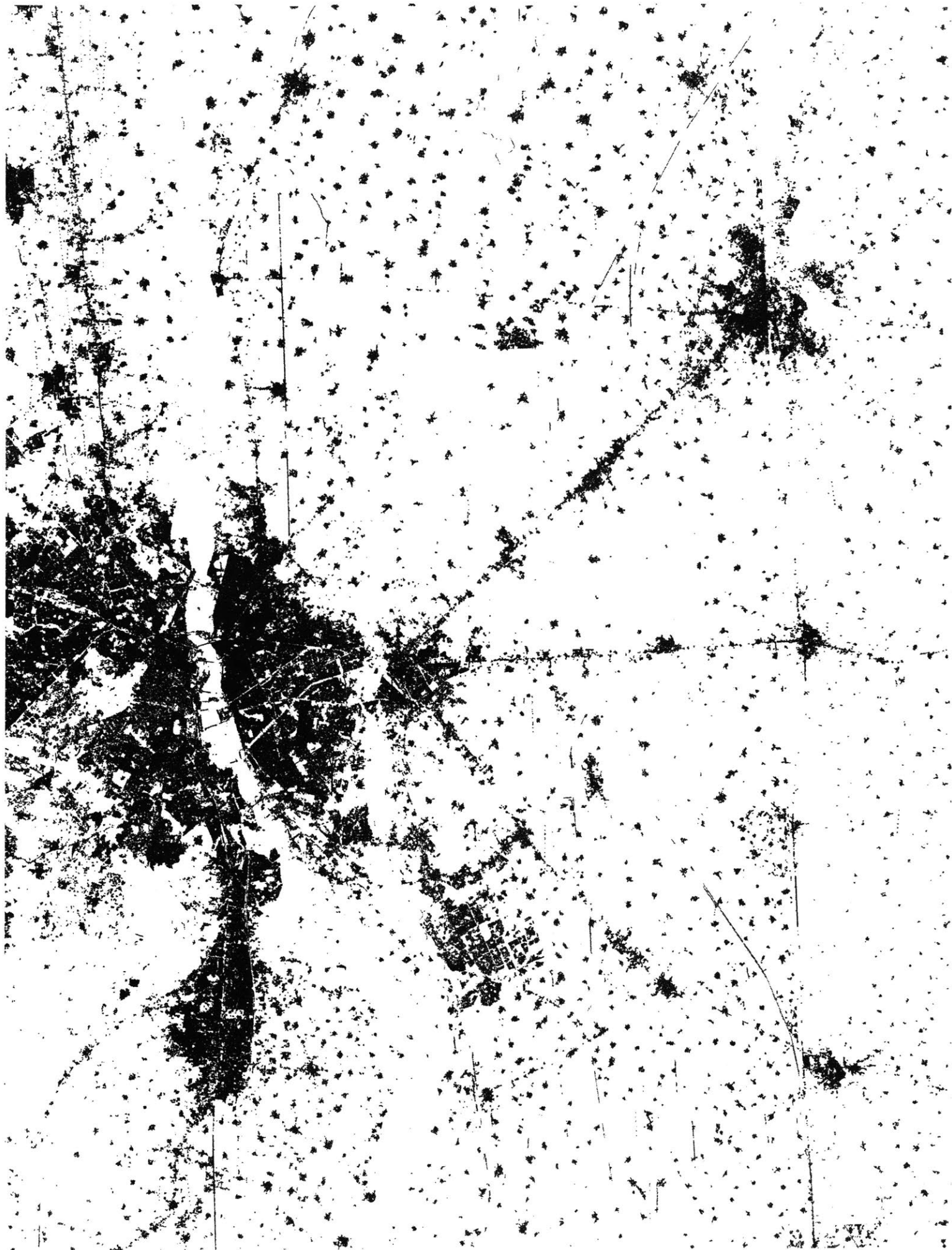
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City and Villages, Delhi

Global Urban Footprint, German Aerospace Center (DLR)



Introduction

The Rural and Urban have been historically posited at the opposing ends of the civilizational continuum. Rural has been a site for civilizational struggle facing tremendous inequality in the face of deep divisive political narratives, extractive colonial legacies and global capitalist economies that eclipse the rural terrain altogether. From being sites of extraction and production for the city to being at the receiving end of wastes and effluents from urban areas, rural areas have been the externalities of urban thought and design. As the idiom of urbanization linked to economic development is valorized by municipal, state and national governments, large tracts of rural territories are seeing massive changes accompanied with political, social-spatial and material transformations.

The thesis aims to challenge this urban-rural framework that leverages city-centric models of urbanization which have conceived and shaped our territories. Calling for a re-conceptualization of traditional metropolitan spatial models and modes of design and planning. Operating as a collective of a diverse multitude of settlements, where individual settlements have an equal right in the collective ownership and management of the environmental, social and digital commons.

Delhi has been called by some as the city of seven cities or the city of seventeen cities due to the numerous capital cities that were settled in its territory. This historical condition prioritizes cities but one could extend this argument to villages as well. There are 362 villages in Delhi, out of which 135 are

urban villages and 227 are rural villages. The recent trends of urbanization have all tended towards creating an ever-expanding periphery of city engulfing the countryside and the villages that lie in its territorial path. In the regional planning efforts of the metropolitan region, it is important to consider allowing the villages to retain and prosper, enabling them to increase their capacity to ease the housing stresses in Delhi without having to urbanize them by erasing and remaking these rural habitations. Models of this type of expansion can be seen in Delhi itself in the historic urban and rural villages present within it and it might be useful to consider these examples in the current planning practices of the territory of Delhi.

Delhi has experienced some of the quickest and substantial urban growth in the history of the world. Since the 1951 census, Delhi has grown from under 1.5 million people to a population of 22.6 million in 2011. It has been one of the fastest growing urban areas in history and has added approximately 20 million people over the past 60 years. Urbanization for Delhi has been portrayed as a positive and progressive planning tool, however Delhi's case raises alarming questions to the nature and type of emerging urban form. In the 2017 Mercer Quality of Life Rankings, New Delhi came in last among the seven Indian cities at rank 161.¹ The newly urbanized areas have been proven to be more unsafe due to various factors, but most importantly, the lack of public spaces that are accessible to all citizenry, increased privatization of public commons including ecological zones

Saturated material renders presents a highly aestheticized image of living in the high rise apartments organized around an blue aquamarine pond. The consumers of this image are drawn to the dream of living in the new 'Delhi Gate', protected by the fence that separated this oasis from the dangerous city outside.



Outside this island lie rural and urban villagers, migrant workers, seasonal workers, construction workers, laborers among others. There is a silent but sometimes visible conflict between the island dwellers and the others, but a tacit understanding as well. The others fulfill the labor workforce requirements for the islanders.



In between the islands and the villages lies the public space: a road driven over by vehicles of all kinds, lined by a pavement, bounded by the walls of the residential islands. The public space is a space of contestation and display of status. Here is carried out the theater of the pecking order.



and the increase in reliance of existing systems rather than building new capacity for residents are a few among the factors that define the poor quality of life for the residents of new urbanized areas of Delhi.

1. Mercer Quality of Life Survey, 2017
<https://www.mercer.com/newsroom/2016-quality-of-living-survey.html>
Web. Last accessed: May 11, 2018.

A review of the reforms proposed currently to further urbanize the rural periphery of Delhi and other pro-liberalization efforts makes it clear that these are designed largely to the benefit of domestic and international investors and elite residents in Indian cities. They will serve to exacerbate the inherent exclusionary and marginalizing tendencies of urban development in India. The repeal of the Urban Land (Ceiling and Regulation) Act restores to the builder lobby vast tracts of land in cities thus driving the poor out of the land market. As a result, most of the urban poor and migrant population have no other option but to inhabit villages. However, as the existing population of the village is exchanged with the seasonal dwellers, villages are seen as unsafe settlements which often leads to a clash between new village and city citizenship. Although the urban residents rely on the labor force that the villages provide, there exists no other kind of exchange or sharing between these two realms.

The thesis is an investigation into the existing patterns of urbanization in Delhi and aims to propose a new urban form for the periphery of Delhi that offers a collaborative networked exchange of resources, ideas, ecological and social commons and economic benefits. This form of urbanism could be implemented not only in Delhi but also other contexts that face the same issues.

Starting with historical analysis of urbanization in Delhi in

As the city creeps up to the rural countryside, villagers move to the city, leaving behind their houses that become filled with migrant workers, seasonal dwellers among others.



As the new dwellers increase in number in the village, residential buildings are expanded upwards, and a precarious social and built environment is created.



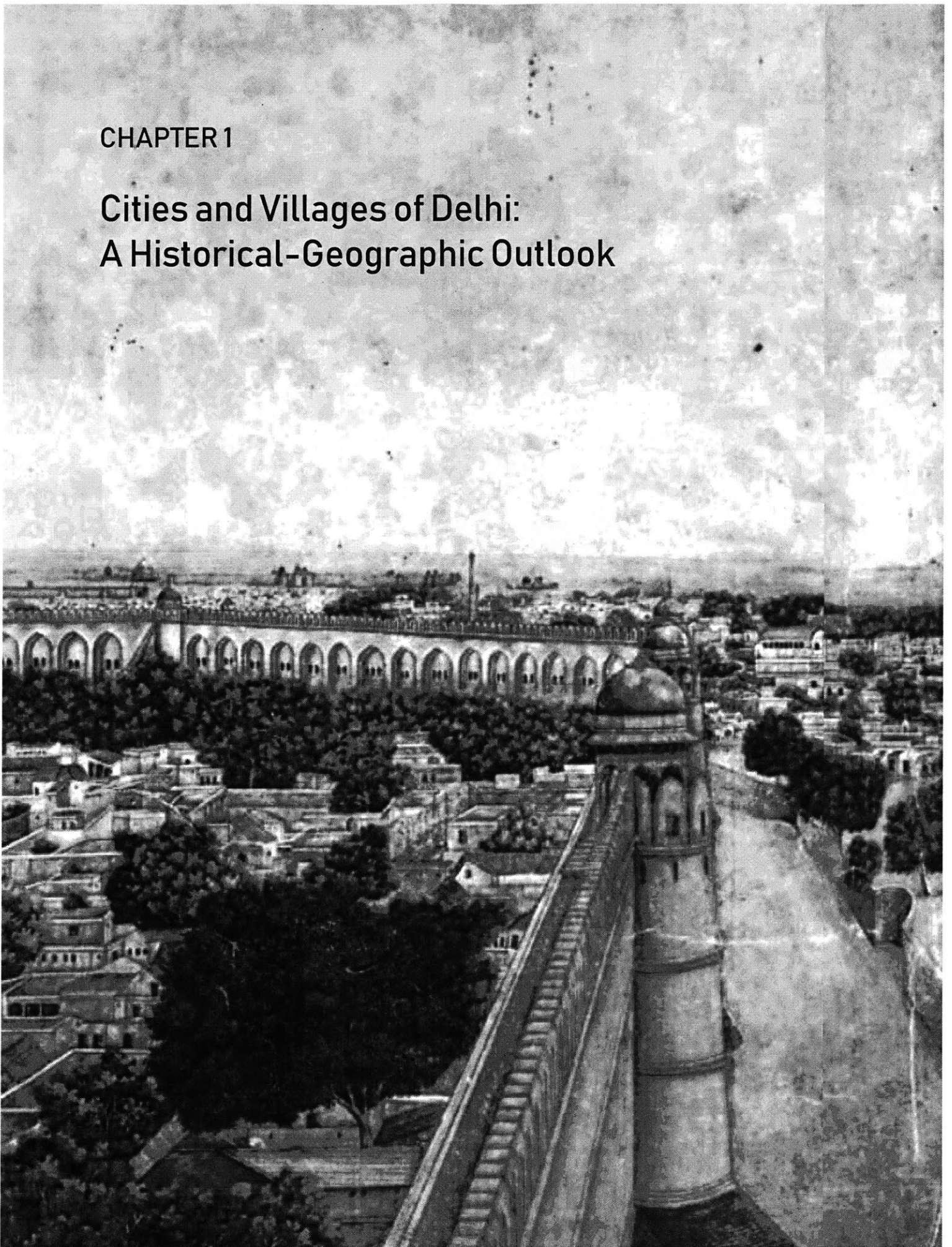
Agricultural terrain, fallow lands, ponds, rivulets are covered to create a bed for the new outcroppings of islands. And the circle of urbanization continues, with the ever expanding city moving outwards.



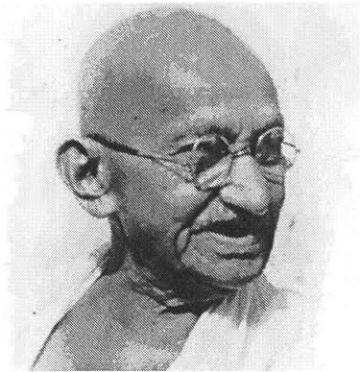
Chapter 1, the thesis will analyze the projected vision for Delhi in 2021 in Chapter 2, the Complete Urbanized State? In Chapter 3, I will discuss the strategy for a new village urbanism through the model of Network Territory. Chapter 5 will look at the framework of district level village collectives and its strategies for South West District in Delhi, which is the site of the project. The last chapter details urban design and planning proposal for South West district and offers scenarios for growth based on a village urbanism for the countryside.

CHAPTER 1

Cities and Villages of Delhi: A Historical-Geographic Outlook







*Villages as Sites of 'Swaraj'
(Sustainable Self-Governed Settlements)*



Villages as Places of Backwardness



Villages as Sites of Caste-Oppression

National Narratives on Rurality in India

From villages as sites of independence and sustainable self governance, to villages as sites of backwardness and caste oppression, these national narratives have polarized the city-village debate in India. Disputing this binomial conception, the thesis will attempt to formulate a plural understanding of society, which can combine rural and urban ways of living and socio-political order.

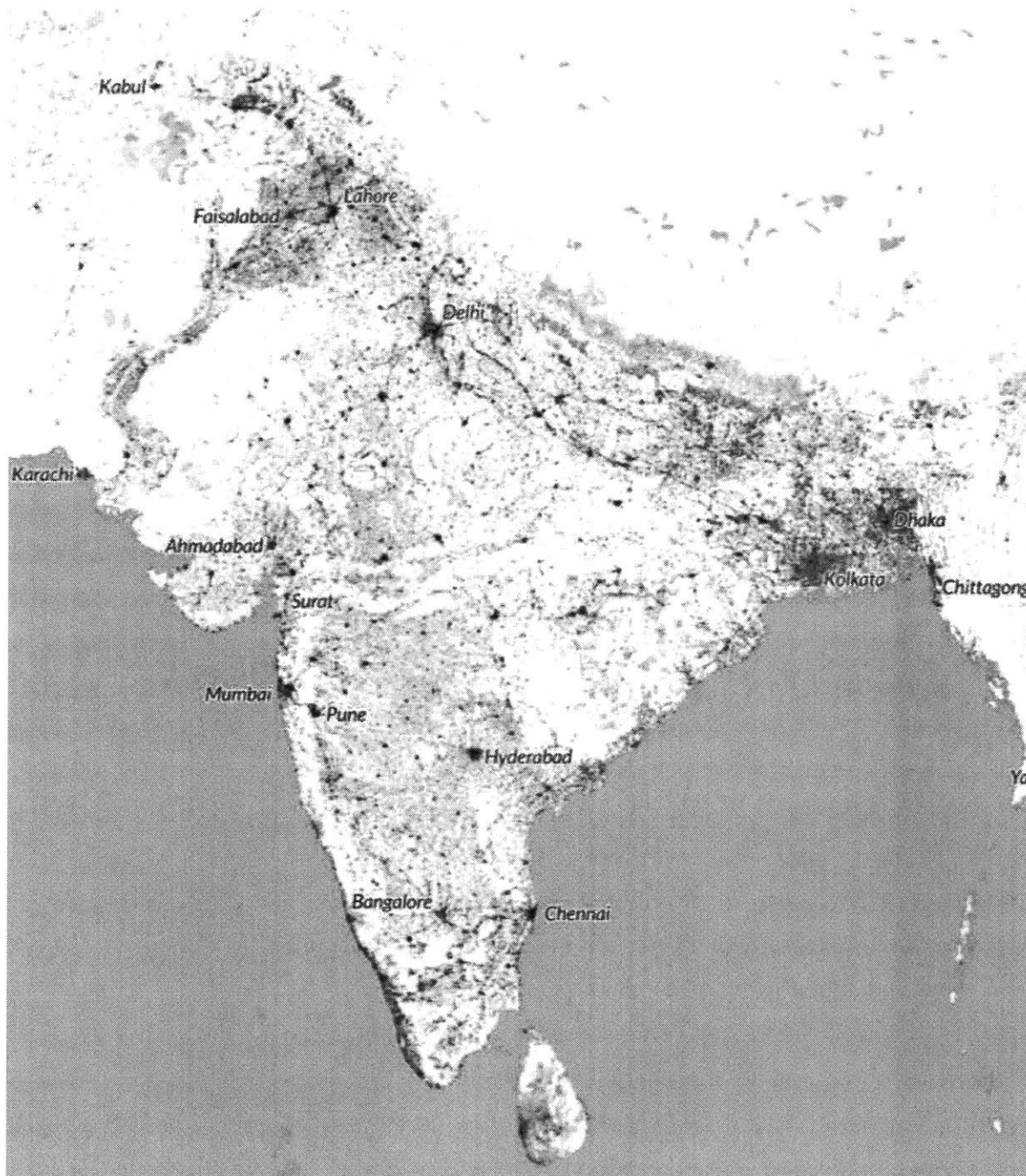
Cities and Villages of Delhi: A Historical-Geographic Outlook

'The future of India lies in its villages'

Villages in India were once thought to be the reflection of Indian society. Gandhi's view of villages in India as an ideal form of society, self-sufficient and self-governed can be summarized in his vision for independent India above. However, the current scenario of rural life and trends towards urbanization reflect a significant schism in the shaping of rural and urban India in its built and unbuilt environment. The current chapter traces the ideological roots of rural-urban disparity in India and its implications on Delhi through a historical-geographical perspective.

Gandhi, Jawaharlal Nehru and B R Ambedkar, played a significant role in India's independence by mobilizing rural and urban populations and later shaping national narratives on rural India. As Nehru became the first prime minister of India, he proclaimed a vision for an independent India that relied heavily on urbanization and industrialization. This played a crucial role in shaping the political narrative on villages in the post-independence era, especially in the creation of policies and programs focusing on urban development. Gandhi's romanticized ideal vision of villages was strongly contested by Jawaharlal Nehru, who saw villages as sites of backwardness. In his correspondences with Gandhi, Nehru countered Gandhi's views by promoting urban areas as progressive sites for development. B R Ambedkar, who drafted the constitution of India, viewed villages as sites of caste oppression.¹

1. Jodhka, Surinder. Nation and Village Images of Rural India in Gandhi, Nehru and Ambedkar. *Economic and Political Weekly* August 10, 2002, pg. 3343-3353



Population Density, India (2015)

Based on the 2011 census of India, 68.84% of Indian population is rural and 31.16% urban. It is estimated that by 2031, 40% of India will live in urban centers with the increase in peri-urban development in metropolitan areas.

Even as these three major figures formulated these views from different perspectives, reflects a broader polarization of rural-urban realms in terms of design-planning and governance, whose effects can be seen in the section below. Disputing this binomial conception, the thesis will attempt to formulate a plural understanding of society, which can combine rural and urban ways of living and socio-political order.

Rural-Urban Disparity in India

Based on the 2011 census of India, 68.84% of Indian population is rural and 31.16% urban, with 13.7% living below the poverty line.² However, census definitions of urban and rural are fairly questionable, and according to the World Bank, 55.3% of India lives in areas with urban-like features.³ Although relatively slow, India's urbanization process has been haphazard. Large metropolitan cities such as Delhi have seen rapid expansion and urbanization. The worker participation rate of Rural India was calculated as 40.1% in Rural India as compared to 30.2% in Urban areas. Even as population and work share is greater in rural India, rural India fares worse in poverty ratio (33.4%), housing shortage (13.7%) and availability of drinking water supplies (56%)⁴ and the services and infrastructure gap is more acute. As rural employment opportunities dry up, the population in urban areas will increase.

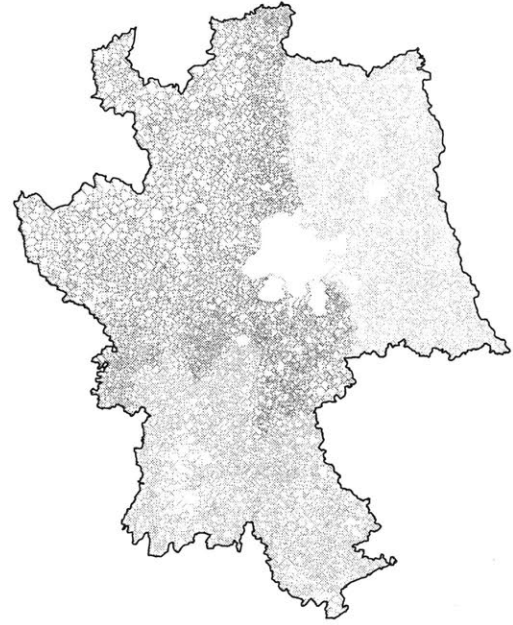
It is estimated that by 2031, 40% of India will live in urban centers with the increase in the peripheries of existing metropolitan areas getting bigger.⁵ It is in these peri-urban areas that most development will be concentrated, and rural-urban contestation will be played out. Delhi, a state

2. Census of India. New Delhi: Office of the Registrar General and Census Commissioner, India, 2011.

3. The World Bank. Leveraging Urbanization in India. September 24, 2015. <http://www.worldbank.org/en/country/India/brief/leveraging-urbanization-india> Last accessed: 11 May 2018

4. Statistical Outline of India, TATA Services, Mumbai, 1995-1996.

5. ET Editorials. India badly needs planned urbanization. February 25, 2016. <https://blogs.economictimes.indiatimes.com/et-editorials/india-badly-needs-planned-urbanisation/> Web. Last accessed: 11 May 2018

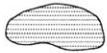


National Capital Territory (NCT)



16,787,941

Population



1,484 sq km

Area



11,312 per sq km

Density



Administration

Ministry of Urban Development (Central Government)

Delhi Development Authority (Delhi State Government)

Municipal Corporation of Delhi (Delhi State Government)

Delhi Cantonment Board (Delhi State Government)

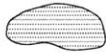
National Delhi Municipal Corporation (Delhi State Government)

Delhi Metropolitan Area (DMA) / Central National Capital Region (CNCR)



26,500,000

Population



2,000 sq km

Area



13,250 per sq km

Density



Administration

Government of National Capital Territory

NOIDA Authority (Uttar Pradesh)

Gurugram Metropolitan Development Authority (Haryana)

Ghaziabad Municipal Corporation (Uttar Pradesh)

Municipal Corporation of Faridabad (Uttar Pradesh)

Municipal Council Bahadurgarh (Haryana)

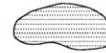
Kundli Municipal Council (Haryana)

National Capital Region (NCR)



46,069,000

Population



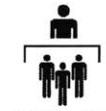
58,332 sq km

Area



790 per sq km

Density



Administration

National Capital Region Planning Board

Ministry of Urban Development, Ministry of Housing and Urban Affairs, Ministry of Road Transport and Highways, (Central Government)

Government of National Capital Territory, Haryana State Government, Rajasthan State Government, Uttar Pradesh State Government (State Governments)

Territories of Delhi

Based on Census of India, 2011 (See Chapter 2, pg 44-45 for more details)

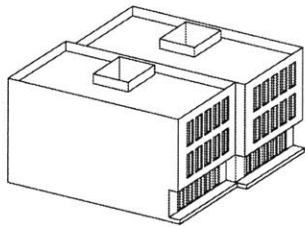
in the National Capital Territory of India has seen a steady exponential growth since independence. Its current policy for peri-urban rural to urban conversion calls to question the mode, methods and results of urbanization of this rural countryside.

6. National Capital Region Planning Board. National Informatics Centre, pg 3. Last accessed: 11 May 2018

Rural-Urban Dynamics in Delhi

The fast-paced growth of Delhi, post-independence called to attention the first regional planning exercise for the National Capital Region (NCR), that spans across four states (Delhi, Haryana, Rajasthan and Uttar Pradesh), consisting of 46.07 million people as of 2011 and 46,208 square kilometer in area.⁶

Even as the National Capital Regional Plan was instituted for controlled growth of the city and the creation of counter magnets in the region to mitigate this unbridled expansion, the resultant urban condition is such that the entire National Capital Region can be seen as the area for Delhi's metropolitan center. This is evident in the increase of the urban footprint radiating out from Delhi, where districts keep adding to NCR to sustain the urban population. This contradictory result of regional planning and city planning exercise can be seen in the image on the left which compares footprints of the administrative delimitation of the National Capital Territory, the actual metropolitan footprint and the extent of the National Capital Region.



Multi-Centered Provincial Territory (1060 - 1857)

The citadels in the multi-centered territory were composed of closely packed residential units. This housing typology was space filling, however, did not play a significant role in defining the territory of the citadel.

Historical-Geographical Evolution of Delhi

As seen earlier, NCR has been unsuccessful in controlling the spatial expansion of Delhi. This form of growth is derived from a concentric ring model, where the city radiates outwards from a fixed center. However, when one traces back to some of the earliest urban forms of Delhi, one sees the presence of many other spatial forms and models.

The following section will explore the historical-geographical evolution of Delhi, and bring out the relationship of the city-center/s with the villages and the relationship of the housing typology in defining the territory of the city.

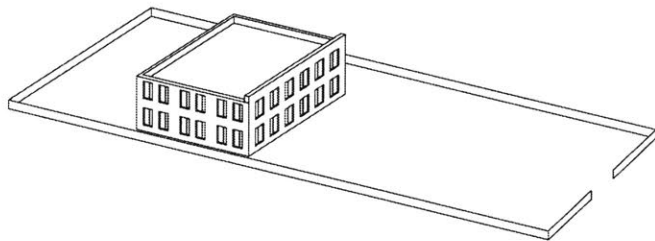
Multi-Centered Provincial Territory (1060 - 1857)

The river Yamuna and its tributaries that enter the plains of Delhi from the North West, along with the Aravallis, which is a weathered mountain range in the South East of Delhi, framed a fertile area for settlements. The

Delhi is popularized as a city of seven cities or a city of seventeen cities, with some ancient settlements dating back to as far as 800 BCE.⁷ Prior to 1911, Delhi and its center shifted with every new dynasty and rule. The center and its power was concentrated in the citadels of the city, whereas a string of villages and settlements that lay outside the citadel were politically semi-autonomous, however economically and socially linked to the center.

7. Hearn, Gordon Risley. *The Seven Cities of Delhi*. London: W. Thacker & Co., 1906

8. Gupta, Narayani. '*Delhi: The Nineteenth and Early Twentieth Centuries*', pg. 262-263, in *Delhi Through the Ages: Selected Essays in Urban History, Culture and Society*. Delhi: Oxford University Press, 1993.



Colonial 'Garden-City' (1857 - 1911)

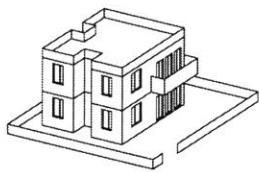
The Bungalow housing typology essentially composed the spatial expanse of the new British capital city. For the first time, the house defined not only its own territory but also was the building block of the city itself.

Colonial 'Garden-City' (1857 - 1911)

In 1908, Delhi was once again crowned the capital of the British Empire. The first state-controlled act of land appropriation for building the colonial capital city of Delhi occurred in 1910-1911 under the Land Acquisition Act of 1894.⁹ Vicinities of Delhi identified zones outside of Delhi to be purchased for future expansion, military control, resource distribution and planning of the territory. In the creation of the capital city-state, the British Raj operated through land acquisition and also provided a special entity status to the villages that lay in the acquired zone. In 1908, the non-agricultural areas of villages were declared politically autonomous from the city of Delhi and this form of land right regulation was termed 'Lal Dora'. The land outside the Lal Dora where the population of the village settled after the marking the land was then considered as extended Lal Dora area. This new boundary condition was called 'Phirni'. The building bye laws of the Municipal area of Delhi did not apply to the villages under Lal Dora. Most of these urban villages are now part of urban Delhi, however, they remain distinct in its boundary and built environment that is characterized by dense, mixed use built environments with thriving informal markets.

This essentially hollow city-center was composed of the residential building typology, called the bungalow, which in turn framed the Parliament. The Bungalow housing typology essentially composed the spatial expanse of the new British capital city. For the first time, the house defined not only its own territory but also was the building block of the city itself.

9. Tyagi, Neelam. The Land Acquisition Act, 1894. New Delhi : Indian Social Institute, 2011



Shelter City (1947 - 1962)

Modeled on British residential enclaves, many new colonies emerged in post-independence Delhi. The housing typology borrowed from the Bungalow, however the territory enclosed by the housing was economized.

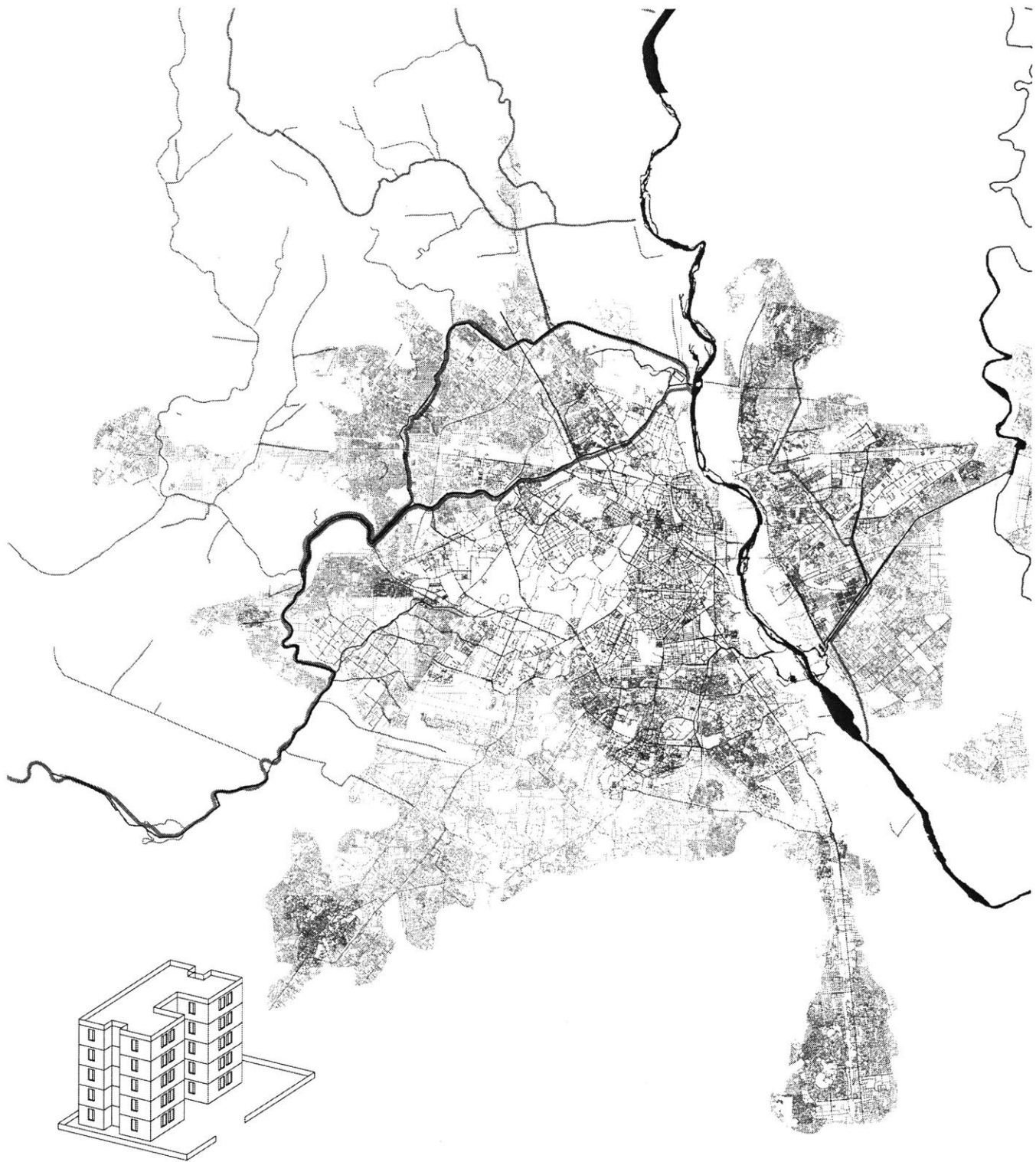
Shelter City (1947 - 1962)

After Independence, Delhi saw a great surge in its population with the city receiving about half a million people post-partition. Delhi, as a shelter city urbanized rapidly and expanded outwards, along with filling the space between the various settlements. The urban area of Delhi increased from 198 square kilometer in 1951 to 323 square kilometer in a matter of ten years.¹⁰

To accommodate this growth, thirty six new residential enclaves called colonies were laid out which were modeled on the residential enclaves that the British built for themselves. The housing typology borrowed from the Bungalow, however both the house and the territory enclosed by it was much more economized than the Bungalow in Lutyen's Delhi.

In response to the massive challenge of planning this growth, the Delhi Development Act and Delhi Municipal Act were established in 1957 to better plan and regulate this growth. With these acts came the establishment of the Delhi Development Authority (DDA) that was given charge of planning the city and allowing expansion of the city by mandating conversion of rural to urban areas. In more recent times, it is this policy which has had a profound impact on rural landscape of Delhi as we will see later.

10. Singh, Shivangi. Capital gains: How 1947 gave birth to a new identity, a new ambition, a new Delhi. Hindustan Times. April 24, 2018. <https://www.hindustantimes.com/delhi-news/capital-gains-how-1947-gave-birth-to-a-new-identity-a-new-ambition-a-new-delhi/story-e0GfoFrhwStTU2910v5DrJ.html>. Last accessed May 11, 2018.



Master Planned City and the Capital Region (1962 - 1991)

The Delhi Development Authority (DDA) supplied a significant housing stock of city. Called 'DDA Apartments', this housing typology was based on the new by-laws and building codes of the master plan.

Master Planned City and the Capital Region (1962 - 1991)

11. https://dda.org.in/planning/mpd_1962_lessons.htm

Delhi was the first city in India to be planned based on a master plan, with the first plan being published in 1962. Historically, every master planning exercise in Delhi has spurred expansion of the city. The master plan of the city envisaged expansion of city in which about 45,000 hectares land was planned for acquisition and urbanization.

Planning in a regional context was introduced with ring town concepts with Narela, Gurgaon, Ghaziabad, Faridabad among other cities. However, rapid population growth overshot plan projections by 15 lakh. The master plan enabled segregated land-use for appropriate built environment, with zoning and sub-divisional regulations. Despite land use controls, mixed land use in residential areas continued. Land was put to extensive use resulting in overshooting of envisaged densities. The plan did not propose integration of the informal sector leading to their exponential growth which outstripped infrastructural facilities.¹¹

Based on the master plan of Delhi, the Delhi Development Authority (DDA) also supplied a significant housing stock of city. Called 'DDA Apartments', this housing typology was based on the new bye-laws and building codes of the master plan and the apartments were categorized by income groups.



Neo-Liberal Urbanization (1991 - 2013)

Economic liberalization enabled increased privatization through fictionalization of rural land. This has resulted in the creation of a homogeneous landscape of high rise housing typologies.

Neo-Liberal Urbanization (1991 - 2013)

India launched a policy of economic liberalization since 1991. Since liberalization measures were introduced, policies for urbanization were promoted. This also led to an increased contribution of urban areas in GDP, from 29 percent in 1951 to 63 percent in 2007 and is expected to increase to 75 percent by 2021. However, with increasing economic growth, prosperity is getting concentrated in cities and urban centers, and the rural-urban gaps in income levels and wages and employment opportunities are widening.¹²

Delhi is at the forefront of this rural-urban contestation that is characteristic of most of metropolitan India. Economic liberalization in Delhi enabled increased privatization through fictionalization of rural land. This has resulted in the creation of a homogeneous landscape of high rise housing typologies. Delhi's rapid urbanization and urban growth is now characterized by growth through exclusion: of different income classes, castes, and the creation of a flat, homogeneous housing environment.

12. Shaw, Annapurna. Emerging Patterns of Urban Growth in India. in Economic and political weekly 34 (16 & 17) : 969-978. April 1999

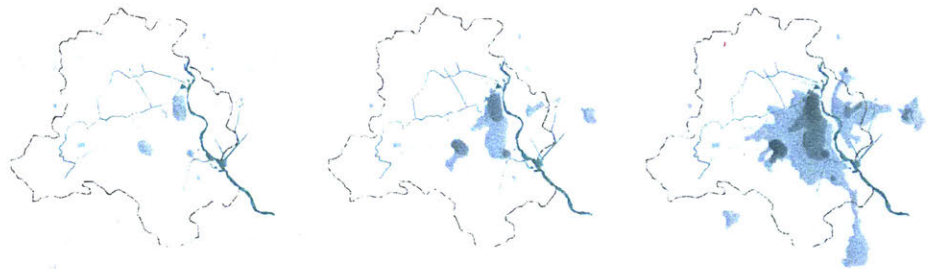
1891 1901 1911 1921 1931 1941

Land Acquisition Act,
1894

LAND POLICIES
(Delhi State Government Policies)

PLANNING DOCUMENTS
(Delhi State Government and
Central Government Planning Boards)

URBAN EXTENT
(Based on Historic Maps and
LANDSAT images)

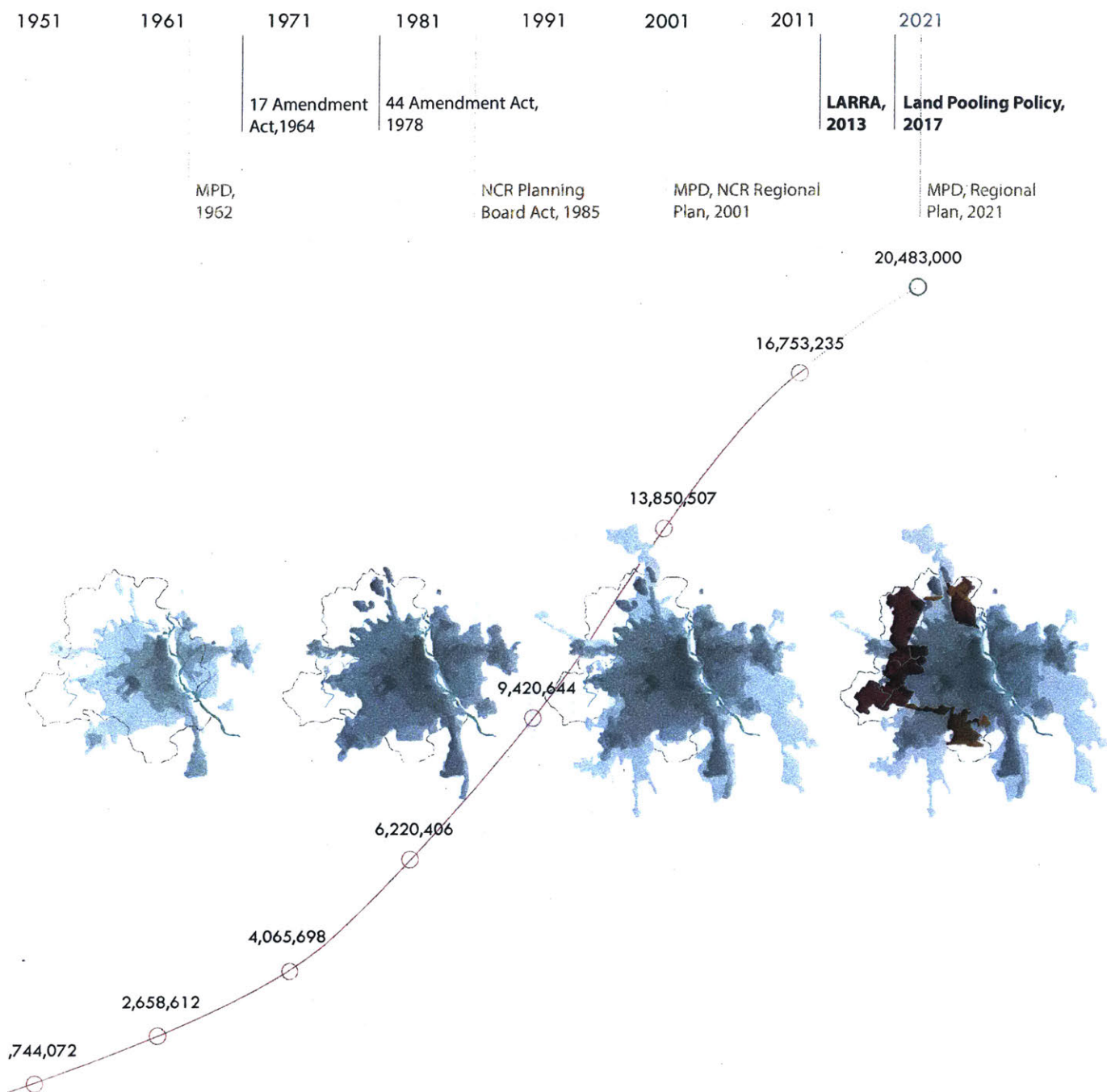


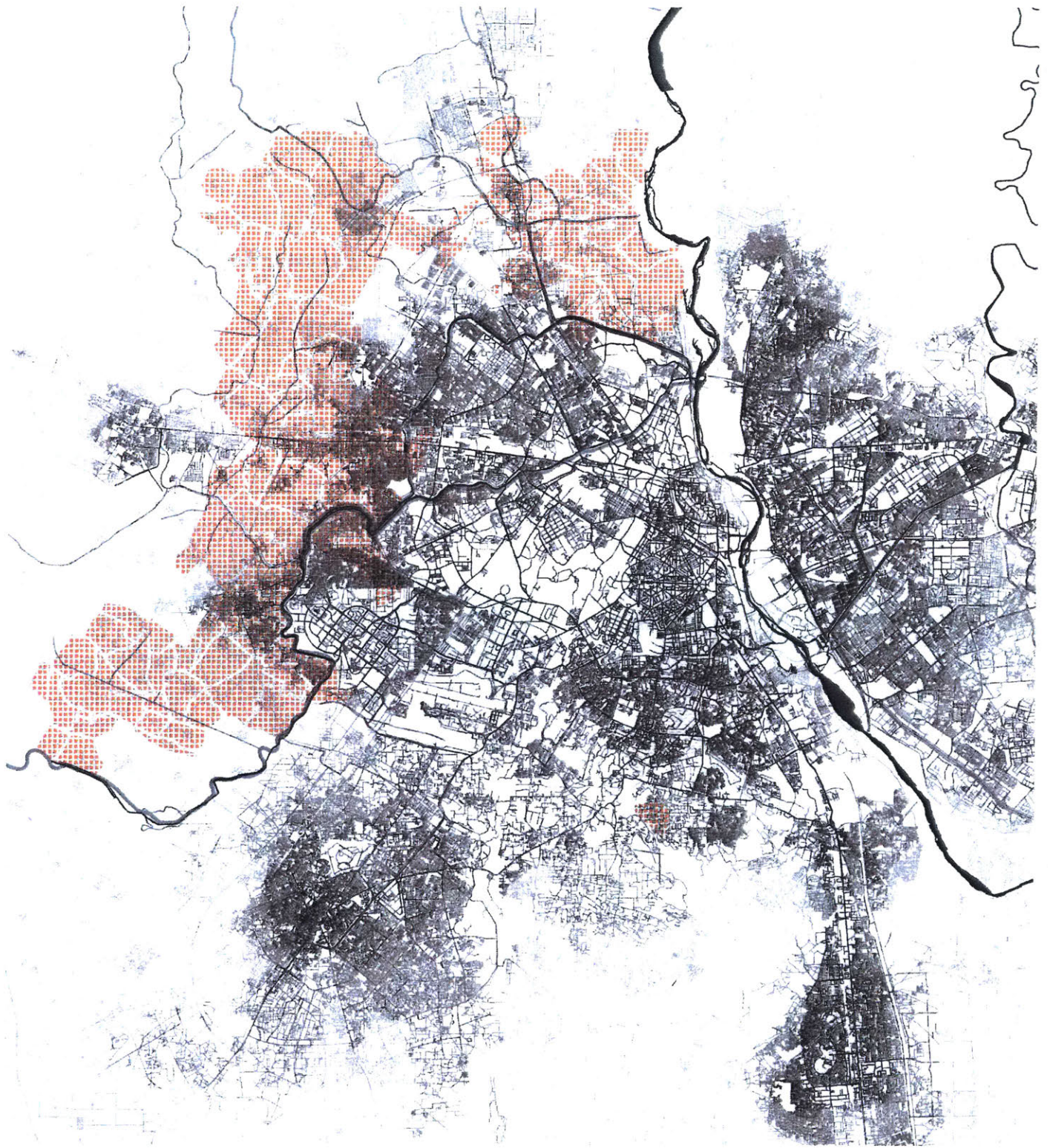
POPULATION
(Based on Census of India Records)



Urban Growth and Land Policies in Delhi

Delhi's exponential growth can be directly related to land and planning policies that have encouraged spatial expansion and increase in population.





A Complete Urbanized State? (2013-2021)

The next wave of urbanization in Delhi will lead to the conversion of 95 villages to urban areas, affecting about 30% of land in the National Capital Territory.

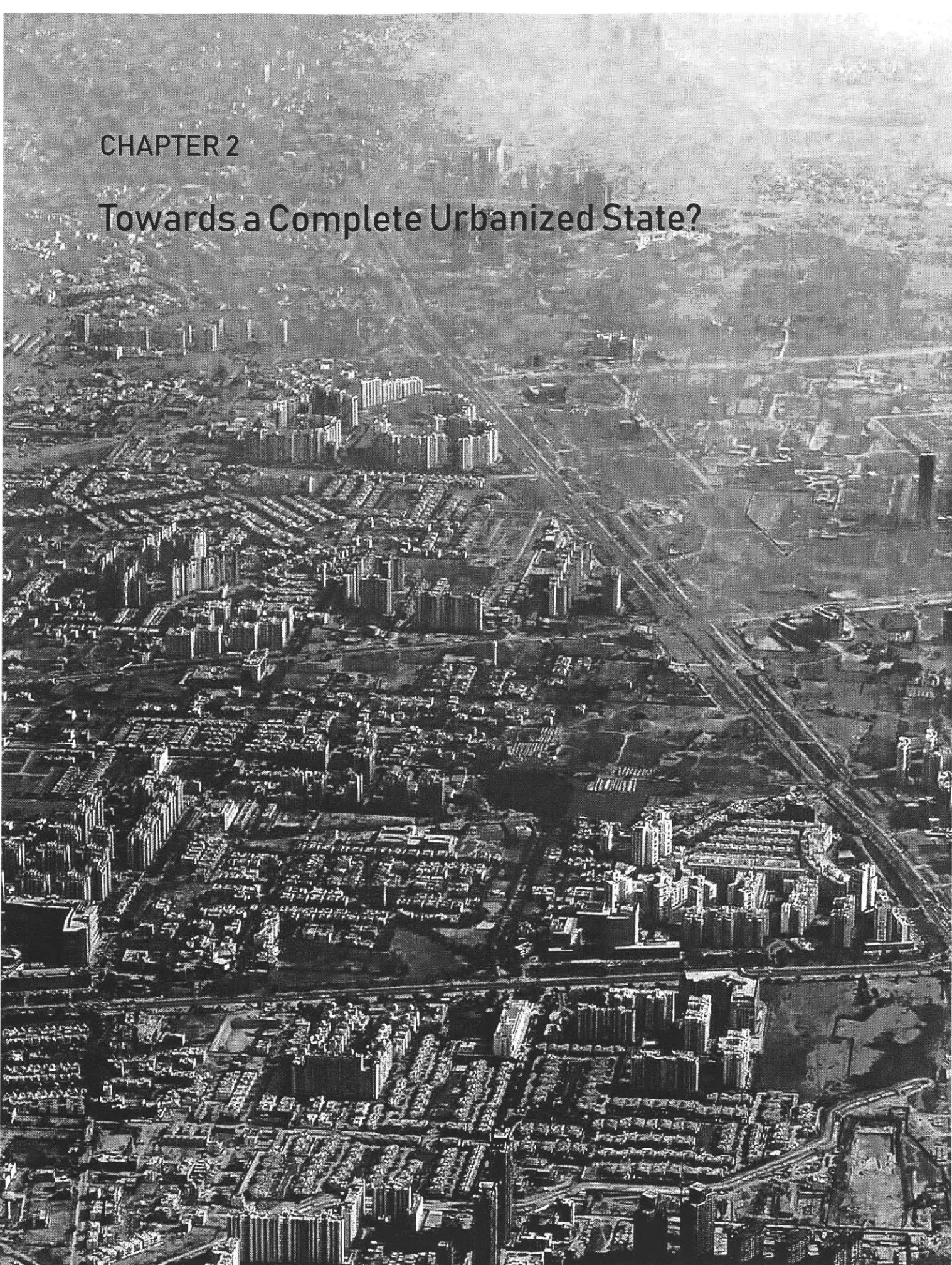
Contemporary Trends of Urbanization (2013 -)

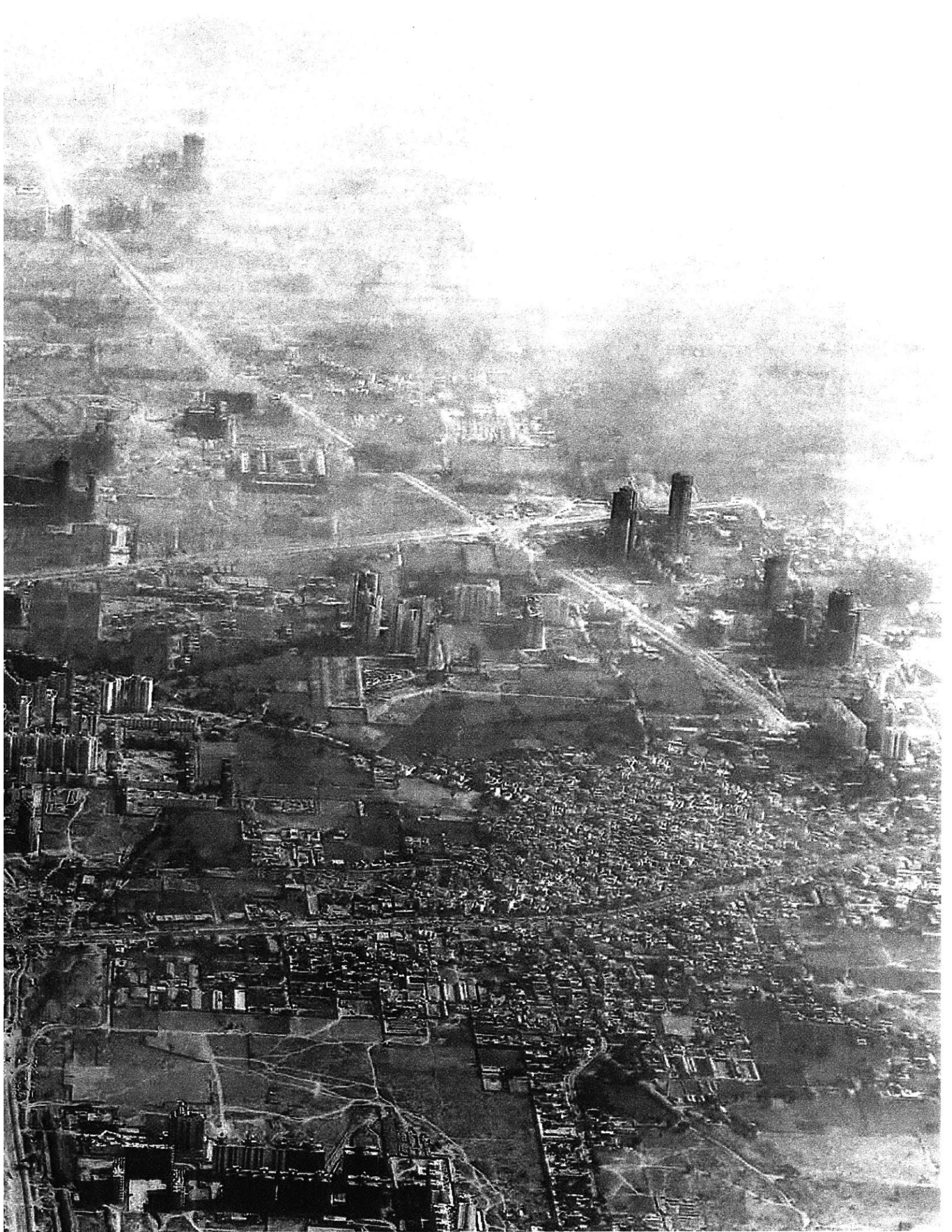
In the most recent urbanization mandate by the government, Delhi's rural belt, seen here in dark grey, is subject to the same processes of urbanization through land pooling and fictionalization as has Delhi in the recent past. The thesis explores an alternative to the city-centric framework of urbanism through the lens of housing and urban form. This wave of urbanization in Delhi will lead to the conversion of 95 villages to urban areas, affecting about 30% of land in the National Capital Territory.

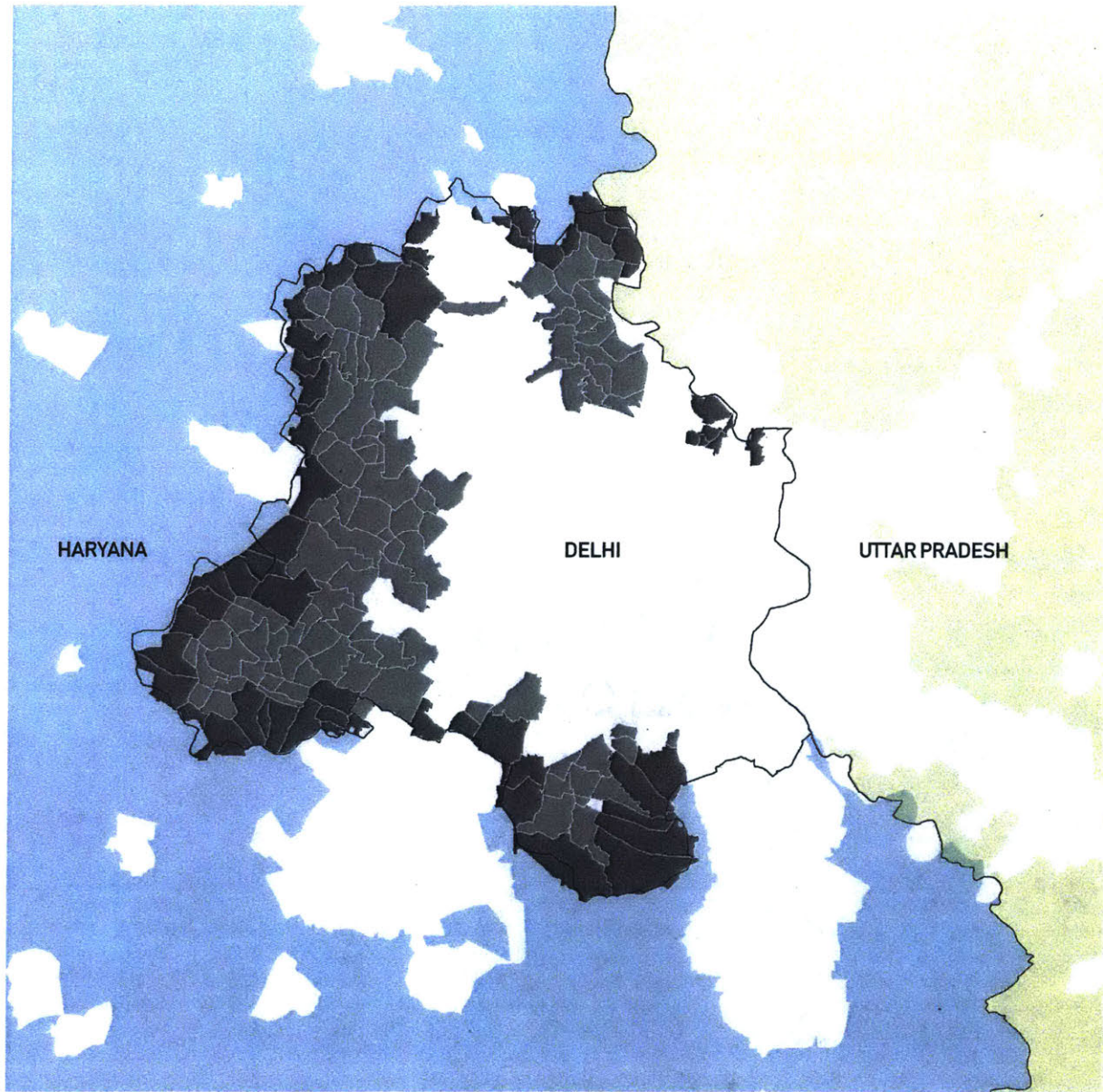
Building on the historical-geographical analysis of Delhi, the next chapter will examine the social, economic and ecological conditions of Delhi in the contemporary milieu. It will also critically analyze the land pooling policy and its implications for the rural periphery of Delhi.

CHAPTER 2

Towards a Complete Urbanized State?







- Rural Delhi (Declared Urban Based on Land Pooling Policy, 2013)
- Rural Delhi
- Urban Territory
- Rural Territory of Haryana
- Rural Territory of Uttar Pradesh

Land Pooling Policy for the Urbanization of Rural Delhi (2016)

Delhi is at the forefront of the rural-urban contestation that is characteristic of most of metropolitan India. Delhi’s rural belt, seen here in dark grey, is subject to the government mandate of urbanization through fictionalization of rural land.

Towards a Complete Urbanized State?

This chapter will study villages in Delhi and the pressures of urbanization that these areas are experiencing by examining state crafted policies of land acquisition and most recently land pooling policy. The current land pooling policy will lead to the expansion of the National Capital Territory of Delhi and subsequent engulfing of the rural countryside. One of the largest conversions till date in the history of modern Delhi, this wave of urbanization is going to impact 419,042 people (not including census towns which are classified as urban villages by the Delhi Government and DDA), 55000 acres of land and 95 villages in Delhi.

A Complete Urbanized State

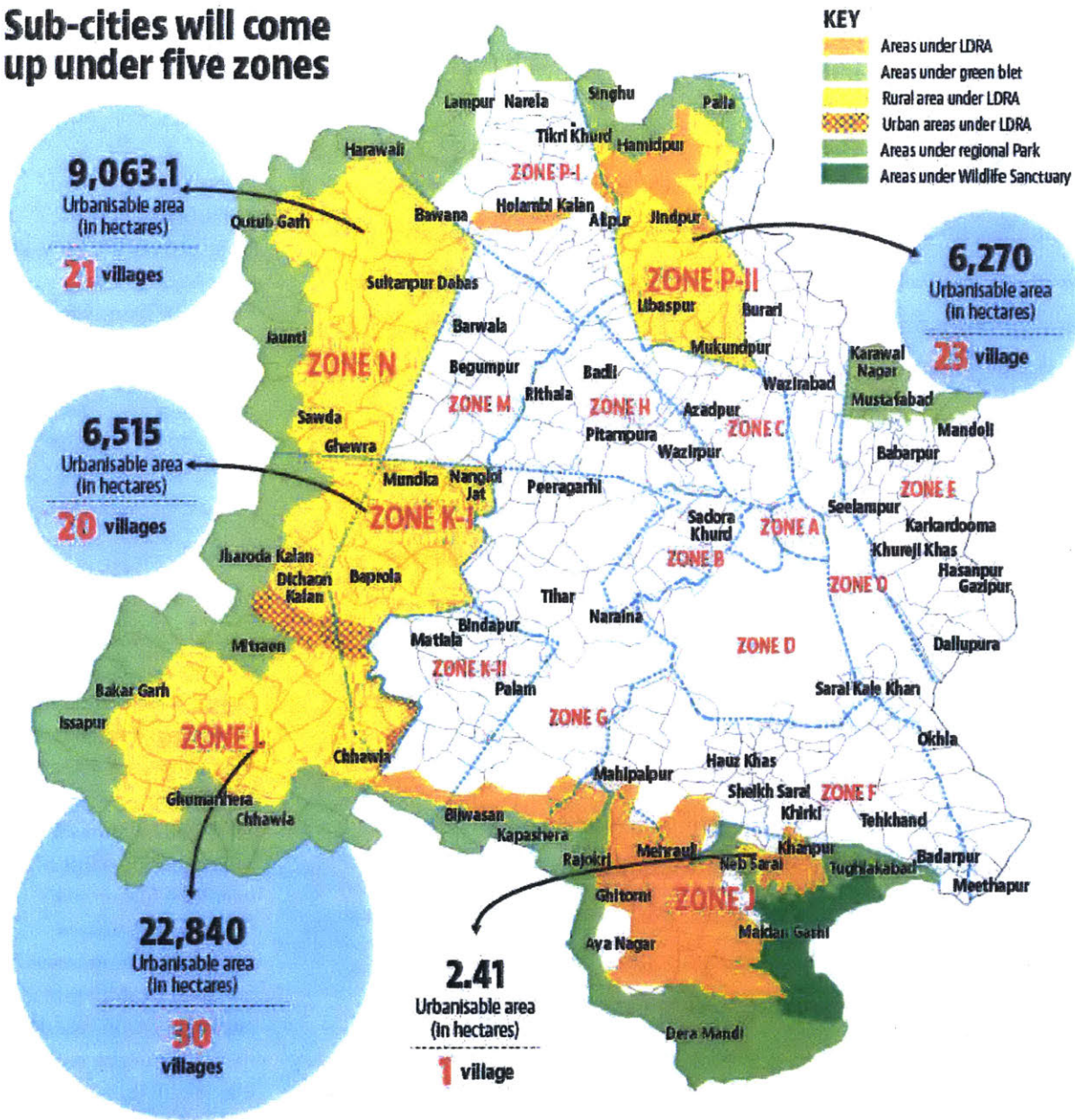
Land acquisition for expansion of the city till as recent as 2013 took place through the Land Acquisition Act of 1894, a remnant policy of colonial legacy. Much of this policy has shaped the satellite cities of Gurgaon and Greater Noida where farmland was acquired through state acts which often saw great resistance from farmers.¹ The land prices of these villages increased as they were subsumed by encroaching urbanization. This economic value of land creates a nexus of certain section of politicians, businessmen, bureaucrats and realty developers who either illegally encroach upon land or purchase it at throw away price, and then make huge profits selling it off at a hefty price.²

This coercive and controversial law was replaced by The Right to Fair Compensation and Transparency in Land Acquisition,

1. Jha, Dhananjay and Sinha, Snehil. Farmer Protests Over Unfair Deals, Have A Long History. Hindustan Times. <https://www.hindustantimes.com/gurgaon/farmer-protests-over-unfair-deals-have-a-long-history/story-uYEXCnhDylvxf5qMpQ9tK.html>. Last accessed May 11, 2018.

2. In a 2015 case, the Central Bureau of Investigation took over the Gurgaon Land Acquisition case citing irregularity in the purchase of 400 acres land from farmers during 2004-2007 at throw away prices causing a loss of over Rs. 1,500 crore to farmers. <https://www.ndtv.com/gurgaon-news/cbi-takes-over-gurgaon-land-acquisition-case-files-fir-1218894>. Last accessed May 11, 2018.

Sub-cities will come up under five zones



Land Pooling Policy for the Urbanization of Rural Delhi (2013)

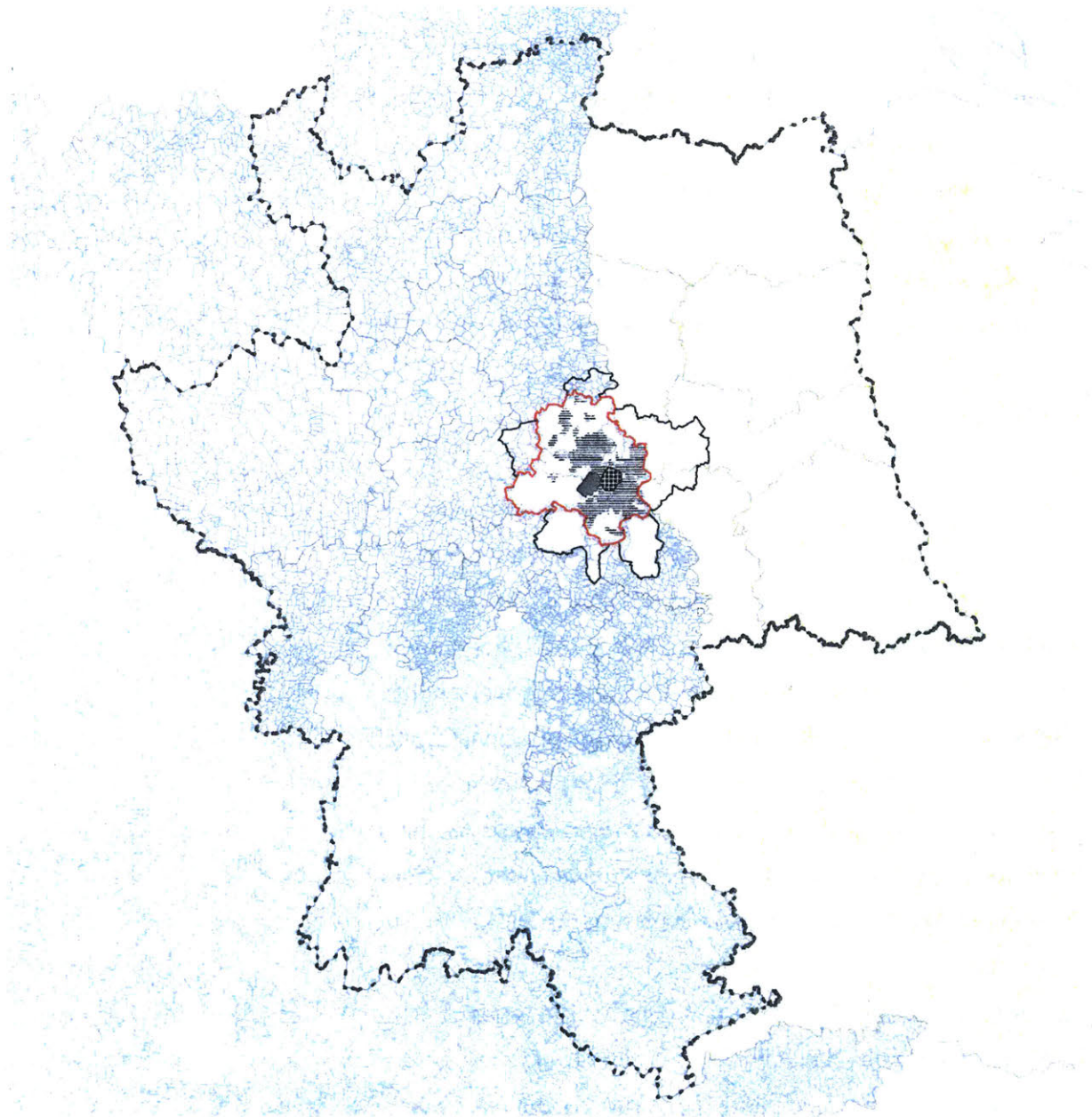
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Rehabilitation and Resettlement Act, 2013. The current Land Pooling Policy in Delhi was notified in September 2013 and has its origins in LARRA. The Land Pooling Policy was used to convert rural land from 89 villages to urban in May 2017 and 95 villages in total in June 2017.³ The move comes following the Master Plan of Delhi 2021 prepared by the Delhi Development Authority, which mandated the conversion of the periphery of Delhi city to urban area to fulfill primarily housing needs for the city.

3. Delhi Gazette
Notification: <http://delhi.gov.in/wps/wcm/t/6897880041563df997bf978c783933a3/176072PERES&lmod=-289838585>.
Last accessed May 11, 2018.

The apparent unified mode of master planning is actually diffused and fragmented into a number of institutions that operate under different government administrations and have conflicting interests. Here we see the National Capital Region of Delhi that operates under four different state governments and central government also operates on the National Capital Territory. Delhi Development Authority (DDA), which is responsible for creation of master and regional plans for Delhi operates under the central government which creates frequent friction between the Delhi government and the DDA.

Delineating the spectrum of legality of different types of settlements in Delhi, the Delhi Development Authority, in conjunction with the Delhi State Government, defines seven different types of settlements that span the entire gamut from completely illegal to semi-legal to legal and planned settlements. The types of settlements categories are Planned Colonies, Urban Villages, Rural Villages, Jhuggi Jhopdi Clusters, Jhuggi Jhopdi Resettlement Clusters, Slum Declared Areas and Unauthorized Colonies. Urban Villages and Rural Villages are the two types of village settlements in Delhi that have their own elected representatives called the Panchayat.

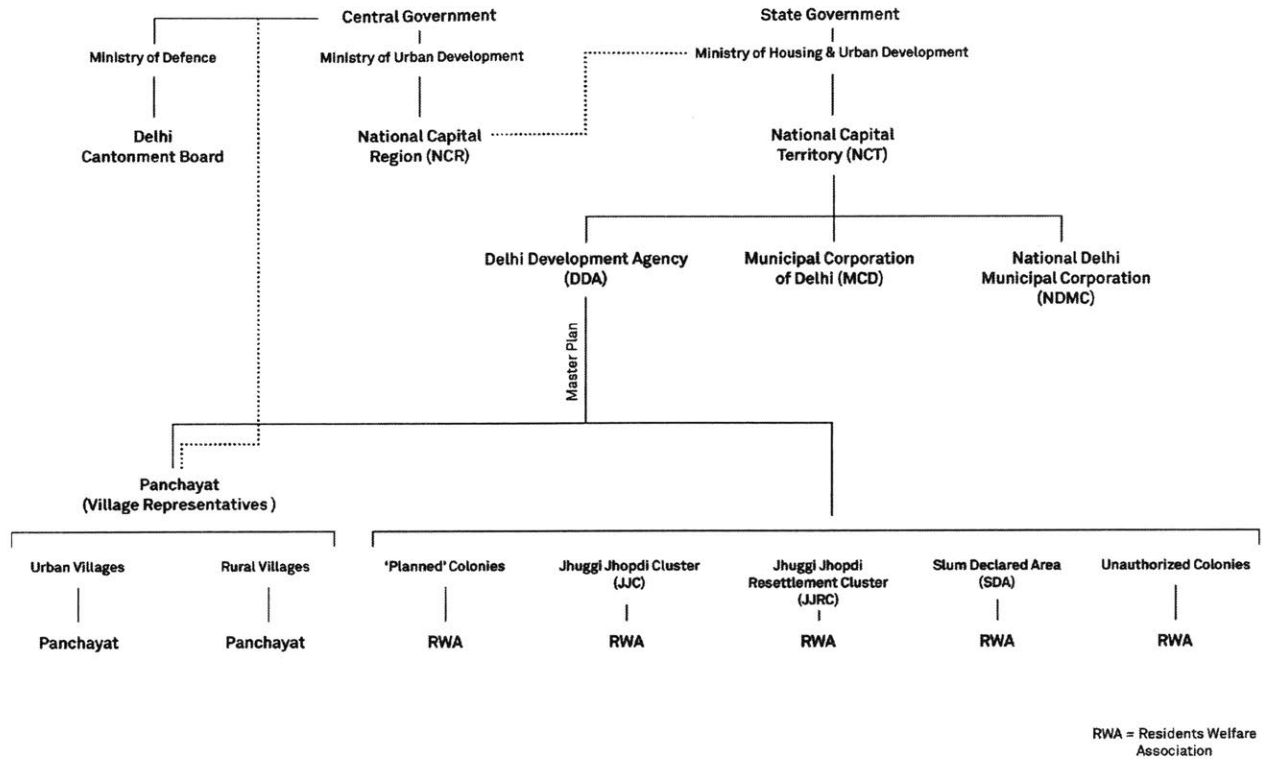


-  National Capital Region
-  District Boundaries
-  Delhi Metropolitan Area
-  National Capital Territory
-  Municipal Corporation of Delhi
-  National Delhi Municipal Corporation

Institutional Governance of the National Capital Region

The apparent unified mode of master planning is actually diffused and fragmented into a number of institutions that operate under different government administrations and have conflicting interests.

Delhi: Planning in the NCR-NCT-Metropolitan Area



Institutional Organization in NCT/NCR

The mapping of these institutions that are responsible for civic administration in Delhi reveals that the residents of settlements such as urban and rural villages occupy the bottom-most rung in the planning exercise and are governed by a variety of institutions that control, manage and distribute resources to them. Hence, the fate of most these urban and rural villages lie not with the Panchayat themselves but on the increased pressure for land pooling that they see from the central and state governments. This does not leave the urban and rural villages many options for transformation, except to sell land and face the pressures of urbanization.



800 per sq km

13,250 per sq km

Social Indicators (Population Density in Delhi)

This map reveals that the density of Delhi is concentrated around its center. With the land pooling policy, most of the rural periphery which is lighter in color will gain the same density as the center.

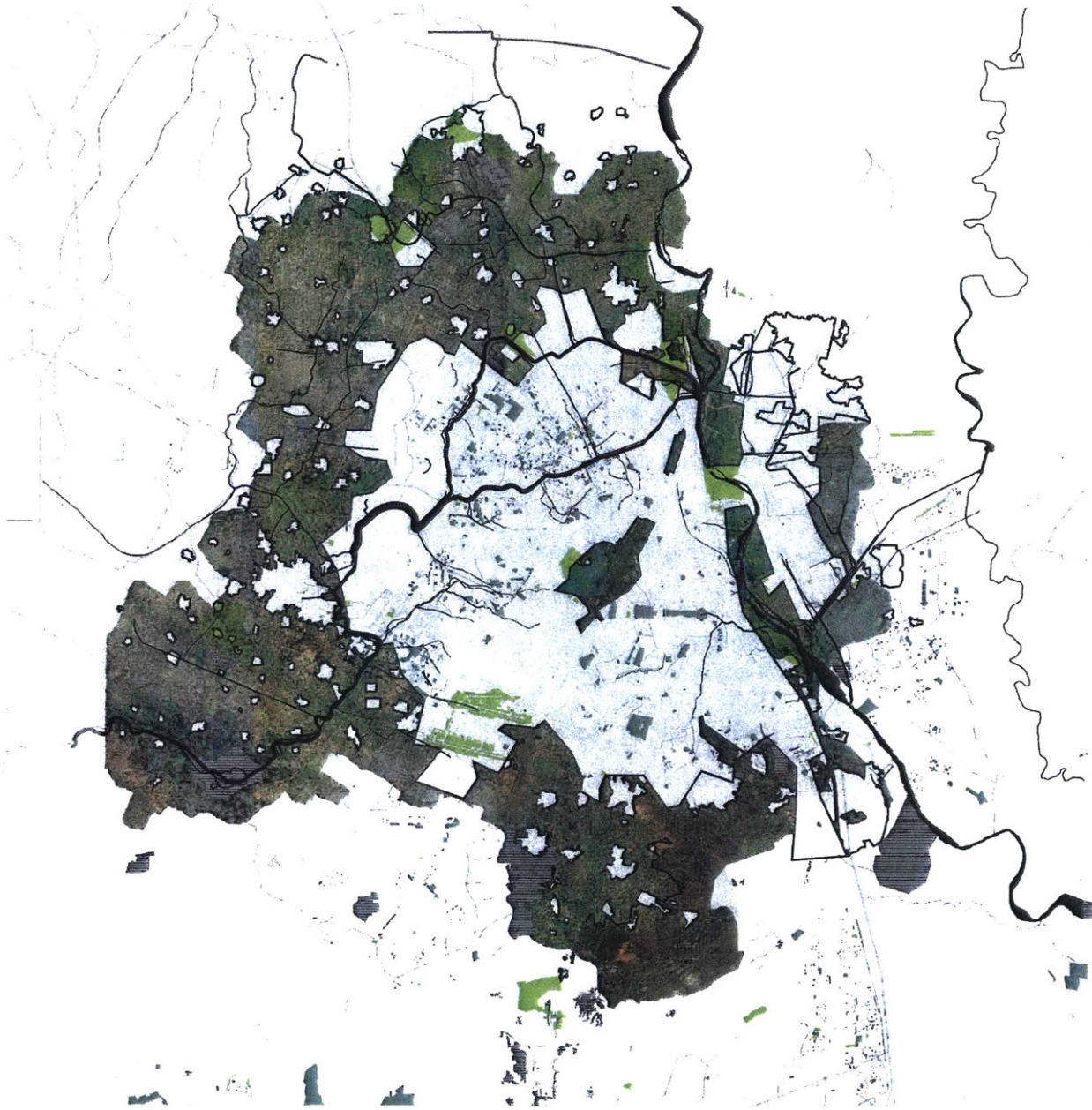
Out of the 362 villages in Delhi, 135 are urban villages and 227 are rural villages.⁴

4. Census of India. New Delhi: Office of the Registrar General and Census Commissioner, India, 2011.

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Current outward expansion of Delhi is taking place through the land pooling policy introduced on 8 September 2013. The Policy has resulted from the Master Plan for Delhi 2021 developed by the Delhi Development Authority. The DDA is responsible in the creation of both the NCT (National Capital Territory) and NCR (National Capital Region) master plans which recognized delimited land for expansion and increase of urban area to satisfy the increasing demand for housing. Most of this development is occurring in the periphery of Delhi.

The policy follows the model of land readjustment following two categories. If the area of land owned is greater than 20 hectares, then 60% of the land will be returned to the land owner or Developer Entity (DE) and 40% will be retained by the Delhi Development Authority (DDA) to develop public housing and infrastructure. Of the land that is distributed back to the land owner or DE, 53% is supposed to be zoned



Ecological Indicators (Water Networks, Agricultural Land, Forests and Fallow Land)

Mapping environmental commons in Delhi, reflect the deep disparity that lies between the urban and rural areas. The rural belt consists of agricultural land, forests, fallow land and village settlements that equivalent to one third of the total land mass of Delhi.

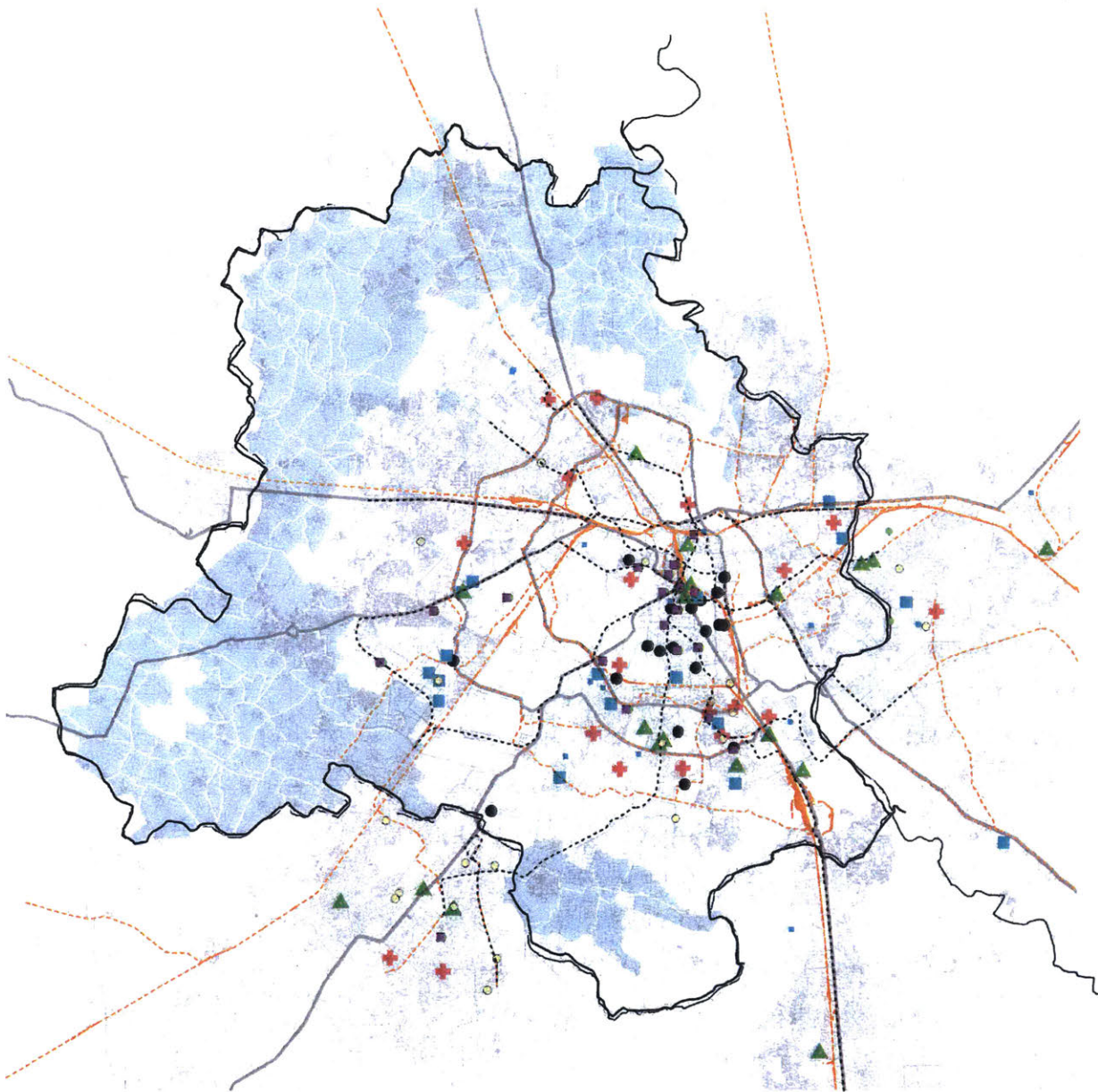
for residential use, 5% for commercial use and 2% for public or semi-public use. The second category is for land holdings from 2 to 20 hectares and it operates on the same principles of land readjustment, however with different percentages of land returned to land owners and land retained by DDA.

Land Pooling Policy in Delhi: Implications

From the model of land acquisition for urbanization, land pooling policy would be considered a step in the positive direction for urban development in Delhi. It is financially equitable for land owners who retain partial ownership of land and receive compensation at market rate for land that is sold as described above. In the meanwhile, public infrastructure and amenities are upgraded through public-private partnership by the municipal agency and the private developer to whom land is sold. In Delhi's case, the creation of public housing mandates creation of Economically Weak Sections (EWS) Housing as well, which to some extent bears measure of social equity. Hence, this policy reads as a perfect model for development on paper, but questioning the purpose for land readjustment and closer inspection of implementation methods are crucial towards understanding the implications and success of these developments:

Rural to Urban Conversion

The Delhi Land Pooling Policy allows for rapid and large scale conversion of rural land to urban and in this conversion, enables easier liquification of land for purchase by private actors. A report mentions that almost 75 to 80% of land in LPP Zones has already been purchased by major Private



- Educational Institutions
- ✚ Hospitals
- Religious Centers
- Museums
- ▲ Banks
- Recreational Centers

Economic Indicators

The mobility networks are profusely developed in the urban areas of Delhi. Institutional nodes are densely interspersed in this network. The rural region, on the other hand is legible for the lack of these networks and nodes.

networks, sewage system, waste disposal system do not reach the village and do not have the same quality of municipal services like the adjacent city. These villages are often overcrowded and suffer the same problems as urban slums.

Land Pooling, which as a form of land readjustment is seen as a progressive tool for planning, to create infrastructure and amenities for underdeveloped regions and to fulfill housing needs of the region. Land readjustment is posited as an equitable and participatory mechanism, where every land owner is included in the readjustment process and is compensated at market rates. However, as we saw earlier, land pooled for readjustment is only as successful as the master plan and its goals. The Delhi Master Plan has focused on development through expansion and hence the resultant readjustment focuses on the needs of the city more than the existing settlement and the city.

In the regional planning efforts of the metropolitan region, it is important to consider allowing the villages to retain and prosper, enabling them to increase their capacity to ease the housing stresses in Delhi without having to urbanize them by erasing and remaking these rural habitations. Models of this type of expansion can be seen in Delhi itself in the historic urban and rural villages present within it and it might be useful to consider these examples in the current planning practices of the territory of Delhi.

have an overdraft of residential enclaves but a significant lack of public amenities and civic spaces creating extremely unsafe environments. Although it might be hard to predict the final built character of these zones, it might be actually reflected in the built environment of Gurgaon, Noida and Dwarka that have been created through a similar wave of urbanization in Delhi's peripheries. One might say that the master planning is intentionally carving off space for different ways of life to exist, thrive and prosper.

The nature of the master plan precludes a significant population in the village to reap the benefits from the readjustment. Residents from rural areas, especially the landless or renters and residents from informal communities are hardly ever included in the planning procedure or in the creation of development plans. The urban to rural conversion, hence, aids in the removal of various forms of property ownership, tenancy and the corresponding civic and socio-cultural values ascribed to the numerous ways in which people occupy land and function on it.

Hence, an emerging result of urbanization is that even as agricultural land is transformed to gated housing communities, villages see rapid change from a rural settlement to an urban slum. Landed property owners often leave the village and rent out their properties to migrant population, most of whom work either as construction laborers or as domestic help in the nearby residential enclave. With this massive influx of rural population, there is a large pressure on existing infrastructural systems of the village. No measures seem to be instituted in the master plan, or the development plan for the planned development of the village itself. Most amenities such as road

networks, sewage system, waste disposal system do not reach the village and do not have the same quality of municipal services like the adjacent city. These villages are often overcrowded and suffer the same problems as urban slums.

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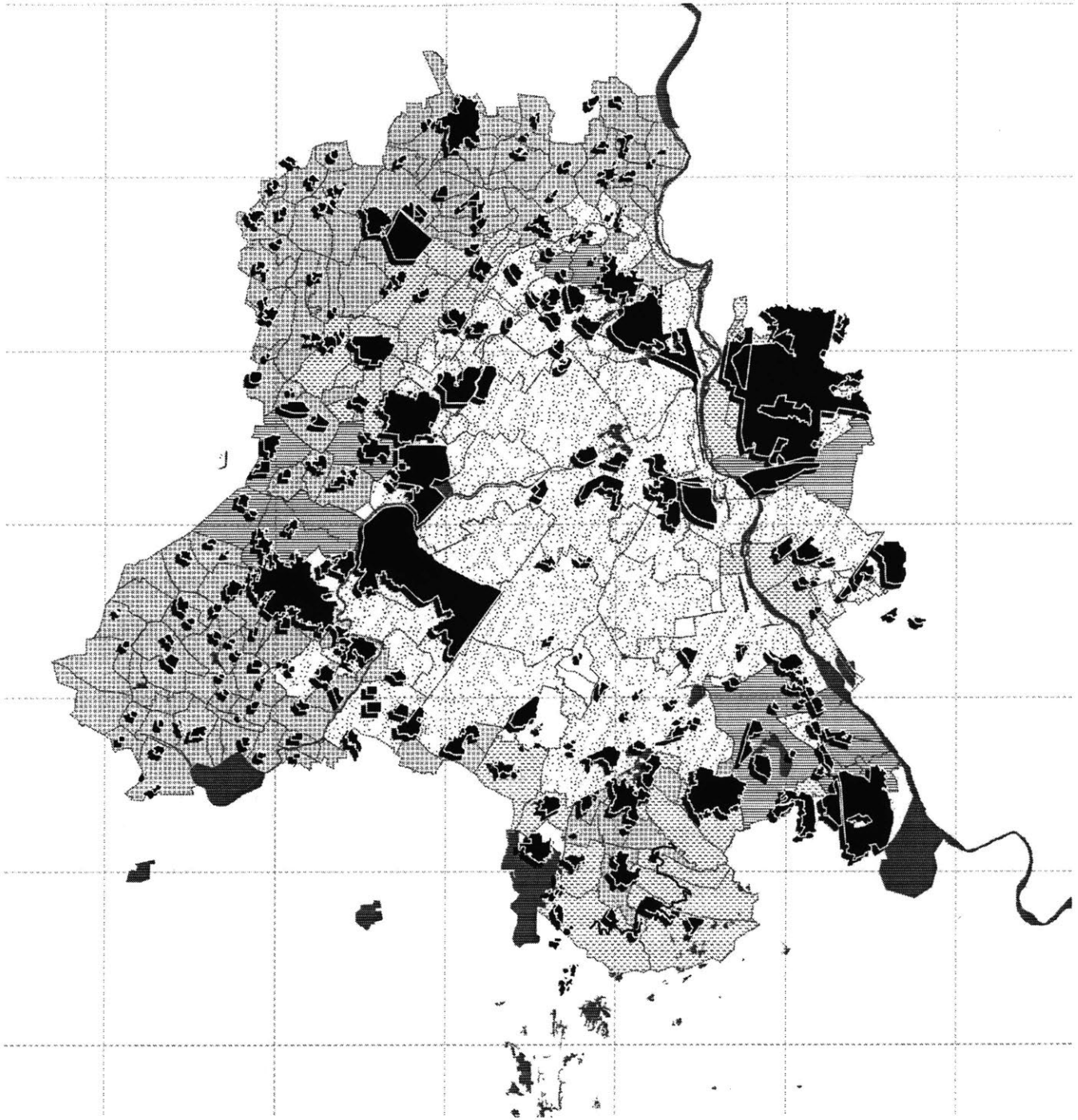
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An aerial night photograph of a city, showing a dense network of glowing streetlights and building lights. The lights form a complex, interconnected pattern across the urban landscape, with some brighter clusters and others more sparsely distributed. The overall scene is dark, with the lights providing the primary illumination and contrast.

CHAPTER 3

The Network Territory:
A Spatial Model for a New Village Urbanism





Archipelago State

Villages in Delhi exist in an archipelagic condition where rural settlements are suspended in an urban landscape. As the city engulfs these villages, the territorial connection of the villages to their land is erased.

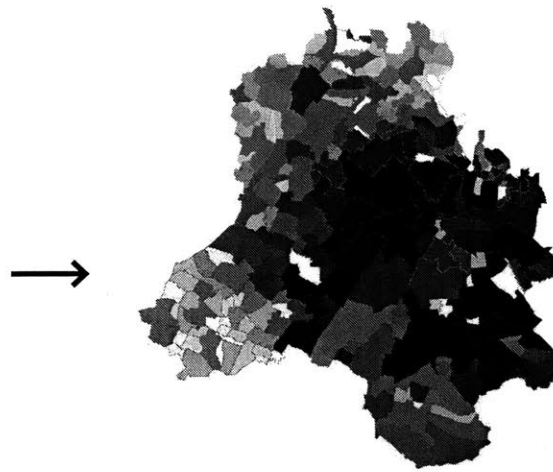
The Network Territory: A Spatial Model for a New Village Urbanism

Archipelagic State

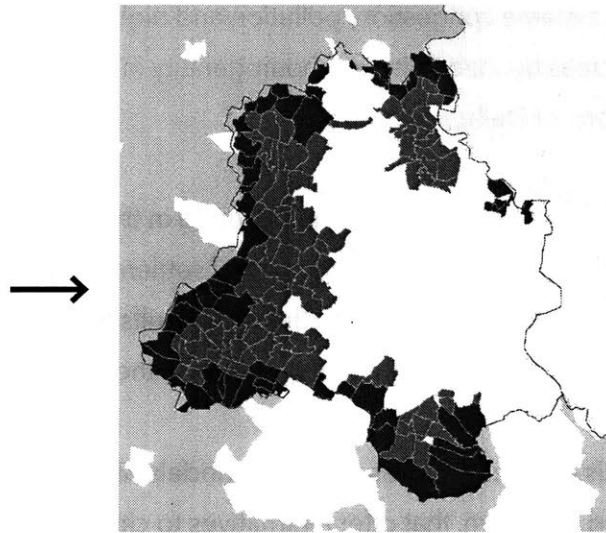
The previous chapter explained how urbanization in Delhi is a phenomenon modeled on financialization of land for rural to urban conversion. This city-centered model for development has aggravated problems associated with agglomeration such as extreme congestion, pollution and high housing costs, increasing inequality and homogeneity in the resultant urban fabric of Delhi.

For villages in Delhi, this has resulted in the creation of an archipelagic condition where rural settlements are suspended in an urban landscape. As the city engulfs these villages, the territorial connection of the villages to their land is erased.

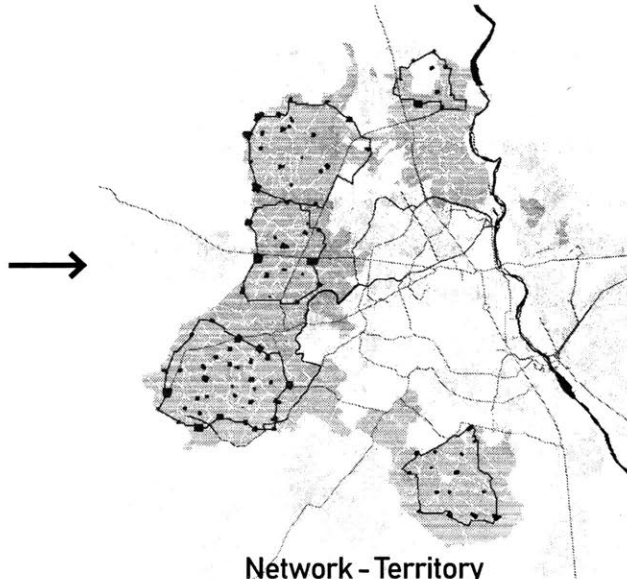
This chapter explores territorial models of spatial organization and urbanism, that offer alternatives to city-centered models of growth in the form of the Network-Territory model. The model is based on the socio-political organization of rural collectives that are connected through a network enabling exchange of materials, people and ideas and the preservation of rural territory. The model is based on the concept of rural collectives that operate between the scale of the village republic or the *Panchayat* and the State or the *Rajya*.



Increase Density



Increase Urban Area



Network - Territory

Forms of Growth

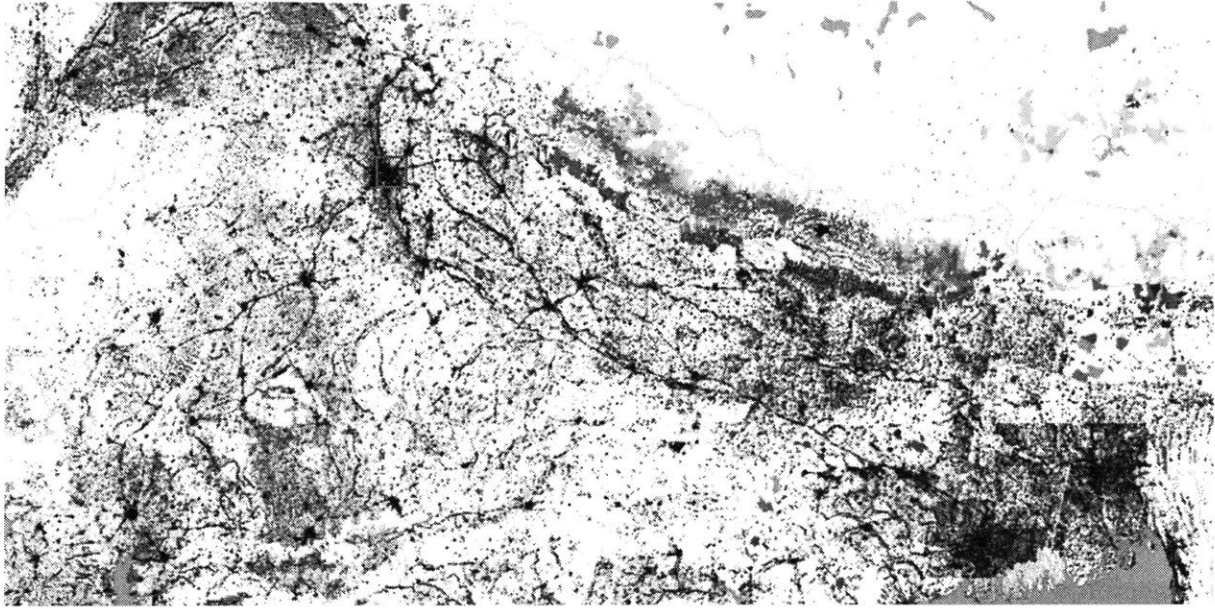
Forms of Growth

There are three options for forms of growth in any urban area:

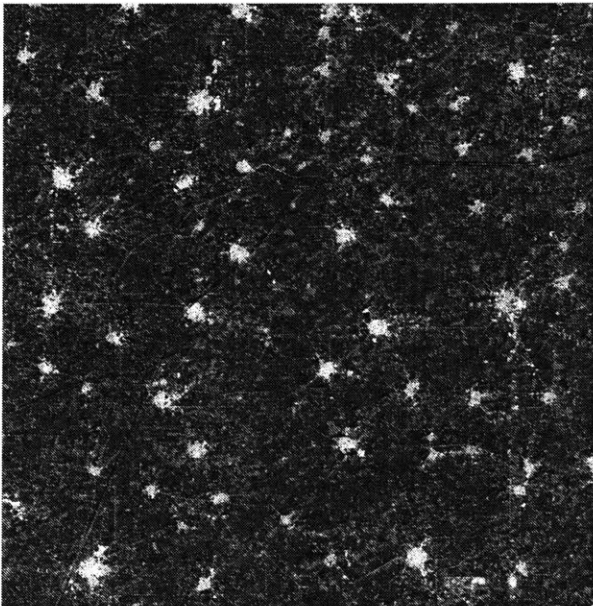
1. Increase Density: Even as there are many areas in Delhi such as Lutyen's Bungalow Zone among others that can be densified, strict preservation laws do not allow densification of these areas. Increasing density in other areas of Delhi would exacerbate issues of congestion and over population.

2. Increase Area: The model of growth through spatial expansion is being used in Delhi through the land pooling policy. As we have seen in the previous chapter, increase in urban area is followed with the removal of agricultural land, forests, fallow land among others. Increase in urban footprint, without decentralizing new settlements generates issues associated with over-urbanization such as congestion, air pollution among others.

3. Network-Territory: The third option for growth is through the model of the network-territory, that I will expand upon in this chapter.



Settlements in the Gangetic-Yamuna Plain



Typical Village Settlement Pattern

The Gangetic-Yamuna Plain is a fertile belt composed of village settlements that are roughly equally distributed in the agricultural territory.

Territorial Organization Models

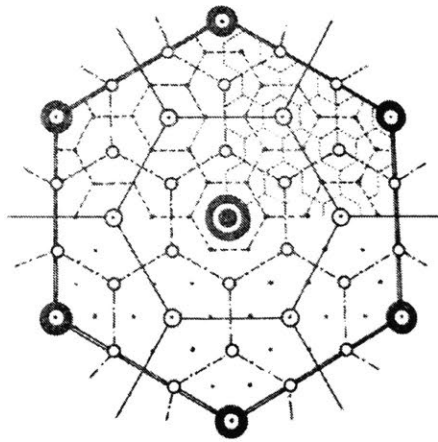
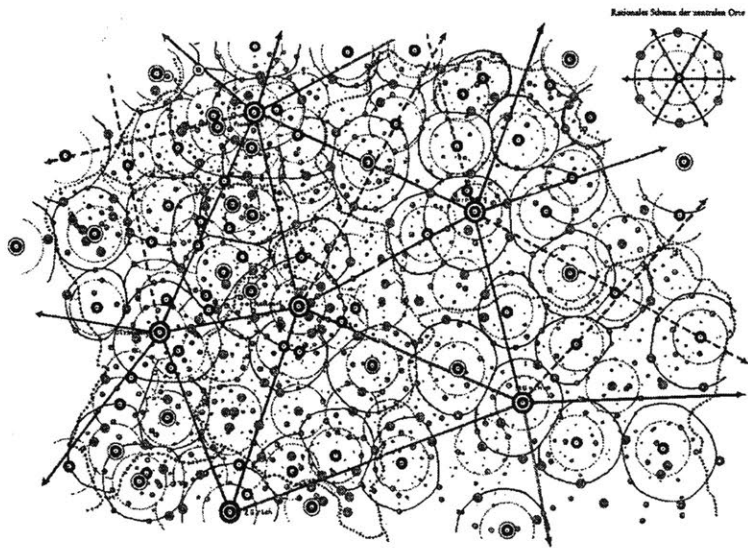
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Gana-Sangha: Organizational Framework

The term Gana-Sangha has the connotation of Gana, meaning equality and Sangha, referring to a collective of people. The terms gana and sangha are used as political terms in Panini's Ashtadhyayi and the Majjhima Nikaya. Gana-Sangha was an alternative to the kingdom system of polity. The Gana-Sanghas were primarily agrarian societies, generally spread around the periphery of the Indo-Gangetic plain, in the foothills of Himalayas, north-western India including Punjab, Sind, parts of Central India and Western India.

Although these political entities were oligarchies, they



Central Place Theory

operated as a republic. Although social and political power rested in the hands of few chiefs, these rural republics offer a framework of organization that arises from villages and is dependent on their collaboration for functioning. In these collectives, power is diffused and all village entities are allowed representation for collective decision making.

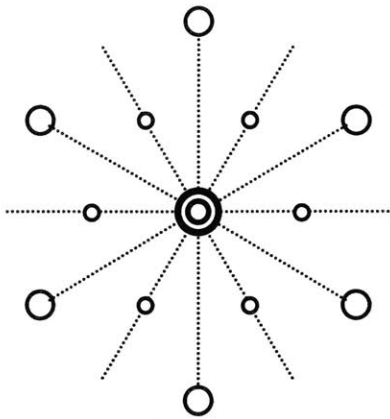
Central Place Theory

Unlike other city-centered models of spatial organization, Central Place Theory by Walter Christaller¹ characterizes a territorial model of dispersed settlements composed of central places or towns that are connected to villages. Although the theory offers a territorial model of organization, it explains a historic condition where farmers would only travel as far as small market towns to sell, and then merchants brought those goods to regional centers and great national cities. In the model, towns are centers of rural surroundings and mediators of local commerce.

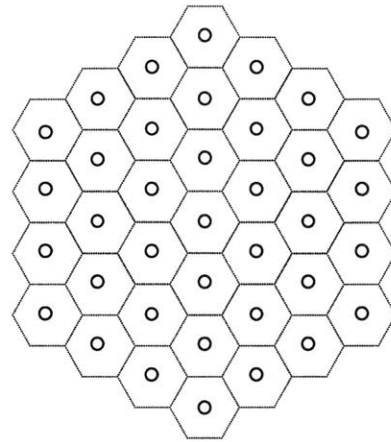
Yet as transportation costs have declined, goods-based networks have become far less meaningful, and instead, networks are linked by the movement of people and ideas.² The inter-connected networks are powerful diagrams but assuming a uniform distribution of the different nodes across space, people and territory is misleading. Both the functional and economic spatial models do not take into account the strength of contemporary networks which can allow for decentralization of centers and mobility across the network.

1. Christaller W. *Die zentralen Orte in Süddeutschland: Eine ökonomisch-geographische Untersuchung über die Gesetzmäßigkeit der Verbreitung und Entwicklung der Siedlungen mit städtischen Funktionen.* Gustav Fischer, Jena, 1933

2. Edward L. Glaeser
Giacomo A. M. Ponzetto
Yimei Zou. *Urban Networks: Connecting Markets, People, And Ideas.* National Bureau Of Economic Research



Radial, Expanding Concentrically
Hierarchical
Connected



Mosaic, Space-Filling
Hierarchical, but also semi-autonomous
Disparate settlements, weak connections



Urban Footprint of Delhi



Rural Footprint of Delhi

Network Territory

The Network Territory

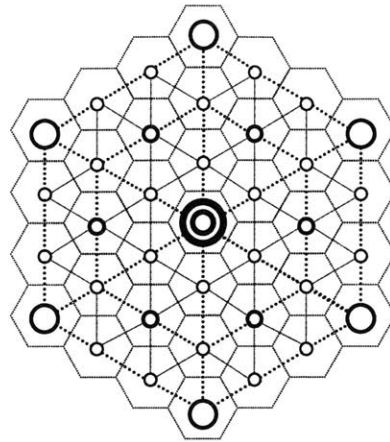
The Network Territory combines the network model of connectivity along with territorial preservation of rural land forms. The network is an urban condition is characterized by an intensive proliferation of nodes. Representing the urban condition, the network is radial, expanding concentrically and hierarchal. The network also presents a functional/economic model of organization. The territory presents the rural spatial model of organization. This mosaic, space-filling model offers a semi-autonomous framework of disparate settlements, but having weak connections among themselves.

The Network-Territory is hence, a symmetric model of village and city spatial organization, offering equal connection between the nodes and allowing collective territorial planning. In the model, one is considering networks that allow the mobility of people and ideas, essentially expanding the urbanity of a place to a multitude of areas. These mid-level networks enable the flow of people and ideas, and often the two move together.

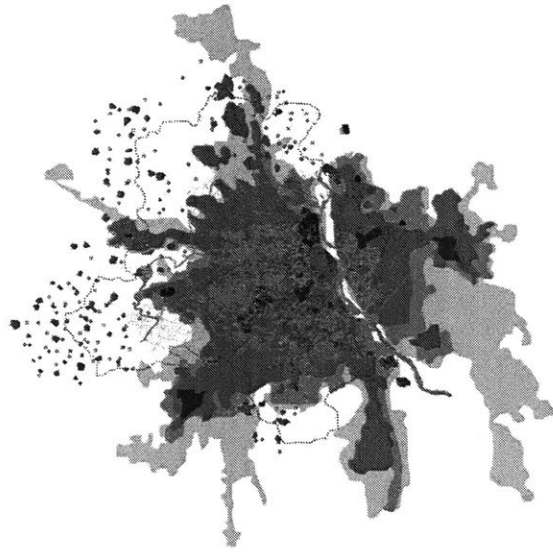
The Network-Territory Model for Delhi

Urban population growth is so immense that mega-cities like Delhi seem doomed to terrible dis-economies of density, such as crowding and traffic congestion. To accommodate for its population growth, cities have three options for growth: increase in density, increase of area and the third model of network-territory that has been discussed earlier.

For increasing the density, Delhi's core of Lutyen's Zone is more



Network + Territory
Symmetric
Strongly Connected



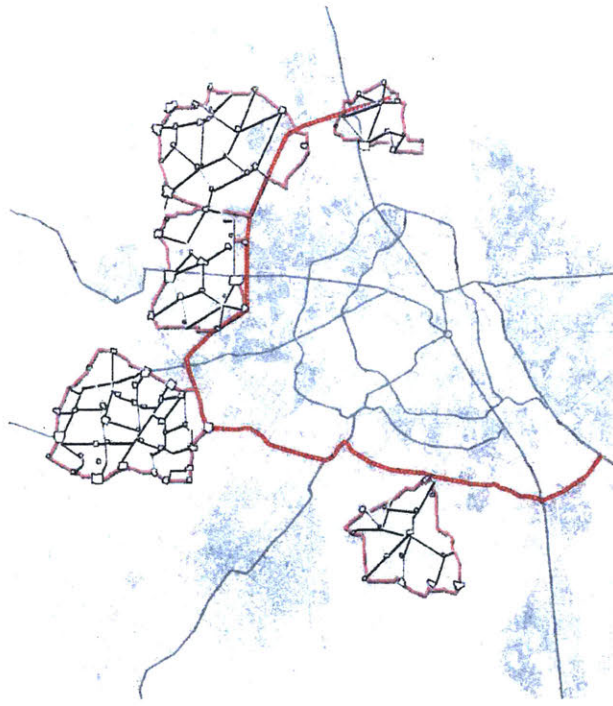
Rural + Urban Cooperation

Network Territory

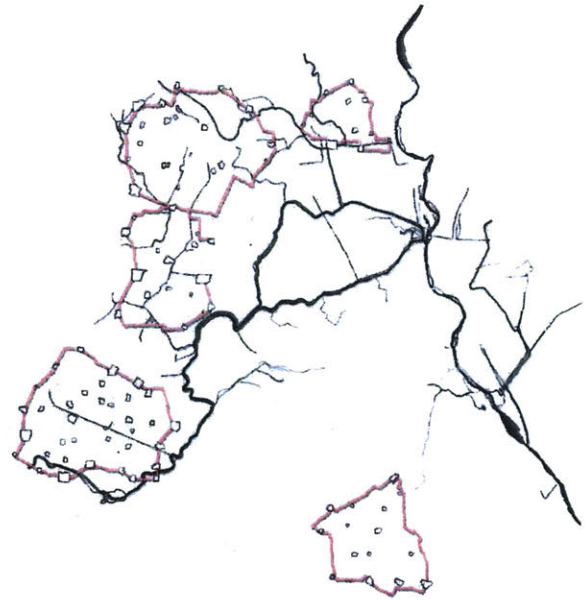
vacuous than other parts of the city. There have been many plans and recommendations made to the planning agency to repopulate this center, but the political pressures keep these plans from realization. On the other hand, people from across Delhi flock to the center for its political, cultural, recreational, center.

The current model of urbanization is based on growth through increasing urban area. However, disadvantages of agglomeration such as extreme congestion, pollution and high housing costs far outweigh its benefits.

The Network-Territory model of spatial organization, by allowing for both growth and preservation offer a unique model of urbanism that is based on village urbanism. Based on the model, the strategy of growth generates a village and city development model.



Mobility Networks



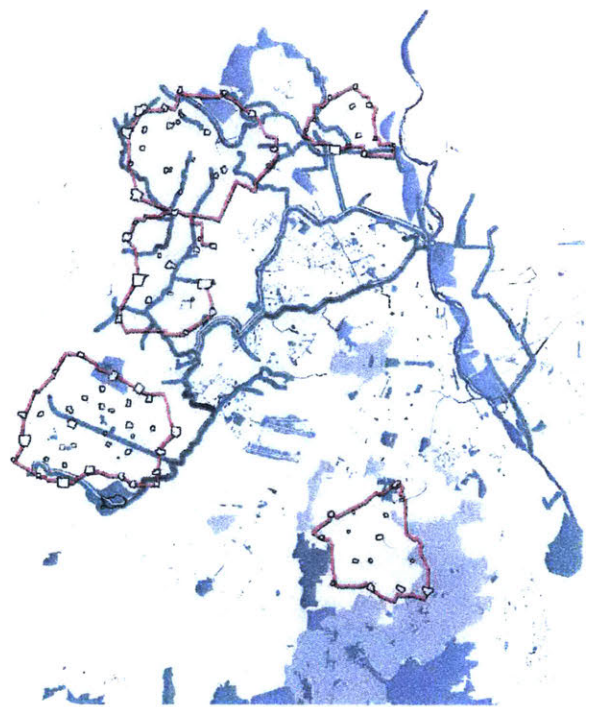
Water Networks

Network-Territory Proposal for Delhi

The Network-Territory strategy for growth in rural Delhi expands the existing networks to the rural peripheral areas. Based on the concept of gana-sangha or village collectives, the network-territories are organized around these collectives.



Agricultural and Village Territories



Forests, Parks and Gardens



Village Collectives for Network-Territory

The network-territory creates a system for ecological and social values of landscape territories to persist and transform the new collective settlements.

The Network-Territory strategy for growth in rural Delhi expands the existing networks to the rural peripheral areas. Based on the concept of gana-sangha or village collectives, the network-territories are organized around these collectives. The mobility networks for the village collectives are based on a symmetric connection where every village settlement is connected to one another and the village collective is connected to each other and the city through a new circuit around the city.

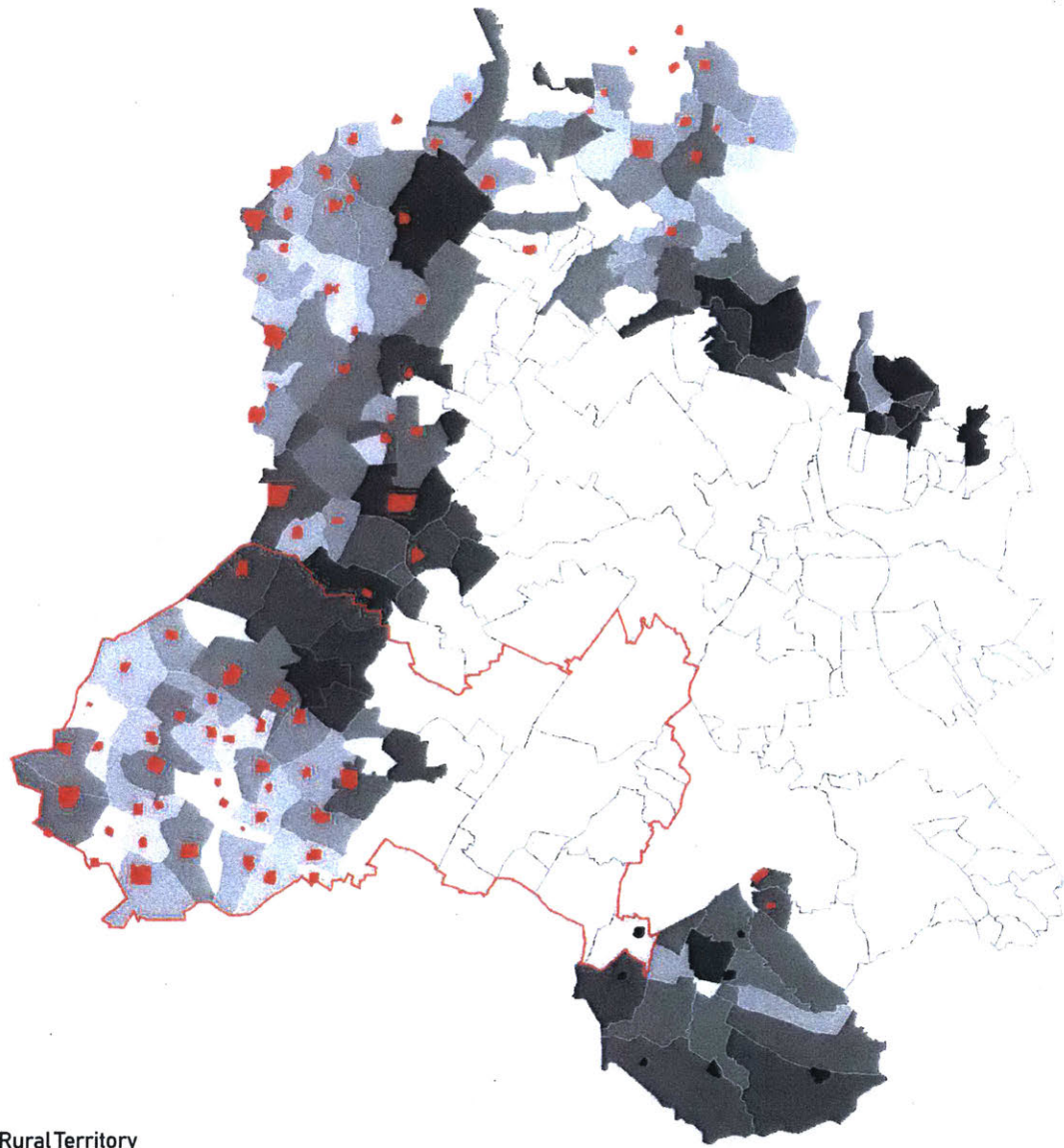
These networks become the base infrastructure for new housing to inhabit the rural landscape. The new housing becomes the threshold between rural and urban, and between the networks and territories. Water networks already exist between the rural and urban area of Delhi. Most of the water drains emerge from the surrounding, enter the rural area and drain through the urban area to Yamuna river. The networks, hence create a system for ecological and social values of landscape territories that retain ways of life in the village and transform the new collective settlements.

CHAPTER 4

Voices and Visions: The South West District Collective







- Rural Territory
- Urban Villages
- Rural Villages
- Urban Territory

Villages in the South West District

The map reflects the villages in rural and urban villages of Delhi and its territory. The chapter will focus on the villages in South West District of Delhi, highlighted in red above.

Voices and Visions: The South West District Collective

Unlike the urban realm which has a predominantly functional and productive relationship with its 'hinterland', rural society has a much more complex connection with its territory.

Intricately linked with the daily life and activities of the people, the rural landscape is organized through the rituals of rural life in its functional, symbolic and aesthetic values.

Through the particularities of each place and socio-political order that operates on it, every settlement in these districts has a distinct identity and a particular way in which they operated in the wider territory. Development narratives often exclude villagers and other residents who are not involved and consulted in planning and designing their lands and territories, and hence this chapter will attempt to address.

This chapter will explore the personal stories of people living in the villages of North, South and particularly the South West districts of Delhi and the impact of current processes of urbanization on them. The impact of these urban patterns are not isolated and limited to villages, but can be heard in issues raised by every citizen of Delhi: from traffic congestion, air pollution, increasing water stress, flooding and lack of affordable housing among other issues. Even as new developments are proposed to make up for the lack in present situation, the current issues related to urbanization only seem to be exacerbating.



Urban Sprawl around Najafgarh Drain





Water Networks: Ponds

Most villages in Delhi have a system of ponds that conserve water and regulate flooding. Most of these existing ponds will be filled up and leveled to make way for the new urban fabric.





Agricultural Landscapes

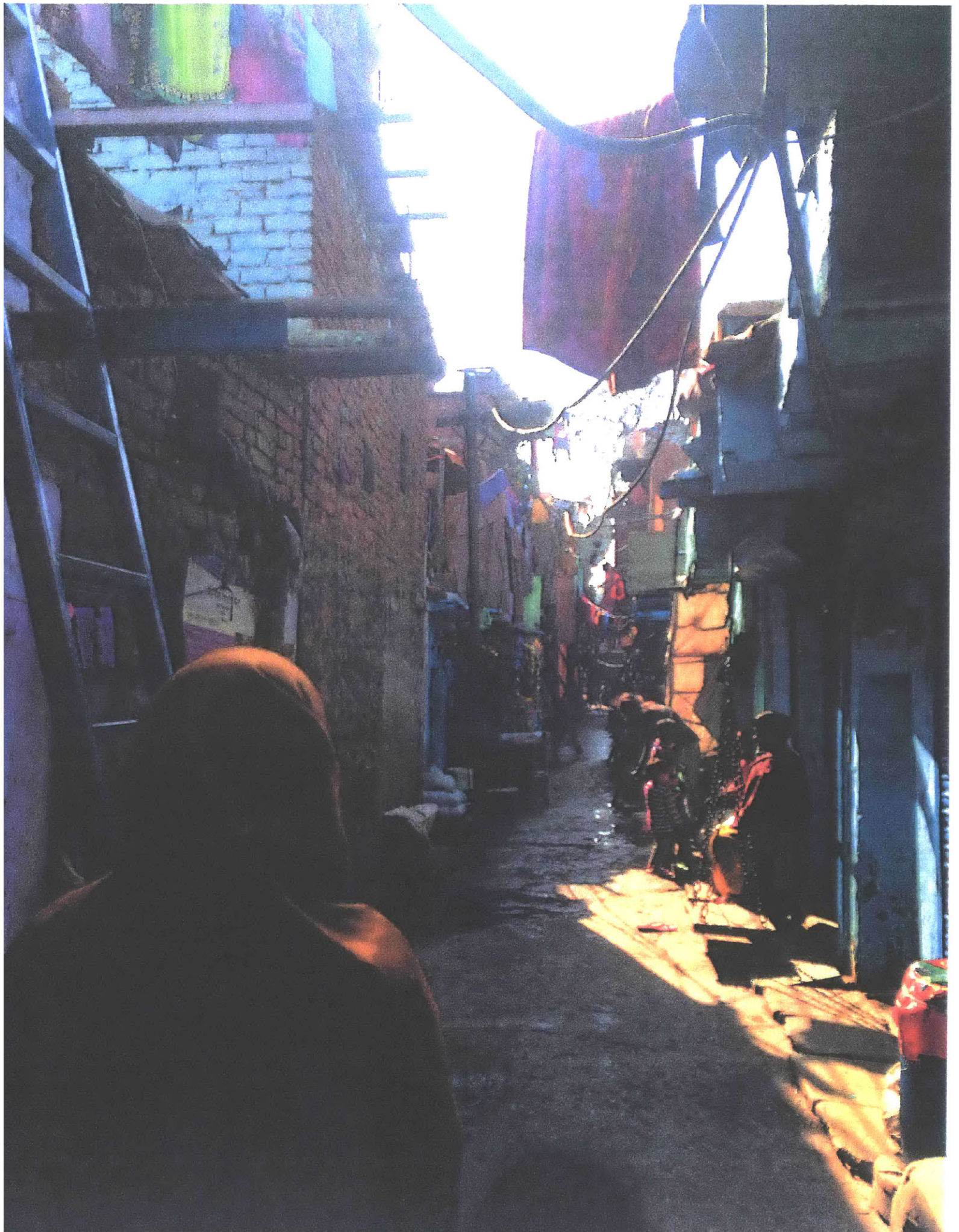
The agricultural land in the rural periphery consists of about 30 per cent of the total land in Delhi. This land cover helps permeate water and increases carbon capture and generates food for rural and urban Delhi. Most of these ecological values are eliminated in the new urban developments.

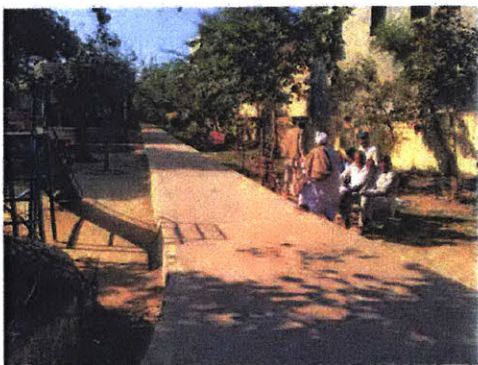
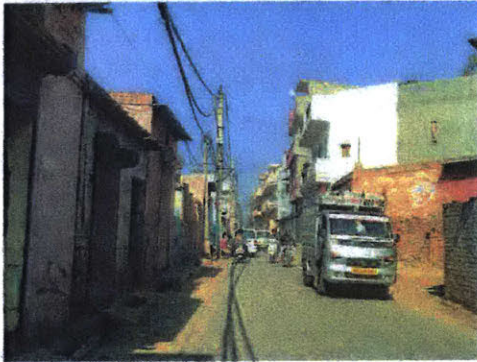
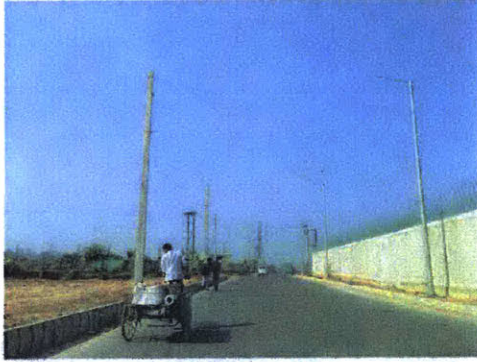




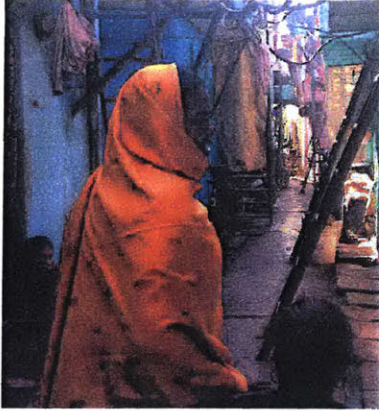
Village Settlements

As villages are taken over by the urban sprawl, villages change to ghettos. In the space between the villages and urban areas, informal settlements are established where the urban poor find refuge.

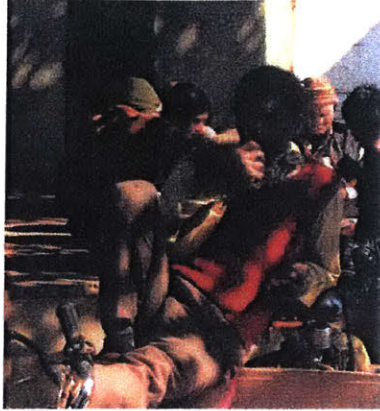




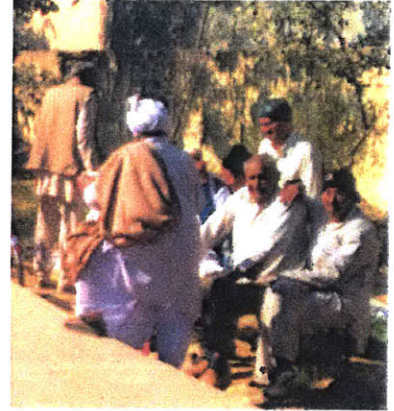
North District: Badli and Seerampur



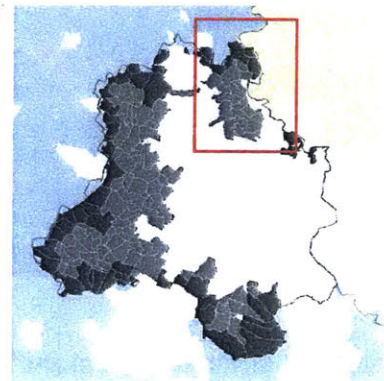
Initially, seasonal migrants, the residents of the Jhuggi Jhopdi Cluster next to Seerapur village in North Delhi, are now permanently settled here. The village women have organized a NGO as a measure to generate income and protect themselves financially and socially.

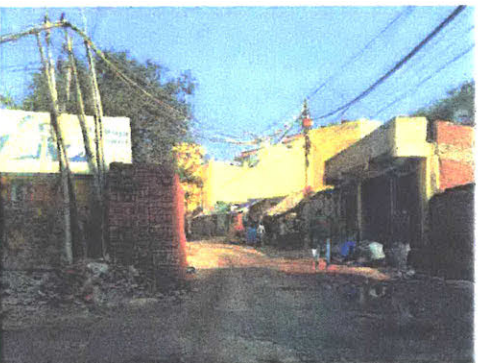


The residents of the village in Seerapur were originally farmers, but now are mostly earning their income through rent from their properties. Apart from some farming and horticulture, the village mostly operates small-scale industrial activities, whereas the newer generation have found themselves work in other parts of Delhi.

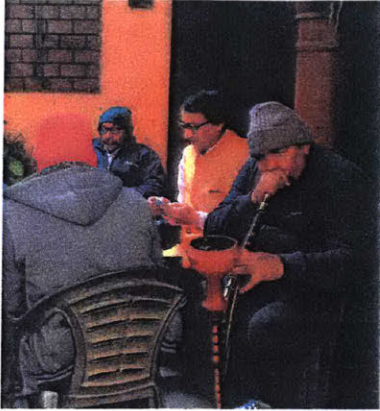


The farmers which own little or negligible amount of land find themselves in a situation where they have to rely on other means of income to support themselves. Most farmers in Seerapur were

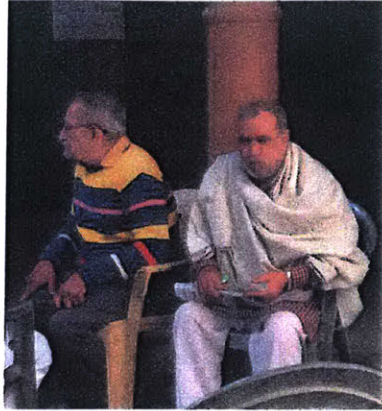




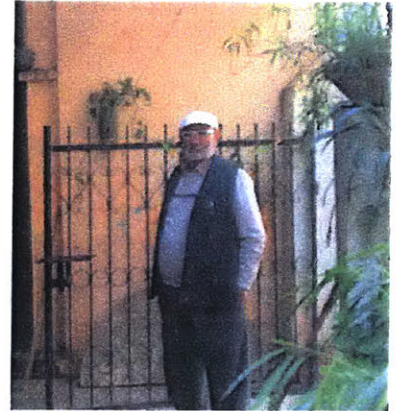
South District: Neb Sarai and Maidangarhi



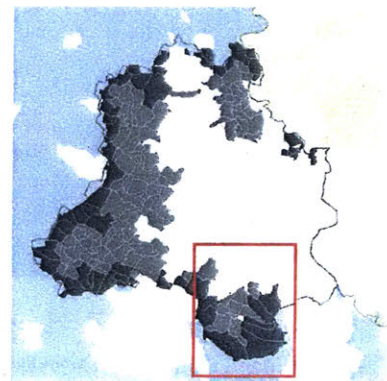
Village residents do not pursue agricultural activities anymore. Most of the income for the villages are generated through the rental market.

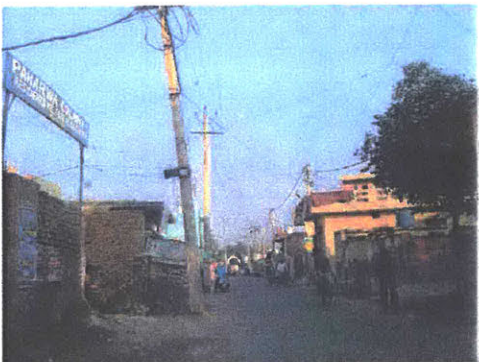
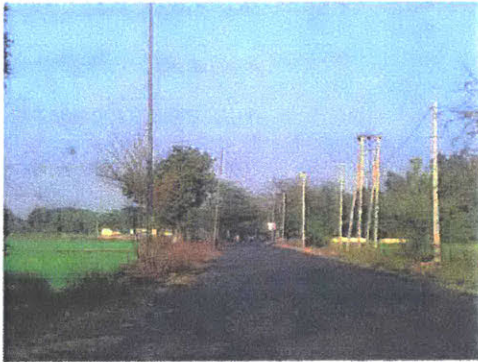


There is only a certain amount of land that is available for urbanization in South Delhi. The urban villages of Neb Sarai among other village settlements in this area have increased in population, however, public infrastructure and amenities have been remained the same.

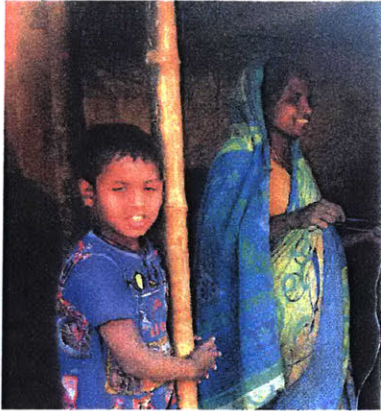


Villages in South Delhi who are not included in the plans of urbanization will receive no benefits, either in terms of relieving the housing stress or the need for better infrastructure.





South West District: Chhawla and Kanganheri



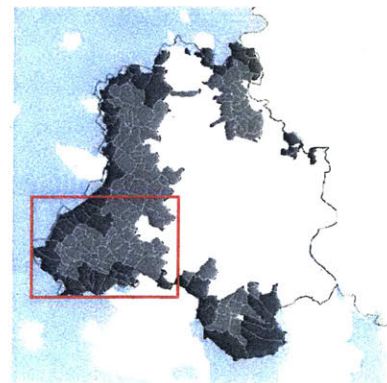
Seasonal migrants participate in the labor market and work as rag pickers, domestic workers, construction laborers among a host of other occupations. These minorities face weekly evacuations from temporary shelter sites operating in and around villages.

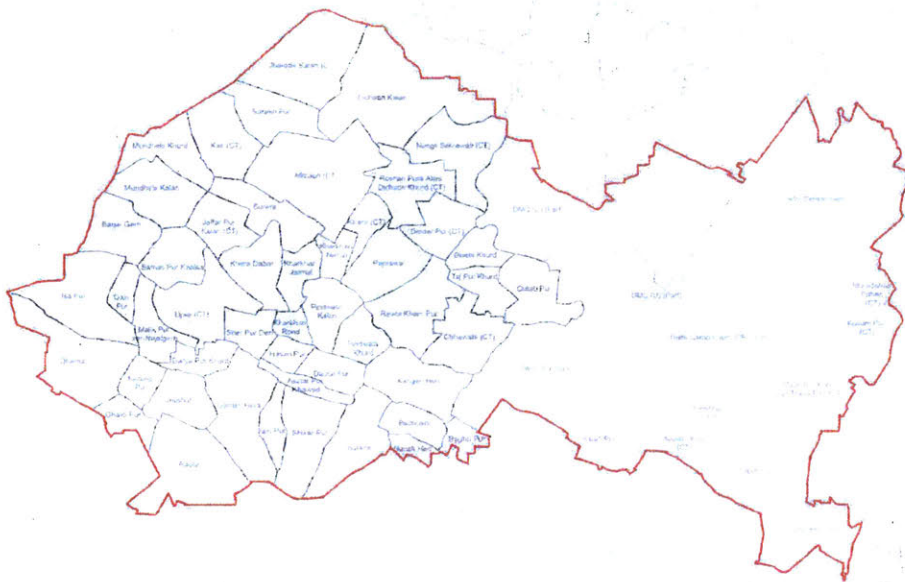


Some families have migrated to the villages in Delhi, such as Chhawla, for its proximity to the urban center and better opportunities for work and education.

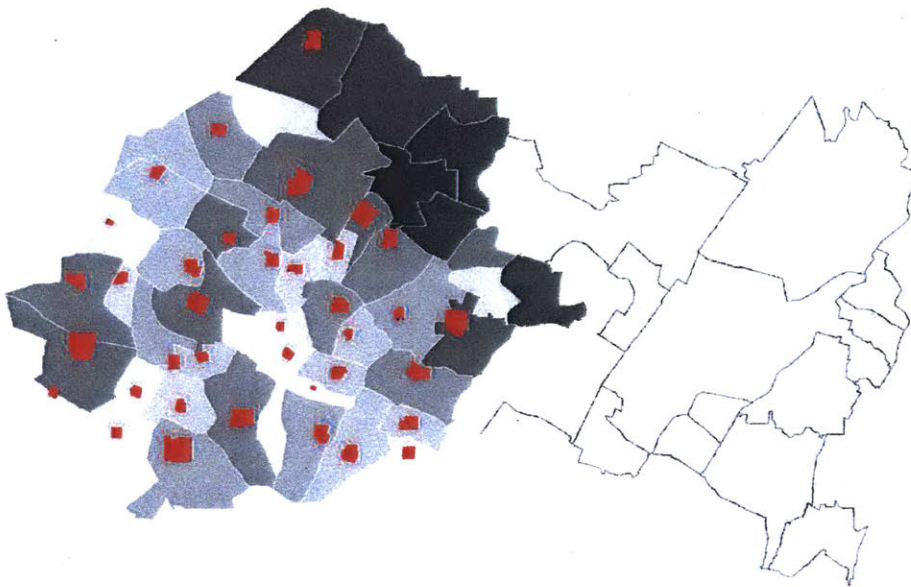


Most farmers, due to lack of resources and governance support in the face of urbanization, 80% of rural lands are already sold to developers.



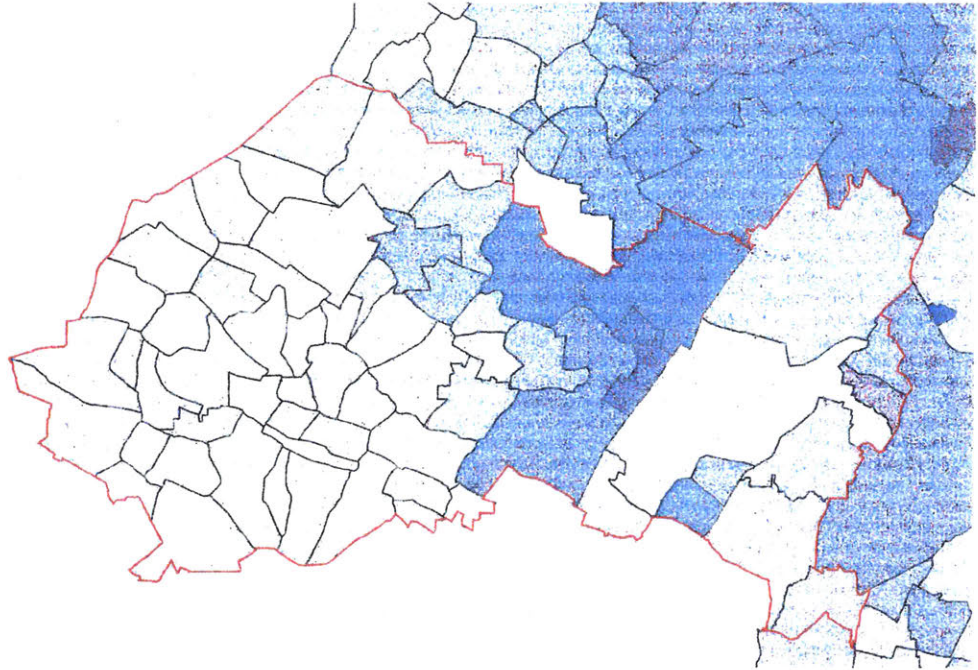


South West District Spatial Analysis: Topology

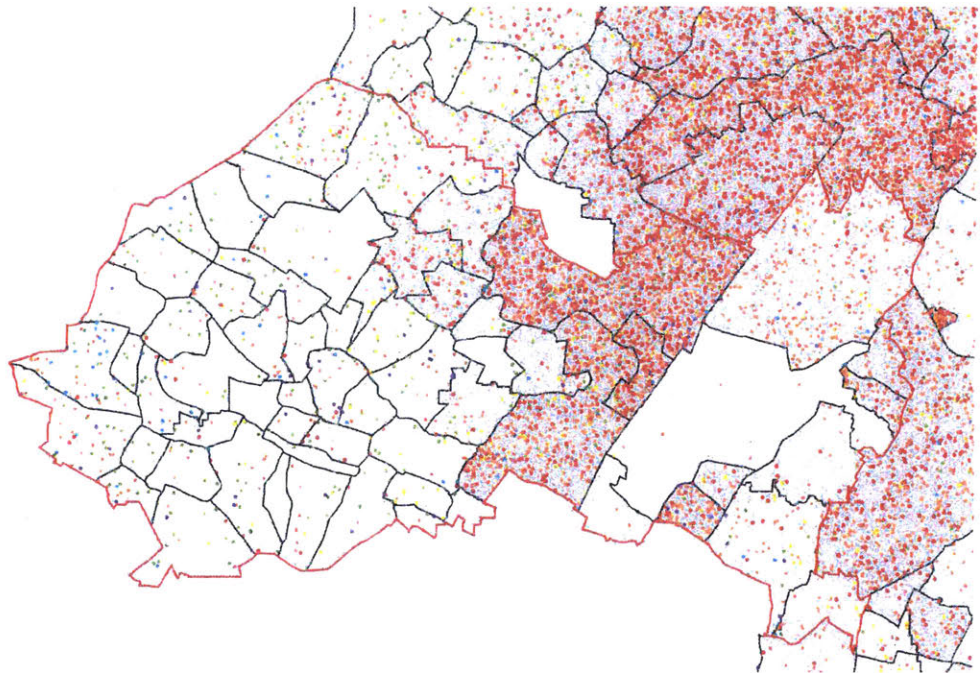


South West District Spatial Analysis: Settlements and Density

Composed of fifty villages, the South West District.

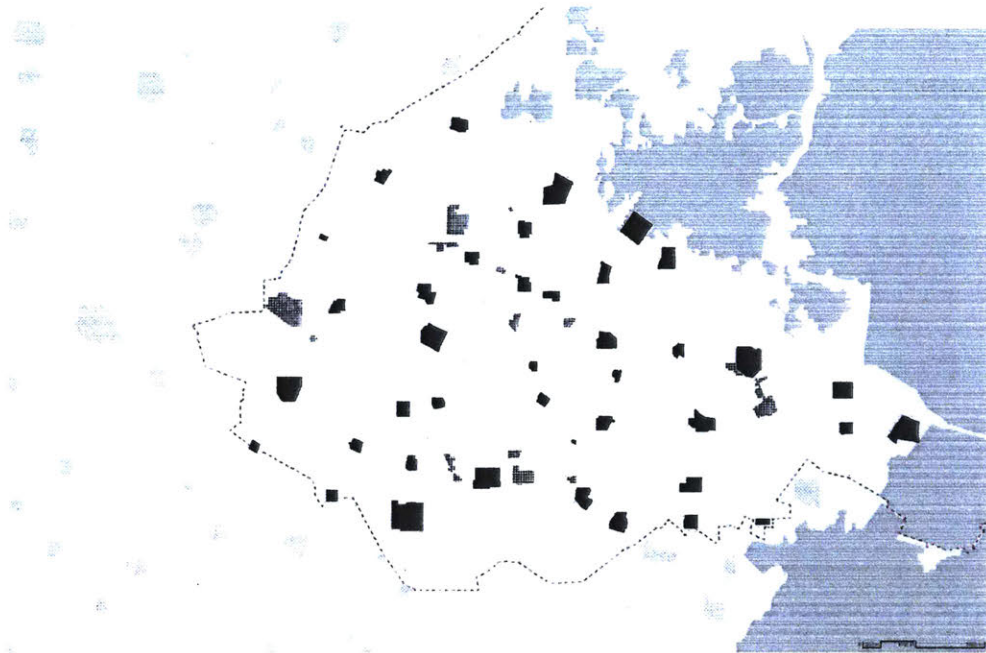


South West District Spatial Analysis: Population Diversity

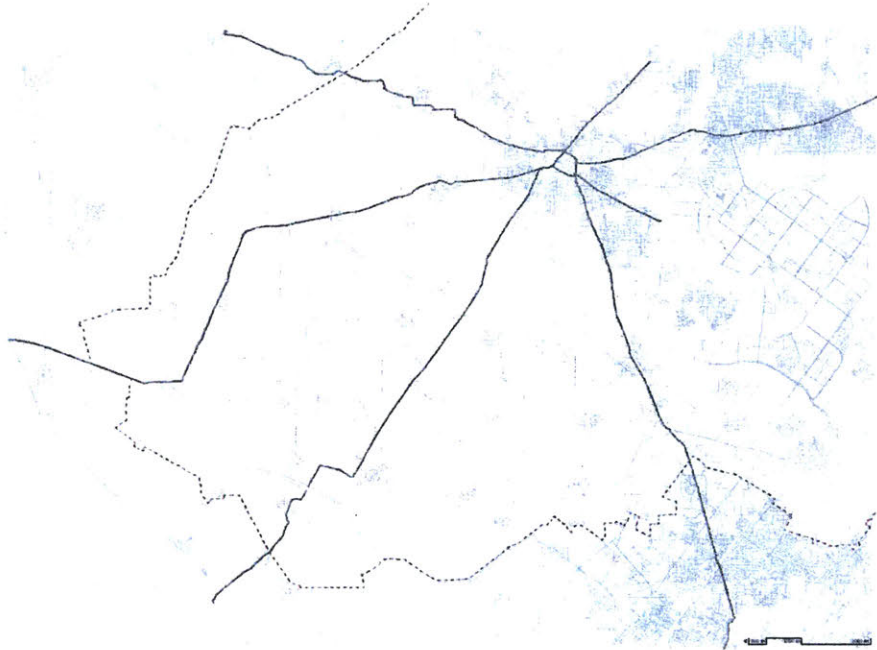


South West District Spatial Analysis: Occupation Diversity

The agricultural land in the rural periphery consists of about 30 per cent of the total land in Delhi. This land cover helps permeate water and increases carbon capture and generates food for rural and urban Delhi. Most of these ecological values are eliminated in the new urban developments.



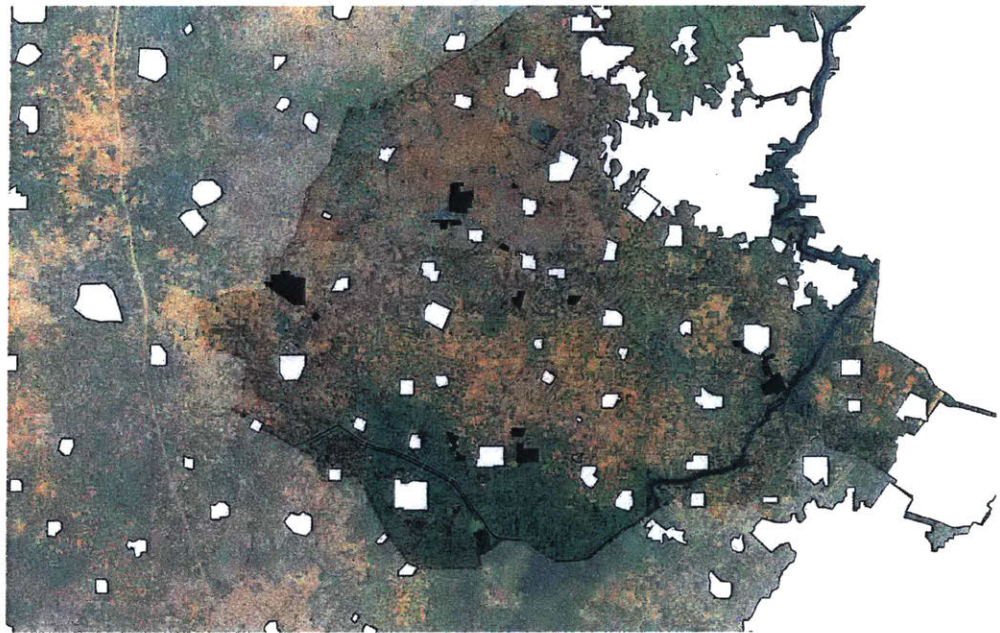
Existing Village Settlements in Rural South West District



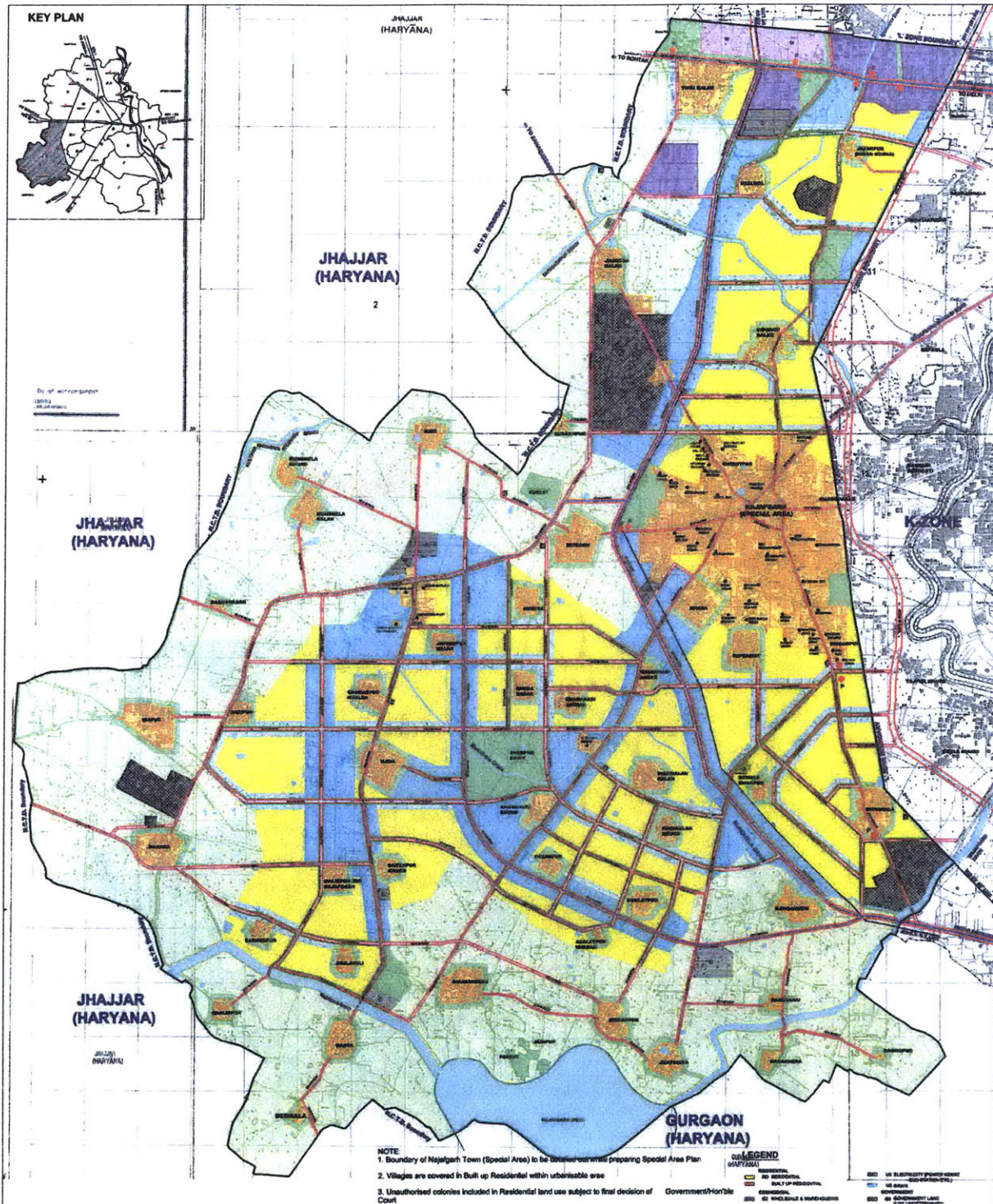
Mobility Networks in Rural South West District



Water Networks in Rural South West District



Agricultural Land, Forests and Fallow Land in Rural South West District



Zonal Plan (Delhi Development Agency)



Network Territory in the South West District

CHAPTER 5

Village Urbanism:
Design and Planning Propositions

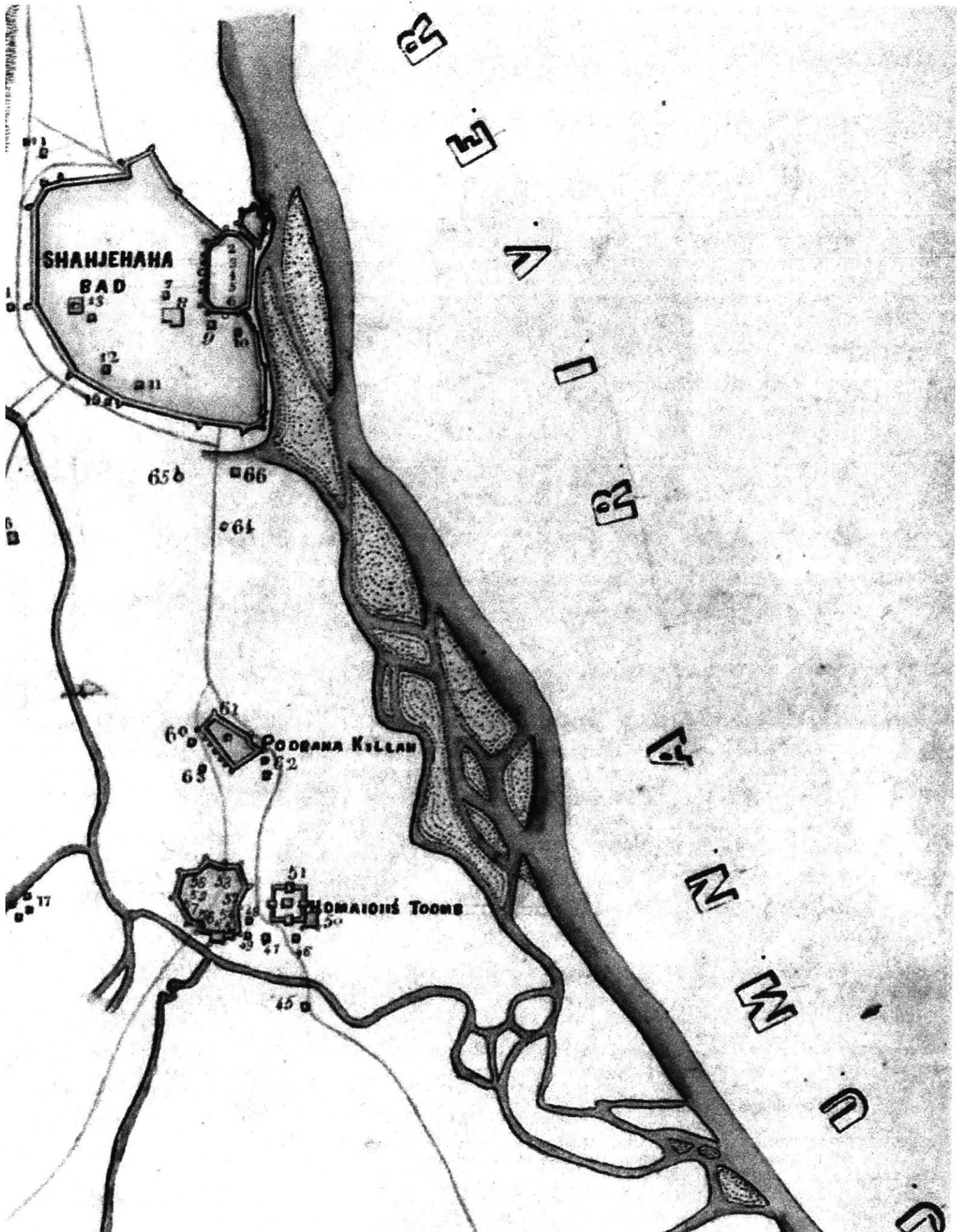


Tomb of Munsoor Ali...
Khan

18

N.B THE NUMBERS REFER TO THE BODY OF THE
GAZETTEER UNDER THIS HEAD

19
20





District Village Collectives

Village Urbanism: Design and Planning Propositions

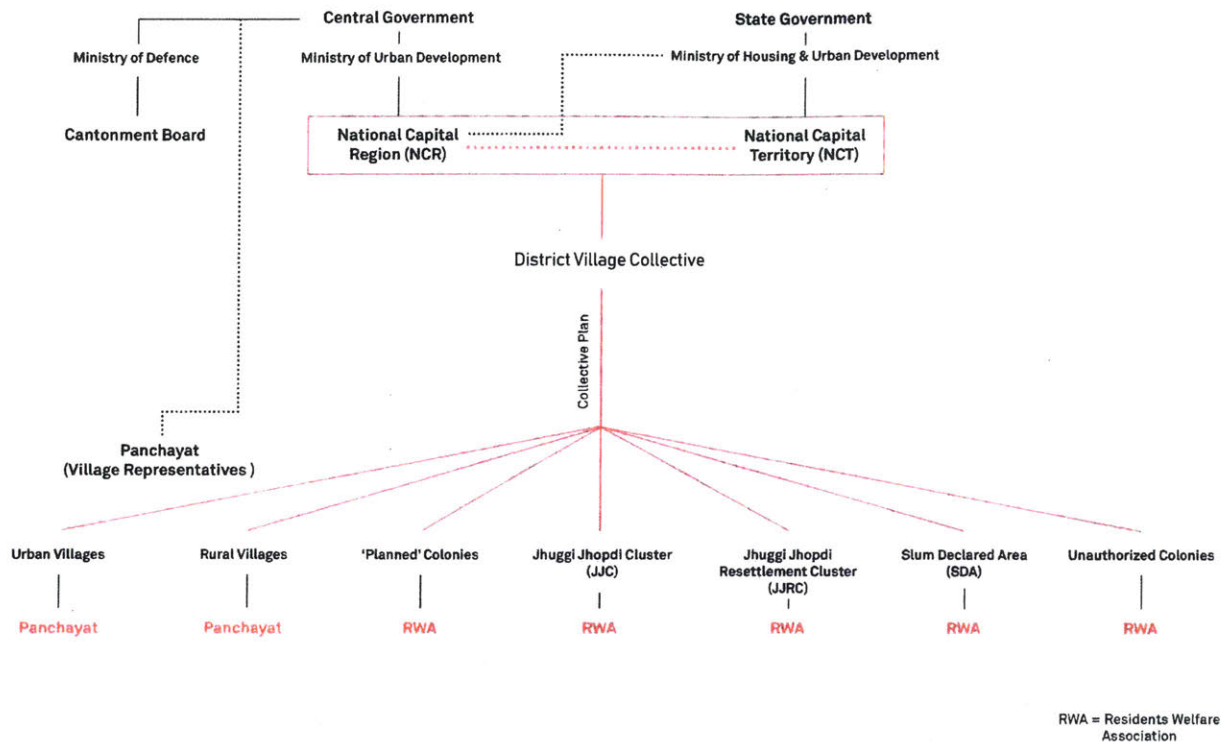
Village Urbanism

As an alternative to the centralized, city-centered mode of urbanization for the rural belt, the thesis proposes an alternative framework of the network-territory that allows for urban exchanges while maintaining and transforming rural landscapes. This model of planning and design stems from the villages themselves, organized around the idea of village collectives that integrate social, ecological and economic values in the new developments of the countryside. Approaching the project at multiple scales, these village collectives would operate at the scale of districts in Delhi that plan and accommodate for new growth and sustain life forms of the village as well.

Housing: An Architectural Interface

The need for housing in Delhi is not indicative of a simple lack in the housing stock, but points to other problems that affect the city. The need to accommodate a large floating population in tourist areas, or the lack of economic opportunities in the areas from which people want to migrate to the city, or the need for housing to accommodate for new ways of living.

Housing that can have collective management of resources: In the global South, current issues regarding the pressure on housing stock is exacerbated through rapid development and construction. To account for these pressures, one needs new methods that account for these temporal pressures and allow

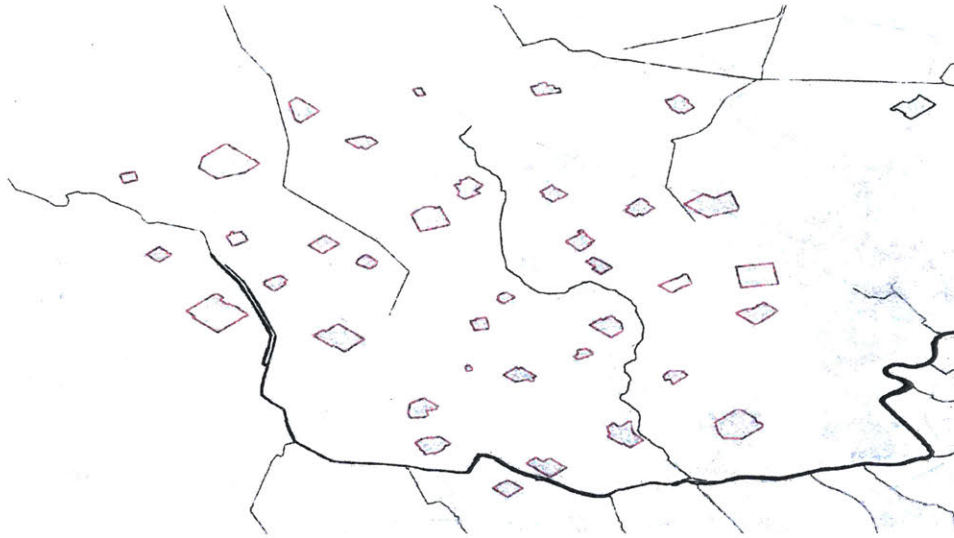


Village Collective Structure

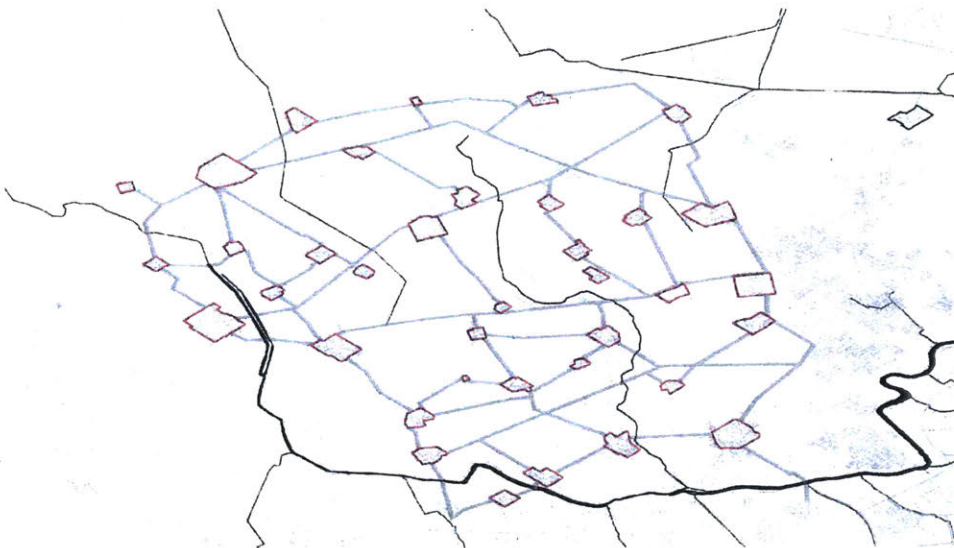
for incremental addition or removal and which allows for the residents to have agency in maintaining and managing the resources between them. Opportunity to grow, improve and for including participation in the process.

Housing as a powerful architectural tool, in as much as it defines possible relations between people and between people and territory; In the creation of housing, one is not only establishing a space for shelter, but defining the interaction of the person, her family and her interaction with the community, her participation in the commons and her relationship to the broader environment. In providing a spatial expression to these relations, housing is able to create an intimate relationship with the territory, and has the power to contribute to defining the urban form of the settlement.

In the model of urbanization that prioritizes exchange value of land over others, developers prefer housing typologies that are built for the higher income class, creating a gated residential enclave that is safe and secure within the walls of the establishment, but unsafe and unhealthy outside. This model of development, even though is financially favourable, is an exclusionary model of urbanization. The thesis proposes housing typologies that are inclusive and have a more interactive role in the creation of the urban form.

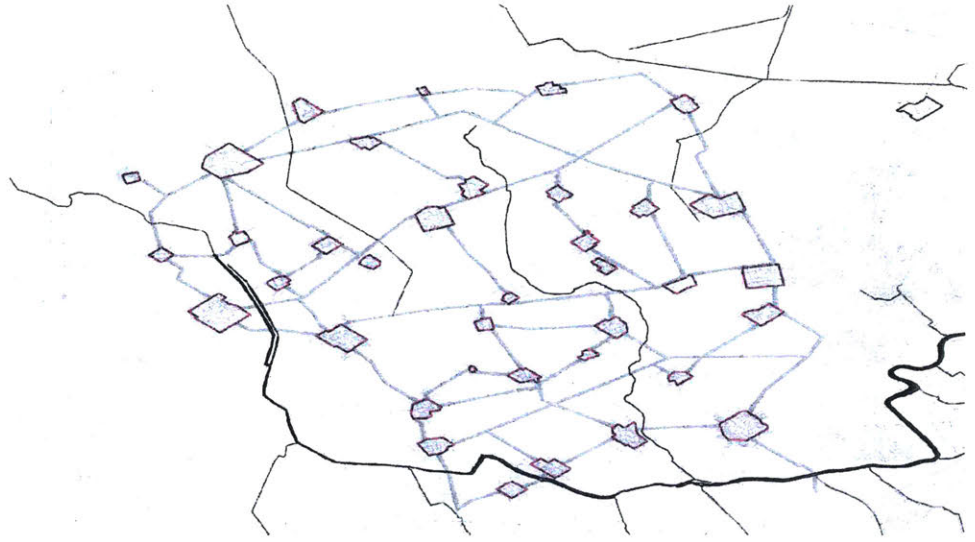


Current Scenario

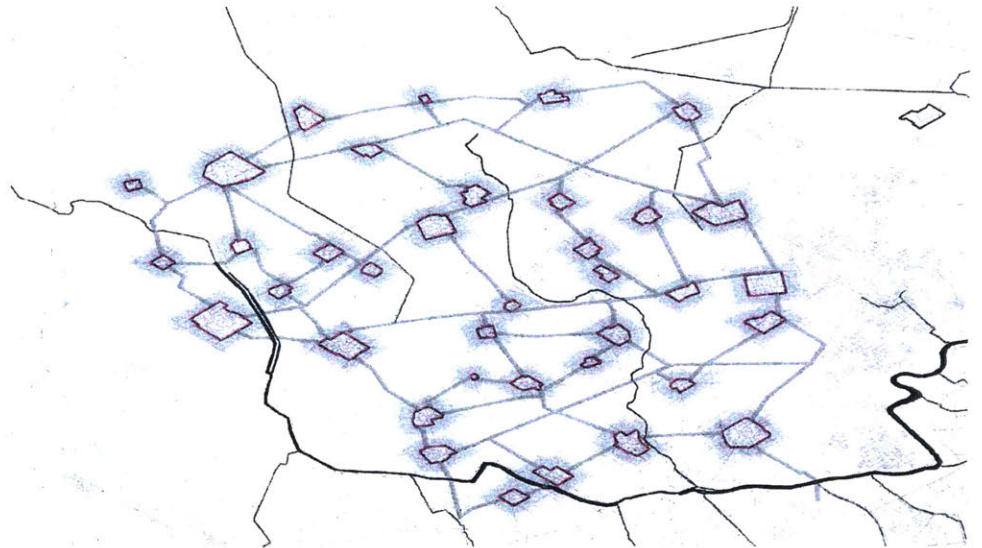


Growth Condition 1 (Networks)

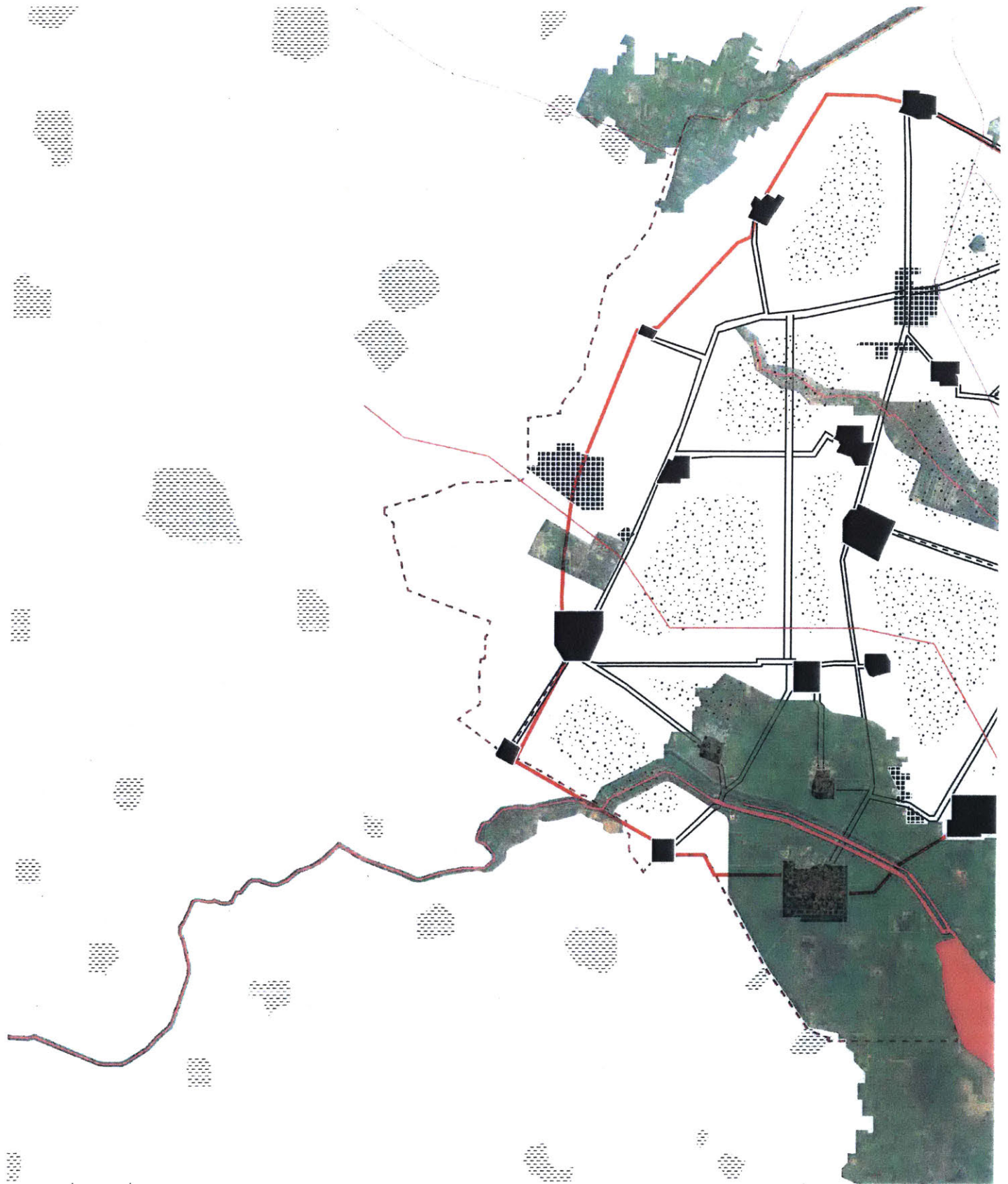
Scenarios for Growth in South West District



Growth Condition 2 (Villages and Networks)



Growth Condition 3 (Villages and Networks)





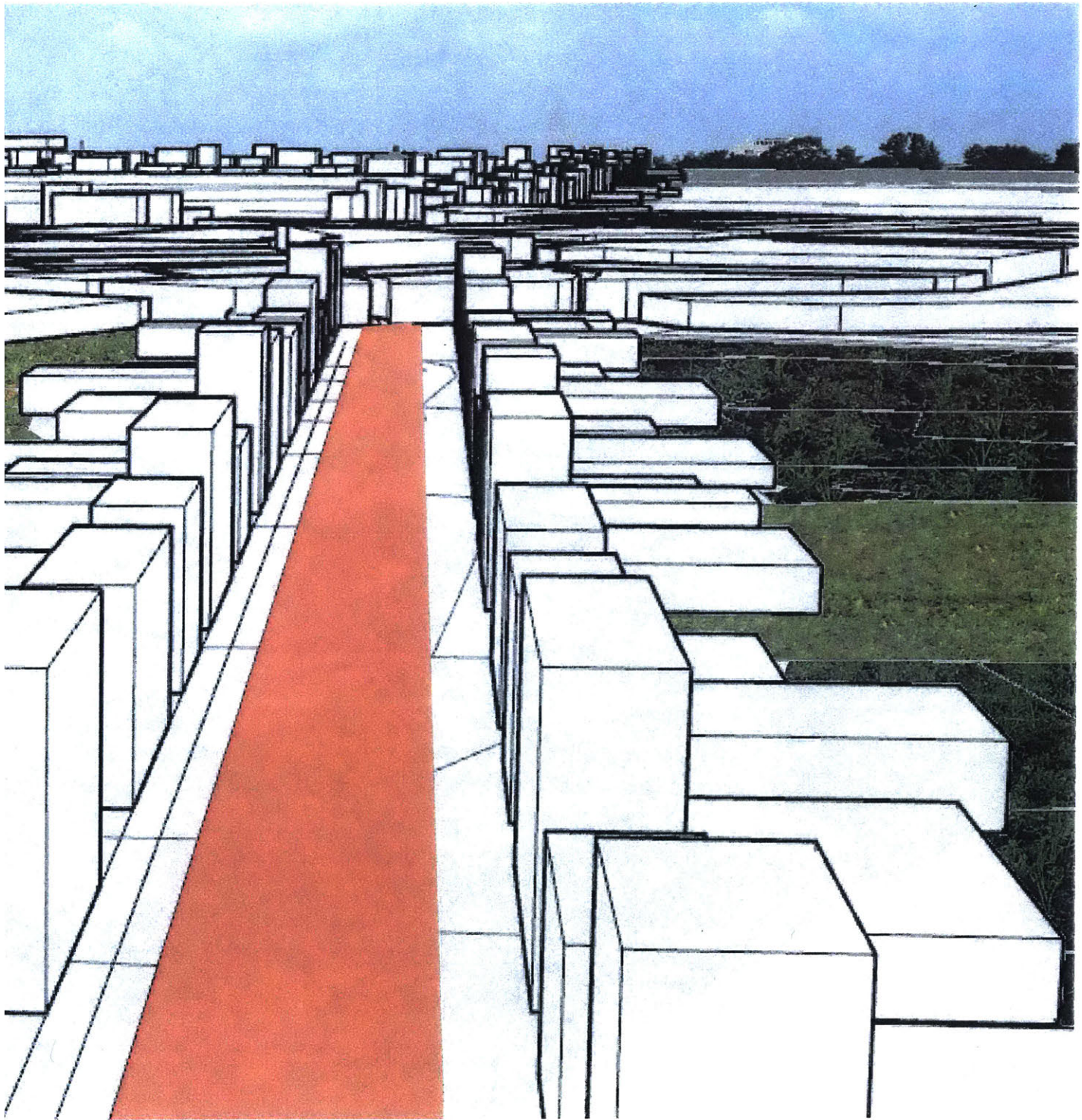


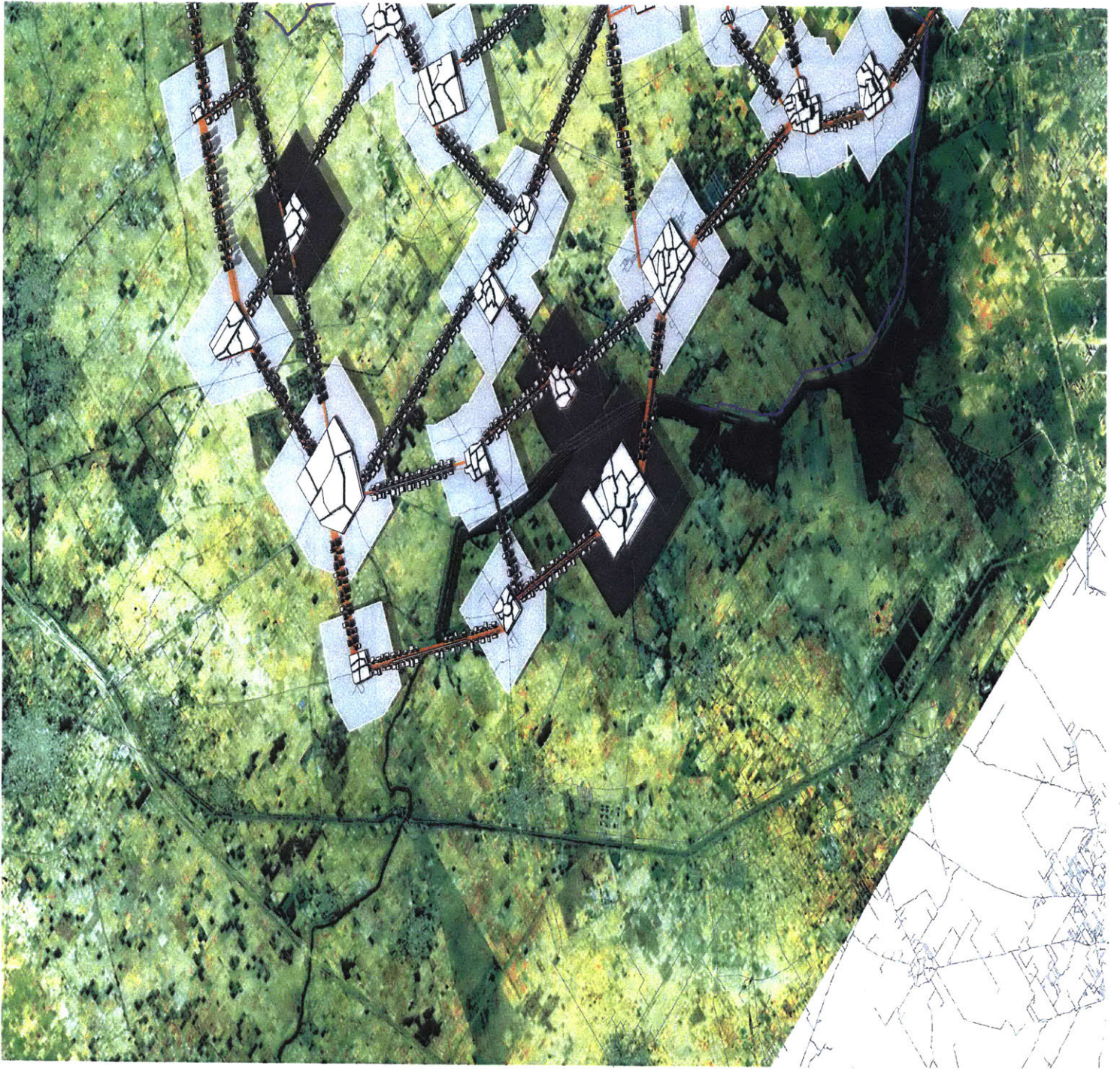
Agricultural Terrain Framed by Housing





Housing as a Threshold between the Rural Landscape and Urban Infrastructure







Conclusions

The present thesis is an attempt at addressing the notion of development and the kind of urbanization that it has led to in peri-urban areas in India. Villages in peri-urban areas of metropolitan areas find themselves in a predicament in which they can either choose to remain 'rural' and have no resources for growth, no funding for social, ecological and economic infrastructure development; or they can choose to be urbanized. These urban areas are often poorly planned, their infrastructure development increasingly relinquished to private actors who are driven by profit-making and pay little heed to collective amenities and infrastructures. The dominance of financial/exchange values of land over social, ecological and functional values in these development policies have played a big role in the creation of new urban landscapes that are marked by homogeneity and inequality.

The thesis offers solutions in the form of a framework and model for growth that is based on village urbanism. The following recommendations emerge in response to the issues associated with urbanization in Delhi:

1. Decentralization of governance for a village-based urbanism: In cities like Delhi, political power is centralized but fragmented into discordant organizations, so that there is a lack of an integrated vision for development. I offer a solution where villages can organize and collectively take ownership of their growth and development. The thesis offers a framework for this organization and scale at which the villages would coordinate. This would require community-based efforts

to organize and plan, but also initiatives from the state and central government to promote collective village planning. Measures to allow for greater decentralization of planning and development control of land to district level village collectives would have to be introduced. Some of these measures would include reinstating village level governments (Panchayat), enabling a process and framework for district scale village collectives to operate, and providing them with autonomy to collectively own and manage their resources.

2. Giving greater agency to designers to engage in processes of urbanization. Through greater agency, designers can be the facilitators of collective planning, acting as mediators between the various actors including villagers and government agencies. This autonomy should allow for greater coordination across sectors at the district scale. As facilitators, designers will have the authority to focus on social, ecological and functional value in the creation of individual and collective realms and its interface.

3. The spatial model of network-territory. Delhi has been a site to understand the processes and patterns of urbanization taking place in India and similar contexts globally, the methods of study, lessons and model of village urbanism can be applied to various contexts. Although the political forces at play have played a large part in creating an urban situation unique to the city, the methods of research and analysis, multi-scalar approach to design and the conceptual model of the network-territory are ideas that can be translated to diverse sites.

4. Urbanism representing people and their way of life:

Development narratives often exclude villagers and other residents who are not involved and consulted in planning and designing their lands and territories. Through this research, I have tried to fill these gaps by adding personal stories and experiences of various people to the spatial and temporal analysis of the impact of urbanization and hope to reflect these voices and visions in shaping new growth. And hence, the thesis mandate to create a collective vision for an urbanism that stems from villages is borne on the concept of inclusivity and plurality.

Through the thesis, I have attempted to define a design issue that illustrates a contemporary issue. Although, I have attempted to be comprehensive in considering all factors that would affect urbanization, the study should not be treated as scientific material. Rather, it hopes to explain the process of urbanization and a new vision of village urbanism through the designer's perspective. Hence, the text leverages nature and character of urbanism over the precision offered through scientific research.

Through the research and proposal, I have tried to show an alternative vision for rural contexts by offering a spatial model and framework of urbanism. The sincere hope is that the thesis is able to generate a discussion and show that alternatives to the existing practices and forms of urbanization are possible.

Appendix: Lexicon of Settlements

This lexicon of settlements covers the different types of settlements in Delhi and other parts of India. Through the exploration of the meaning and roots of these signifiers for diverse types of settlements, one understands the different relationships: socio-spatial, religious, economic, administrative, that these settlements have with their territory.

Gaav: From Hindi; village

Gram: From Sanskrit; village

Dehat: From Hindi; village, rustic

Mouja: From Urdu; A type of administrative district, corresponding to a specific land area within which there may be one or more settlements

Shehar: From Persian; City

Nagar: From Hindi; a town, a city, an area in a city, or a suburb

Pur: From Hindi; A large village or town

Kheda: From Hindi; Small village or part of settlement, farmer's settlements

Ilaaka: From Urdu; Area or region

Kshetra: From Sanskrit; field, area, tract of land. Kshetra can refer to a pilgrimage place or location.

Kasba: From Arabic. Central part of a town or citadel

Muhalla: From Urdu; Neighborhood

Basti: From Hindi; basna meaning settlement; Informal settlements

Abaadi: From Hindi; Agricultural settlements in various population clusters

Colony: From English; Residential gated communities settled post-independence

Serai: From Urdu; Settlements around travel lodge, usually on prominent mercantile routes

Pradesh: From Sanskrit; Sub-region or Sub-Country

Bhukhand: From Sanskrit; Part of earth

Bhumandal: From Sanskrit; Earth or network of geographical units

Rajya: From Sanskrit: Realm, Kingdom, State, Land

Qila: Qila from Urdu; Gadh from Hindi; Political, administrative and military center of the territory

Ganj: From Urdu; Market place neighborhood

Kalan/Khurd: From Urdu; Administrative designations used in India and Pakistan to indicate the smaller (Khurd) and larger (Kalan) segments of a town, village or settlement. They are usually added after place names

(From: Bahri, Hardev. Learners' Hindi-English dictionary; Siksarathi Hindi Angrejhi sabdakosa. Delhi : Rajapala, 1989; and; Dasa, Syamasundara, 1875-1945. Hindi sabdasagara. Navina samskarana. 2nd ed. Kasi : Nagari Pracarini Sabha, 1965-1975)

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Web. Last accessed: May 11, 2018.

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pg 12: Image 1: Advertized Image for Delhi Gate
BY DELHI INFRATECH LTD. L Zone, Dwarka, New Delhi. <https://housing.com/in/buy/projects/page/34812-delhi-gate-by-delhi-infratech-ltd-in-l-zone>;
Web. Last accessed: May 11, 2018.

pg 12: Arthur Crestani, Dream home? India's privatised city - in pictures.
https://www.theguardian.com/cities/gallery/2018/mar/15/bad-city-dreams-arthur-crestani-gurgaon-in-pictures?CMP=share_btn_fb
Web. Last accessed: May 11, 2018.

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pg 16: Mazhar Ali Khan, November 25, 1846.
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Web. Last accessed: May 11, 2018.

pg 18: Image 1: See page for author [Public domain], via Wikimedia Commons
https://commons.wikimedia.org/wiki/File:Mohandas_K._Gandhi,_portrait.jpg
Web. Last accessed: May 11, 2018.

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Web. Last accessed: May 11, 2018.

pg 18: Image 3

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Web. Last accessed: May 11, 2018.

pg 20: World Population Density

<http://luminocity3d.org/WorldPopDen/#3/12.00/10.00>
Web. Last accessed: May 11, 2018.

Chapter 2:

pg 43: Delhi: Land pooling to pave way for 24 lakh new houses in Dwarka-like sub-cities

<https://www.hindustantimes.com/delhi-news/delhi-land-pooling-to-pave-way-for-24-lakh-new-houses-in-dwarka-like-sub-cities/story-UvpkdyVKm7Ldj2rIFg8YuN.html>
Web. Last accessed: May 11, 2018.

Chapter 3:

pg 54-55: NASA Earth Observatory images by Joshua Stevens, using Suomi NPP VIIRS data from Miguel Román, NASA's Goddard Space Flight Center.

<https://www.nasa.gov/feature/goddard/2017/new-night-lights-maps-open-up-possible-real-time-applications>
Web. Last accessed: May 11, 2018.

Chapter 4:

pg 76-77: By A. Savin (Wikimedia

Commons · WikiPhotoSpace) [FAL], from Wikimedia Commons.
21 March, 2016.

https://commons.wikimedia.org/wiki/File:Delhi_aerial_

photo_03-2016_img2.jpg

Web. Last accessed: May 11, 2018.

pg 94: Delhi Development Authority. Draft Zonal Development Plan Planning Zone- 'L' (West Delhi-III). 2007. pg, 47

Chapter 5:

pg 96: From Guerrieri, Pilan Maria. Maps of Delhi. Delhi: Niyogi Books, 2017; pg 2.

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