

# Urbanization, Industrialization and Spatial Development of National Capital Region (Delhi-NCR)

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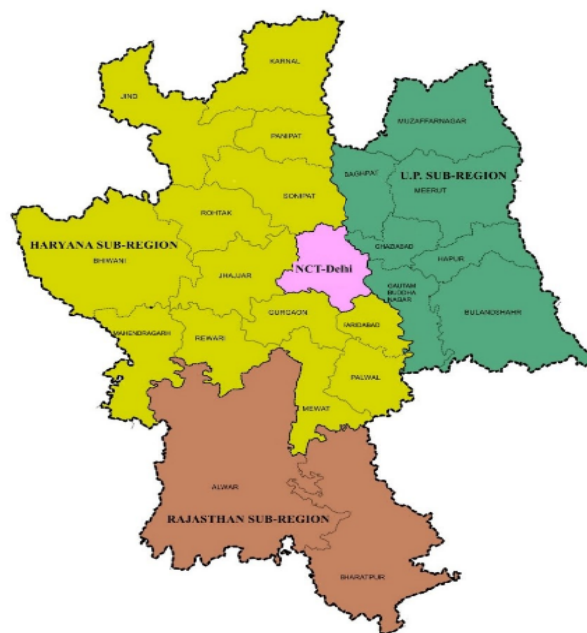
**Abstract**—Time and again the need was felt to plan Delhi in the regional context under a suitable legislation which would control and regulate development in the region and finally Parliament enacted the National Capital Region Planning Board Act in 1985 with the concurrence of the constituent States to provide for the constitution of a Planning Board for the preparation of a plan for the development of the National Capital Region and for coordinating and monitoring the implementation of such plan and for evolving harmonised policies for the control of land uses and development of infrastructure in the National Capital Region so as to avoid any haphazard development of that Region and for matters connected therewith or incidental thereto. It begins with a labor market perspective and emphasizes the importance of agglomeration economies, both static and dynamic. It then argues that more productive jobs in cities do not exist in a void and underscores the importance of job and firm dynamics. In turn, these dynamics are shaped by the broader characteristics of urban systems. A number of conclusions are drawn. First, agglomeration effects are quantitatively important and pervasive. Second, the productive advantage of large cities is constantly eroded and must be sustained by new job creation and innovation. Third, this process of creative destruction in cities, which is fundamental for aggregate growth, is determined in part by the characteristics of urban systems and broader institutional features.

## 1. INTRODUCTION

The National Capital Region (NCR) and its planning board were created under the National Capital Region Planning Board Act of 1985. That 1985 Act defined the NCR as being the whole of NCT of Delhi; the Haryana districts of Gurgaon, Faridabad (then including Palwal), Rohtak (then including Jhajjar), Sonapat, and the Rewari and Panipat tehsils then in Mahendragarh; and the Uttar Pradesh districts of Bulandshahr, Meerut and Ghaziabad (including the Hapur Tehsil), and some of the Rajasthan district of Alwar. The 1985 boundary of the NCR covered an area of 34,144 km<sup>2</sup>. In July 2013, NCR was expanded to include three more districts, Bhiwani, and Mahendragarh in the state of Haryana, as well as Bharatpur in the state of Rajasthan. This brought the number of districts in NCR to 19 (outside Delhi NCT), with the total NCR area increasing 34% to 45,887 km<sup>2</sup>. Subsequently, Charkhi Dadri

district was separated from Bhiwani district in 2016. On 9 June 2015 the Government of India approved the inclusion of three more districts in NCR like Jind and Karnal in Haryana and Muzaffarnagar in U.P. There are now a total of 22 districts (outside Delhi NCT) within NCR, covering a total area of 50,566 km<sup>2</sup>.

On 9 January 2018 the government of Uttar Pradesh formally proposed the extension of the NCR to cover Aligarh, Bijnor, Hathras and Mathura. It is also pushing to have the district of Agra included in the NCR. Punjab is also forcing to have Patiala, Dera Bassi and Mohali included in the NCR. Outskirts of Rajasthan like Bhadra are also included in the Future Extension plans. Prior to the creation of the NCR, an area described as the Delhi Metropolitan Area (DMA) was described in the 1962 Master Plan for Delhi.



Map Source: NCR Planning Board Website

That plan defined the DMA as comprising the Union Territory of Delhi and the ring towns of Ghaziabad, Faridabad, Ballabgarh, Gurgaon, Bahadurgarh and Loni, also certain rural areas, which had a population of the somewhat less than 2.1 million in 1951. The following "Master Plan for Delhi", approved in August 1990, added Noida, Bahadurgarh and the then-proposed township of Kundli to the DMA, which consequently covered an area of 3,182 km<sup>2</sup>.

## 2. POPULATION & URBANIZATION

The NCT-Delhi has the largest share of population (36.4%) followed by Uttar Pradesh sub-region (31.7%) and Haryana sub-region (24.0%). Rajasthan sub-region has the lowest share of 8.0%. In 2011, NCR had a total population of 460.5 Lakh. Since 1981, share of population in Haryana and Rajasthan sub-regions has almost remained constant; however it increased from 31.4% in 1981 to 36.4% in 2011 in NCT-Delhi and in U.P sub-region it declined from 35% to 31.6% during the same period.

Sub-region	Population				Share of Population (%)			
	1981	1991	2001	2011	1981	1991	2001	2011
NCT-Delhi	62,20,406	94,20,644	1,38,50,507	1,67,53,235	31.4	34.4	37.3	36.4
Haryana	49,38,541	66,43,604	86,87,050	1,10,37,548	24.8	24.3	23.4	24.0
Rajasthan	17,55,575	22,96,580	29,92,592	36,71,999	8.8	8.4	8.1	8.0
U.P.	69,68,646	90,01,704	1,15,70,117	1,45,84,234	35.0	32.9	31.2	31.6
NCR	1,98,83,168	2,73,62,532	3,71,00,266	4,60,49,032	100.0	100.0	100.0	100.0

Source: Census of India-1981, 1991, 2001, 2011\* (Provisional)

### 2.1 Population Growth Rate

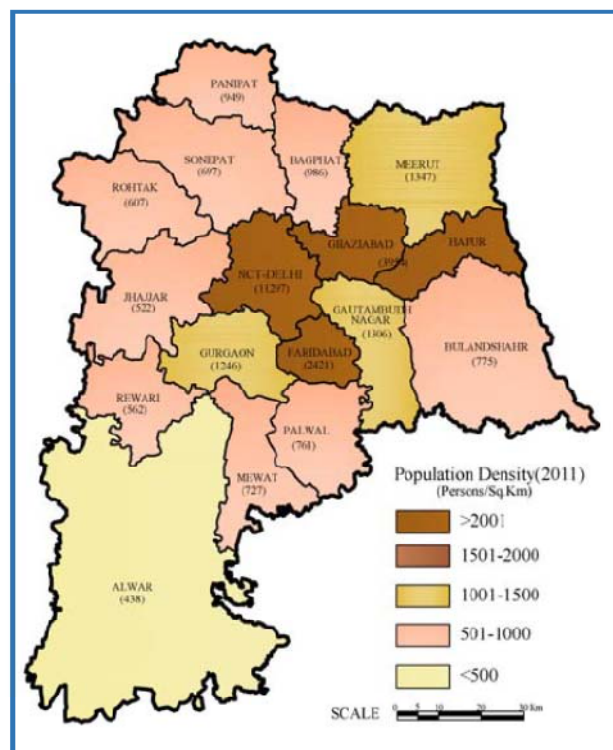
The growth rate of population in NCR has declined from 37.6% in 1981-91 to 24.1% in 2001-11. During the last 3 decades, trends show that the growth rate of population in all the sub-regions has been declining.

Although the growth rate is declining, there has been a substantial increase in absolute numbers in all the sub-regions. During the last decade (2001-11) as much as 29 Lakh persons were added in Delhi's population. Uttar Pradesh and Haryana sub-region added 30.1 Lakh and 23.5 Lakh population respectively during the same period. Rajasthan sub-region also added 6.8 Lakh persons. Share of urban population in NCR has however been rising from 50.2% in 1991 to 62.5% in 2011 and the rural population declined in the same proportion.

### 2.2 Population Density

Density of population in NCR has more than doubled from 657 Persons per sq.km in 1981 to 1349 persons per sq.km in 2011 in the last three decades. The density of population in rest of NCR excluding NCT Delhi is 912 persons per sq km. Density of population is 1349 persons per sq km in NCR as against the All India average of 382 persons per sq km in 2011.

### Population Density Map: NCR



Source: Census of India, 2011

## 3. NCR PLANNING

The first exercise in planned development was done through the Town Planning Organisation (TPO), which prepared an Interim General Plan (IGP) in 1956 for Greater Delhi. The study reported the emergence of the private developers for residential developments just outside Delhi State boundaries, beyond the control of the D.D.P.A. Such developments just at the outer periphery of Delhi State triggered the need for planning Delhi in a regional context and stated that '*serious consideration should be given for a planned decentralisation to outer areas and even outside the Delhi region*'. In this context, the NCR was then given specific physical contours in the early 1970s when its boundaries were defined in geographic terms encompassing a contiguous area of over 30,000 sq. km. An Act of Parliament in 1985 brought into being the NCR Planning Board, an autonomous body in which the main implementing agencies are the Central Government, the three participating State Governments of Haryana, Rajasthan and Uttar Pradesh, and the Government of National Capital Territory of Delhi.

### 3.1 Regional Plan 2001 (RP 2001)

The first regional plan, published in 1989 by the NCRPB, is a blueprint of various policy imperatives and programmes. The plan mandated to deflect population from Delhi following a multi-nodal regional growth structure to the identified Regional Centres or 'Priority Towns' in the NCR by the year 2001. The various plans for the NCR --- (Interim Development Plan (1986), Regional Plan (1989) and the related plans such as Sub- regional Plans; Uttar Pradesh (1992), Rajasthan (1994) and Functional Plans for Transport (1995), Power (1996), Telecommunication (1997), and Industry (1998) were exercises that were considered most expedient to achieve this common objective. This would be done through a set of policy initiatives, planning for land uses and development of core regional infrastructure. However, despite this, population in Delhi continued to grow faster than anticipated. The Regional Plan projected a total population growth of 32.5 million for the region and 13.2 million for Delhi UT. To achieve this, the Plan proposed an addition of 45,291 hectares to the urbanizable area. During this period, however the total built-up area increased more than 3 times this allocation.

### 3.2 Draft Regional Plan 2021 (RP-2021)

In view of the above, the NCRPB prepared the Regional Plan 2021 which was notified in 2005 and was revised in 2013. The RP 2021 aims to promote growth and balanced development for the whole region by developing an appropriate economic base for future growth in the identified major settlements, Metro Centres and Regional Centres, in order to absorb the economic development impulse of Delhi. Additionally, the plan makes proposals for developing an efficient transport network, developing physical infrastructure, rationalizing the land use pattern, and improving the environment and quality of life within the region. The thrust areas for RP 2021 include:

- Laying down of Land Uses at the Regional level in terms of a harmonious pattern emerging from a careful examination of natural features including susceptibility to natural disasters and socio-economic activities.
- Development of Metro and Regional Centres as powerful growth nodes to attract major activities.
- Provision of regional transport linkages and Mass Commuter System.
- Construction of peripheral expressways and orbital rail corridor around Delhi.
- Development of core urban infrastructure (transport, power, water supply, sewerage, drainage) in NCR towns.
- Development of the region's economy through Model Industrial Estates, Special Economic Zones outside NCT-Delhi.

The plan proposes four policy zones to achieve sustainable development: (1) the NCT Delhi, wherein no new activity (formal and informal) resulting in job creation can be located within the NCT, (2) the Central NCR (earlier called Delhi Metropolitan Area) proposed to develop to its fullest potential - to enable this, plans by respective states are proposed to be made by the CNCR Planning Group, (3) The Highway Corridor Zone, marking an area of 1 km along the highways with restricted activities and land uses, and (4) the rest of the NCR, which is proposed to continue providing infrastructure and amenities to the various urban and rural settlements specifically for the identified Metro Centres or Regional Centres.

The Regional Plan 2021, in its analysis, states that the NCR experienced an increase of 166% in the built-up area between 1986 and 1999. More than 90% of this was due to large scale conversion of agricultural land caused by industrial and urban development in the peripheries of Delhi. Substantial urbanisable area, almost 61% of what was proposed, remained unbuilt in 1999, highlighting the comparatively low level of planned development in the NCR. On the other hand, the areas proposed to be kept as green belts, immediately outside the Delhi UA, have transformed rapidly after 1986 with 60% of the green belt demarcated as per RP 2001 having been built upon.

## 4. INDUSTRIALIZATION

### 4.1 Economic Growth

NCR is a major economic hub for the whole of North India and is rapidly transforming into an industrial base due to changes in policy, privatisation of public sector undertakings (PSUs), down-sizing of government shares and elimination of subsidies and tax incentives for industries. A number of existing and proposed industrial areas (especially as part of the proposed investment regions of the Delhi Mumbai Industrial Corridor) are expected to have a significant impact on the economy of NCR, trends indicate that the tertiary sector, particularly value-added services, is fast emerging as an important source of employment in the NCR. The tertiary sector contribution to GDP (67%) ranks the highest followed by secondary (25%) and primary (8%) sectors for the year. While Delhi is the largest contributor to GDP in the NCR, the growth rate of GDP is the fastest in the Haryana sub-region amongst the states. Delhi has become the main centre for various services, Haryana sub-region is a mix of industries and service sector (with a fast growth of IT / ITES in Gurgaon), while Uttar Pradesh and Rajasthan subregions are dominated by agriculture. In terms of districts, Bulandshahr has the highest portion of its total working population engaged in agricultural, livestock and forestry activities of. Gurgaon has the largest part of its total working population in the tertiary sector; Faridabad in manufacturing; and Alwar in the cultivation sector.

## 4.2 Industrial Potential

Rural infrastructure in the NCR, in terms of market yards, and cold storage has fallen significantly short of demand. In 2001, the Haryana and UP sub-regions had around 43% of their total workforce was involved in the primary sector. Yet, strikingly, Haryana has a very high share of regulated markets and yards as compared to UP. Since this is extensively funded by state governments, it has resulted in an uneven distribution of agricultural infrastructure such as regulated markets, yards and cold storages. In addition, the lack of regulation and the presence of powerful market forces in the Small Scale Industry (SSI) and micro industrial sector has led to the rise of a laissez-faire situation thereby leading to mushrooming of small industries especially in the unorganised sector with a high concentration in NCT Delhi itself. The approximate number of people employed in this sector is around 10 lakhs. Two aspects are evident from studies, one, the region has a significant agricultural economy with over half the population rural. And, two, while the existing industrial clusters employ approximately 15 lakh persons, while, the small, medium, micro and household industries employ around 5 lakh persons. The diverse economic environment has made NCR a potent region for investments and growth. Three investment regions for the Delhi Mumbai Industrial Corridor are in the initial stages of investment. All three are located to the south of NCT Delhi. Also, around 80 SEZ have been approved for the NCR mostly focusing on IT/ITES.

## 5. SPATIAL DEVELOPMENT

Within a proposed 6 tier settlement system, a number of strategically located million plus centres termed as Metro Centres are located in the CNCR region of the NCR, namely, Ghaziabad-Loni complex, Faridabad-Ballabgarh complex and Meerut. The RP 2001 as well as the RP 2021 have both proposed the development of Regional Centres in the rest of the NCR, as potential alternatives. While most of the population is concentrated within the CNCR, the expected population growth in these proposed Regional Centres has been lower than expected. The Regional Centres have been envisaged to host highly specialized secondary and tertiary sector activities for providing job opportunities, but presently, most of these towns are involved only in the manufacturing sectors (traditional and new). These centres are proposed to have a concentration of administrative and higher order service functions and are expected to attract investments along with favourable living and working environments for residents. Various cases of rapid growth induced by industrial location policies are evident in the NCR. Cases such as Dharuhera and Bhiwadi are distinct as within a span of 3 decades these rural settlements have been transformed into the most coveted destinations for industry and housing.

The study "Economic Profile of NCR" (2015) focuses on the existing economic scenario in the region especially for the Metro Cities and Regional Centres.<sup>16</sup> It highlights the need to

strengthen rural infrastructure to promote agro based industries, provide better infrastructure in industrial areas, address pollution and congestion in industrial towns, facilitate industrial revival of Meerut, develop appropriate infrastructure to boost traditional crafts in Ghaziabad, Khurja, etc., and, encourage enterprises in districts showing slow growth rates like Jhajjar, Alwar, Bulandshar and Sonapat. The Delhi-Mumbai Industrial Corridor (DMIC) has identified three investment regions to boost the manufacturing sector in terms of industrial output and employment, namely, Noida-Ghaziabad and a continuous 100 km stretch adjoining Gurgaon consisting of Manesar-Bawal and Bhiwadi-Neemrana. All of these regions lie to the south of the NCR. With large investments planned for this region, it is crucial to take a critical look at the role of other Regional Centres to truly achieve decentralisation.

However an examination of the population for each of the growth centres over the last three decades shows discrepancies. While some of the Regional Centres have experienced very rapid growth within a single decade, some have remained stagnated. This highlights the influence of factors not included in the regional planning strategies.

## 6. OBSERVATIONS

Based on the Urbanization pattern, industrial growth and spatial development process, following key observations comes out from the perspective of urban- regional approach in respect of NCR:- Most of the metropolitan regions of Mumbai, Kolkata, Bangalore and Chennai were set up in the 1970s with the objective of management of urban expansions and dispersal of activities to the region. While KMA covers an area of 1886 sq km and MMR 4384 sq km, the NCR with its 34,000 sq km area is a peculiarly different case. However, despite the regional strategies focusing on dispersal of population, most of the urban growth in the metropolitan cities has resulted in a sprawl and an expanding Urban Agglomerations. The NCR defined an even larger area to disperse the population growth from the core to its multi nodes. However, the ever expanding footprint and the complete urbanisation of the CNCR raises crucial questions the ability to abandon the strong core-periphery relationships for even larger regional boundaries and thus the adequacy of our regional planning strategies adopted.

While the urban and rural governance systems are distinct, the maximum urban - rural interactions occur at the peripheries, especially for the expanding urban areas, resulting in transformations that are at times urban in nature but are governed by rural bodies. These metropolitan regions thus depend on a technical institution to strategise and manage expansions in the region by setting forth a larger vision. In addition to drafting regional level plans, these authorities as Special Purpose Vehicles (SPVs) also direct the local governments to implement projects in accordance with the regional proposals. The Development Authority for Delhi was

set up in 1957 for managing growth for the NCT Delhi, which experienced a very high growth (90%) in the previous decade following the Partition. One of the urgent needs felt then was the dispersal of growth into a larger region to decongest the city further.

So the mandate of the NCRPB when it was set up was not focused on achieving regional balance and management, but aimed at decongesting Delhi by ensuring dispersal of urbanisation into the region. Both the regional plans employed a multi-nodal approach (well suited to regional balanced growth) considering Delhi as the core for future expansions. However, while the development of growth nodes were met with partial success, the further sprawl of the core continued into the region. It has been observed that the CNCR, adjoining the NCT Delhi, has grown at a much faster rate than the Regional Growth Centres proposed in the other parts of NCR due a number of reasons. Lack of sufficient transport connectivity and a unified authority for implementation of transport plans is considered to be a prime reason for this lopsided development. Instead, urbanisation has followed the continuous stretches along the highways providing adequate connectivity than the proposed growth centres. The case of the continuous urban stretch from Gurgaon to Bhiwadi along the Delhi-Jaipur Highway is an example. The population growth for two of the urban areas Dharuhera and Bhiwadi have increased from a mere 5000 and 1000 to 2 lakhs and 1 lakh in the past three decades. The forces of the real estate market also tend to append housing and commercial supply to the core in the region. Unfortunately, the Regional Plans take no stock of the existing conditions and the impacts of such sprawls.

Further, external policies interventions such as the three proposed investment regions of the DMIC have been identified to boost the manufacturing sector in terms of industrial output and employment in the NCR. These are, Manesar-Bawal and Bhiwadi-Neemrana that form a continuous 100 km stretch adjoining Gurgaon and the third, Noida-Ghaziabad. While all three areas are already highly industrialised, further induction of growth into these regions

and their proximity to the existing core city, challenges the core intent of the multinodal regional growth strategy. Inadequate water availability in the southern part of the NCR is another factor that impacts the tendency to sprawl. Whereas regions with adequate water and therefore predominant agricultural economy result in reluctance on the part of the farmers to sell their lands for urban expansions. The spatial strategies adopted for urban growth dispersal have weakly considered these context specific core-periphery relationships and the factors influencing them. The stress on functional plans rather than strategy plans, lack of unified authorities responsible for planning and implementing sector specific projects, inadequate interconnection developed between the different sectoral plans, a focus on developing and implementing projects rather than comprehensive visions, and, the inability to follow evidence based planning methods for propagating induced growth have proven to be the crucial reasons for the failure of the regional plans.

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