

## 1. INTRODUCTION

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### 1.1 National Capital Region (NCR) and its constituents

The National Capital Region (NCR) is an inter-state region comprising of the entire NCT of Delhi (Delhi sub-region), eight districts of Haryana (Haryana sub-region), one district of Rajasthan (Rajasthan sub-region) and five districts of Uttar Pradesh (Uttar Pradesh sub-region). It has a population of over 371 lakhs in 2001. The four Sub-regions i.e. NCT-Delhi, Haryana, Rajasthan and Uttar Pradesh accommodate 37.33%, 23.42%, 8.07% and 31.19% of NCR's population respectively.

### 1.2 Counter Magnet Areas in the context of NCR Plan

The National Capital Region Planning Board Act 1985 empowers the Board under clause (f) of Section 8, to select in consultation with the State Government concerned any urban area outside the National capital Region having regard to its location, population and potential for growth which may be developed in order to achieve the objectives of the Regional Plan.

Conceptually CMA's to NCR, as envisaged in regional plan-2001, are to be such urban areas as may be located sufficiently away from NCR and should have their own established roots and inherent potentials to function as viable independent growth foci. Such identified counter magnets would have the attributes of physical, social, and economic viability, nodality with respect to transportation network and have the quality of physical linkages in the form of transportation and communication facilities. These are some of the key attributes that play an important role in imparting growth propensity to an urban centre and make it a potential counter magnet.

The Regional Plan 2001 had identified the following counter magnet areas to the NCR for first stage intervention.

- § Hissar in Haryana
  - § Patiala in Punjab
  - § Gwalior in Madhya Pradesh
  - § Kota in Rajasthan
  - § Bareilly in Uttar Pradesh
- (Refer Map 1.1)

### 1.3 Present Study

The objective of the present study is:

*“To review the counter magnet area development strategy (including selection of counter magnet areas), as adopted/followed by the board and to suggest changes in the strategy/evolve an alternative strategy of development of counter magnet areas for*

*making them to play an effective role in achieving the objectives of the regional plan 2021”*

The objective of the Regional Plan 2021 is:

*“To promote growth and balanced development of the National Capital Region leading to a dynamic global city region; the endeavor is to harness the spread of development impulse and agglomeration economics generated by Delhi”*

### **Stages of the study**

The study has been conducted in four stages:

- I Inception report to include background and methodology
- II Survey and Analysis report to include  
Profile of NCT Delhi and NCR  
Migration study  
Study of existing counter magnets
- III Interim report to include selection and identification of new counter magnet areas
- IV Draft final report, a comprehensive report to include I, II & III above and strategy for development of proposed counter magnet areas including strategy to develop/strengthen economic base, urban infrastructure and operationalisation / resource mobilisation.

## **1.4 NCR Plan 2021**

The policy zones of NCR as per NCR Plan 2021 are:

- a) NCT-Delhi (1483 sq. km.)

*Area policy - Environmentally sustainable development/redevelopment*

- b) Central National Capital Region (CNCR)

CNCR includes the notified controlled areas of the adjoining towns of Ghaziabad-Loni, Noida, Gurgaon-Manesar, Faridabad-Ballabgarh, Bahadurgarh, and Sonapat-Kundli. The total area of CNCR would be about 2000 sq. km. (excluding NCT Delhi).

*Area policy – All new major economic and no-polluting activities necessary to be located in NCT Delhi should be located in the urbanisable area in this zone.*

- c) Highway Corridor Zone

The controlled area comprising a minimum width of 500 meters, inclusive of green buffer, on either side of the right of way along the National Highway Nos. 1, 2, 8, 10, 24, 58 and 91 converging to Delhi. The approximate area of this zone would be about 300 sq. km.

*Area policy – Only specified activities to be permitted*

d) Rest of NCR

The area of NCR outside the designated CNCR and Highway Corridor Zone, comprising both urban and rural areas. The approximate area of this zone would be about 29,795 sq. km.

*Area policy – accelerated development of both urban and rural areas* **Refer Map 1.2**

## 1.5 Metro Centres and regional centres in NCR Plan 2021

The Regional Plan 2021 has identified the following Metro Centres and the Regional Centres

	<b>Metro Centre/ Complex</b>		<b>Regional Centre/Complex</b>
1	Faridabad-Ballabgarh	1	Bahadurgarh
2	Gurgaon-Manesar	2	Panipat
3	Ghaziabad incl. Loni	3	Rohtak
4	NOIDA	4	Palwal
5	Sonepat-Kundli	5	Rewari-Dharuhera-Bawal
6	Greater NOIDA	6	Hapur-Pilkhua
7	Meerut	7	Bulandshahr-Khurja
		8	Baghpat-Baraut
		9	Alwar
		10	Greater Bhiwadi
		11	Shahjahanpur-Neemrana-Behror

The metro centres are the settlements with existing (2001) or projected/planned 2021 population as one million or above. According to NCR Plan 2021, these settlements can act as powerful growth nodes to attract capital functions and activities and help in population dispersal from the National Capital.

The regional centres are the well established urban centres in the region marked by specialized secondary and tertiary sector activities and providing job opportunities which normally cannot be performed by other lower order centres.

## 1.6 Regional Plan 2021 on the counter magnets of Regional Plan 2001

National Capital Regional Plan 2021 has observed the following regarding the existing counter magnets identified in Regional Plan 2001.

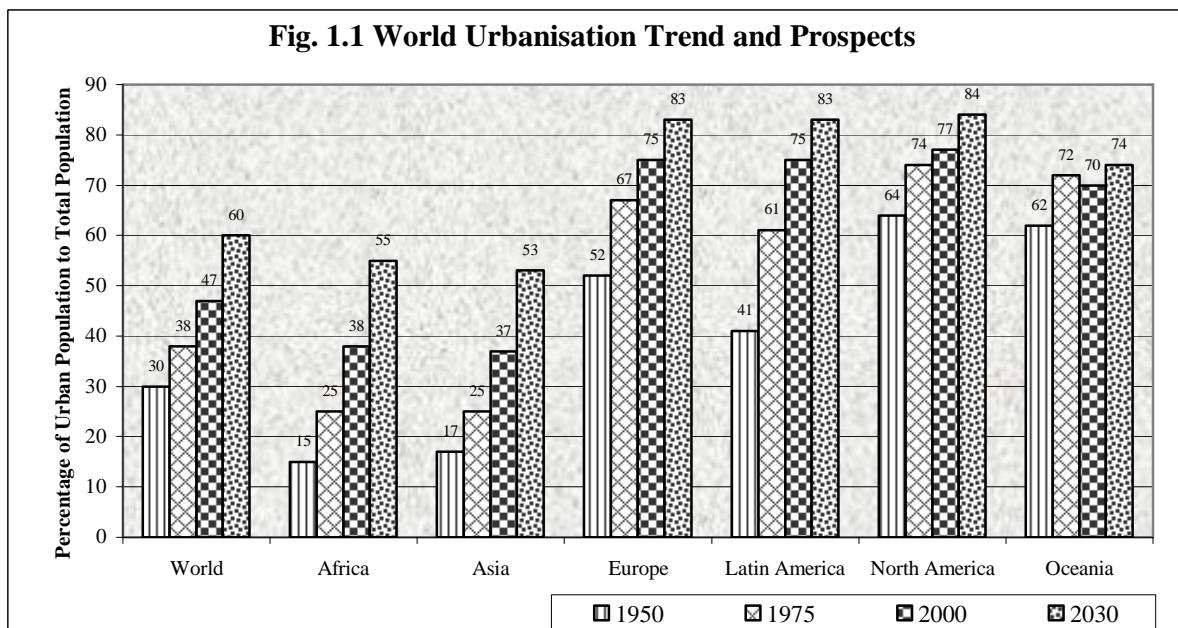
1. The counter magnets have not played the assigned role in reducing the flow of migrants from the respective states to Delhi largely due to distance factor and paucity of funds allocated for their development.
2. In order to pursue the policy of development of counter magnets in a more effective

manner it is suggested that more than one such settlement be identified in UP in consultation with the State Government from where 49% migrants come to Delhi.

Regional Plan 2021 proposes to have a relook at the counter magnet aspect. The present study proposes to review and suggest counter magnet areas outside the boundaries of NCR in the states sending high level of migrant population to NCTD and NCR.

### 1.7 World Urbanisation Scenario

The present study is outcome of the outstanding issue of rapidly growing National Capital Territory of Delhi because of ever increasing urbanisation and in-migration. It is important to look into this in the world urbanization scenario. The world is continuously urbanising specially since the end of nineteenth century with the advent of industrialisation. In 1975 the world urban population was 38 percent which increased to 47 percent in 2000 and estimated to increase to 61 percent by 2030. In developed countries say in North America, the comparative figures are 74 percent in 1975; 77 percent in 2000 and estimated to reach to 84 percent in 2030. Refer Fig. 1.1



Source: United Nations, World Urbanisation Prospects: 1999 Revision New York

With this urbanization, the trend all over is for the increase in the size of city/Urban Agglomeration (UA). In 1950, there was only one city/UA above 10 million population in the world, located in the developed world while in 2000 there were 19 such UA's. Interestingly in 1950, there was no city/UA of such a size in the developing countries while there were 15 such cities/UA in the developing countries in 2000. Refer Table 1.1

**Table 1.1: Number of 10 million + Cities/Agglomerations in the world, more developed and less developed regions of the World**

Description	World				Developed Regions				Less Developed Regions			
	1950	1975	2000	2015	1950	1975	2000	2015	1950	1975	2000	2015
No of Agglomerations	1	5	19	23	1	2	4	4	0	3	15	19
Total Population (in million)	12	68	263	375	12	36	67	69	0	33	195	306

Description	World				Developed Regions				Less Developed Regions			
	1950	1975	2000	2015	1950	1975	2000	2015	1950	1975	2000	2015
% Urban Population	1.7	4.4	9.2	9.8	2.8	4.9	7.4	7.1	0	4.0	10.1	10.7

Source: United Nations World Urbanisation Prospects: 1999 Revision New York

From Table 1.2 shows that more number of major UA's are now located in the developing countries.

**Table 1.2: Fifteen largest urban agglomerations, ranked by population size during 1950 and 2000**

Top 15 UA's in 1950		
Rank	Agglomeration & Country	Population (millions)
1	New York, USA	12.3
2	London, UK	8.7
3	Tokyo, Japan	6.9
4	Paris, France	5.4
5	Moscow, Russian Federation	5.4
6	Shanghai, China	5.3
7	Essen, Germany	5.3
8	Buenos Aires, Argentina	5
9	Chicago, USA	4.9
10	Calcutta, India	4.4
11	Osaka, Japan	4.1
12	Los Angeles, USA	4
13	Beijing, China	3.9
14	Milan, Italy	3.6
15	Berlin, Germany	3.3

Cities in the Developing Countries

Top 15 UA's in 2000		
Rank	Agglomeration & Country	Population (millions)
1	Tokyo, Japan	27.9
2	Bombay, India	18.1
3	Sao Paulo, Brazil	17.8
4	Shanghai, China	17.2
5	New York, USA	16.6
6	Mexico City, Mexico	16.4
7	Beijing, China	14.2
8	Jakarta, Indonesia	14.1
9	Lagos, Nigeria	13.5
10	Los Angeles, USA	13.1
11	Calcutta, India	12.7
12	Tianjin, China	12.4
13	Seoul, Republic of Korea	12.3
14	Karachi, Pakistan	12.1
15	Delhi, India	11.7*

\* Delhi's Urban Population for 2001 – 12.82 million

### 1.7.1 NCT, Delhi – A Major Urban Agglomeration

NCT Delhi is one of the fifteen major urban agglomerations in the World. As per 2001 census, total population of Delhi is 13.78 million which comprise of 12.82 million urban population and 0.96 million rural population. Delhi, which is the third largest metropolis of the country, has been experiencing high growth rate during the last few decades. The urban population of Delhi during the last decade (1991-2001) increased at 3.87 percent annual growth rate. The unprecedented growth rate and population influx to Delhi is mainly due to high migration into the city from adjacent states as well as from other states of the country. The rapid growth in Delhi's (NCTD) population has been noticed since 1941 and expected / estimated to reach 22.5 million in 2021. In-migration has played a major role in the growth of population of Delhi making it a big magnet for further migration.

#### **Tokyo – Global Megacity**

Tokyo is the largest urban agglomeration in the world having total population of 27.9 million in 2000. It has been the dominant urban centre in Japan. As early as 1700, Tokyo had a population of over 1 million, when the population of London was 0.65 million. After Second World War, its population increased from 6.9 million in 1950 to 16.5 million in 1970. The unprecedented growth of the city has led to urban problems, including escalating land prices, shortage of office space, high-cost housing, congestion and excessive commuting journeys. In the recent years, government has sought to encourage decentralization through the construction of technopoles, small cities of around 50,000 population built for high-tech industries, research institutes and colleges near existing medium size cities. It has also discussed the relocation of capital functions to other parts of the Tokyo Metropolitan region. One of the important goal is development of multi-core urban structure in which functions of the city are dispersed to reduce the travel distances between place of employment and place of residence.

*Source: Pacione, M. "Urban Geography: A Global Perspective" (2005), Pg. – 79.*

In many parts of the world, most famously London in Europe, New York in North America and Seoul in Asia have tried to restrict the polarization of the population in major metropolitan cities. Seoul being a case of the developing country has been taken as a case study.

## 1.8 Case study - Seoul

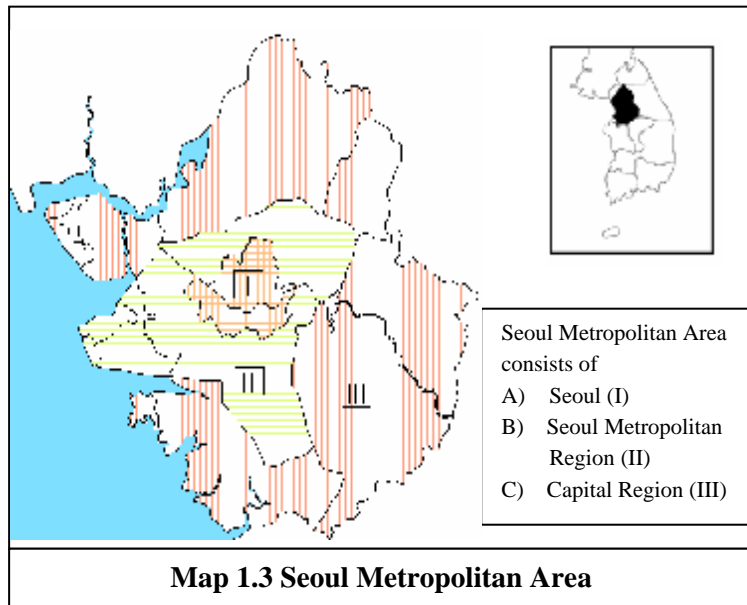
### 1.8.1 Introduction

Seoul, the capital of South Korea is located on the banks of Han River Basin. In 1394, Seoul became the capital of Chosun Kingdom. The kingdom was colonized by Japan in 1910 and during 35 years of Japan's occupation/rule, its population increased from 2.5 lakh in 1910 to 1 million in 1950. After the independence of Korea in 1950, Seoul noticed a rapid increase in population. The growth of Seoul began in early 1960's when Korea's capacity was fully mobilized for rapid industrialization and nationwide population migration started from rural to urban areas. Being the political, economic, cultural and educational centre, Seoul became the most attractive city for people to search for better employment opportunities. This resulted in its sharp increase in population i.e. net increase of 13.6 lakh population during 1960 to 1966. This increase in population during 1960-1966, was due to the following reasons:

1. 11 percent due to annexation (addition of new areas)
2. 31 percent due to natural growth of Seoul
3. 58 percent due to in-migration

### 1.8.2 Geographical expansion of Seoul and capital region

Seoul expanded physically from 597 sq km in 1963 to 627 sq km in 1973 which corresponds roughly to its present area. Recognizing the need of an integrated urban living space due to rapidly expanding urbanized region, the boundaries of Seoul Metropolitan Area officially known as Seoul Capital Region have been delineated. The total area of the region in 1985 was 11,235 sq km which includes three upper-tier local governments i.e. Seoul, Incheon and the province of Kyonggi and 64 lower-tier local governments with a population of 16 million.



### 1.8.3 Population Share of Seoul

As observed from the Table 1.3, the population share of Seoul capital region to that of Korea has rapidly increased from 23.7 percent in 1960 to 45.4 percent in 1995.

**Table 1.3: Population trend of Korea, Seoul and Seoul Capital Region**

Year	Population in million (% of Total Population of Korea)		
	Korea	Seoul Capital Region	Seoul
1960	24.99	-	2.45 (9.8)
1966	29.16	6.90 (23.7)	3.79 (13)
1970	30.88	8.73 (28.3)	5.43 (17.6)
1975	34.71	10.94 (31.5)	6.90 (19.9)
1980	37.44	13.30 (35.5)	8.36 (22.3)
1985	40.45	15.82 (39.1)	9.64 (23.8)
1990	43.41	18.14 (41.8)	10.16 (23.4)
1993	44.06	19.67 (44.6)	10.67 (24.2)
1995	44.61	20.27 (45.4)	10.23 (22.9)

Source: Economic Planning Board, Population Census 1966-1990: Major Statistics of Korean Economy 1995

### 1.8.4 Reasons for residing in Seoul

As per the survey conducted by Korea Research Institute for Human Settlement in 1980, following are the reasons for residing in Seoul:

**Table 1.4: Reason-wise percentage of total migration to Seoul**

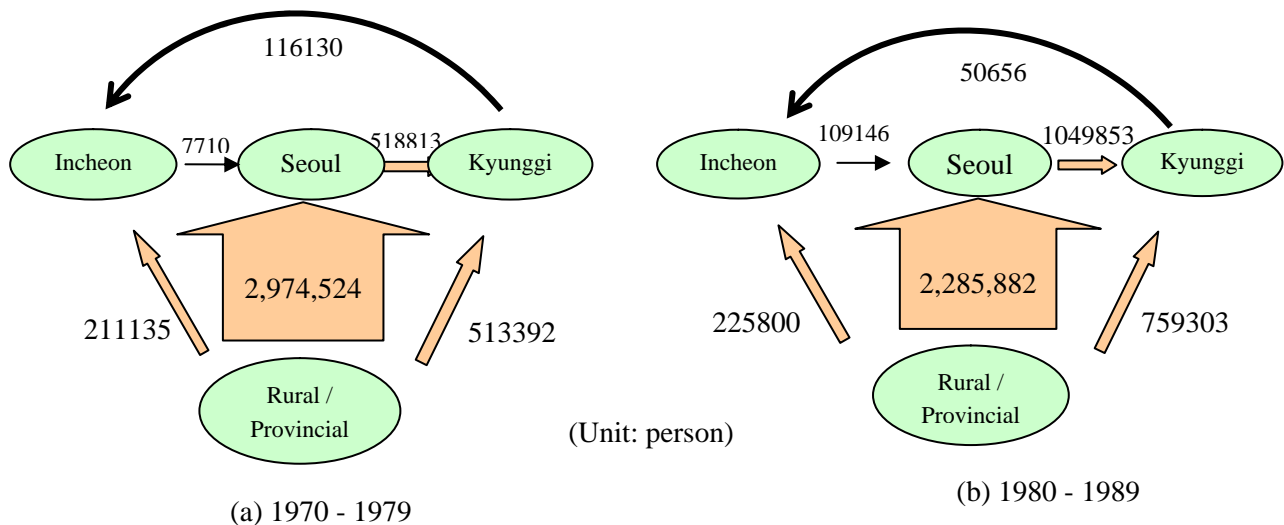
Sl. No.	Reasons	Percentage
1	Job-related	26.30

Sl. No.	Reasons	Percentage
2	Born in Seoul	23.90
3	Education of household-head or children	17.90
4	Joining family	11.70
5	Job seeking	8.20
6	Convenience for business transaction	7.80
7	Influence of friends or relatives	2.10
8	Others	2.10
	Total	100

Source: Survey conducted by Korea Research Institute for Human Settlements, 1980

### 1.8.5 Migration pattern to and from Seoul (1970-1979 and 1980-1989)

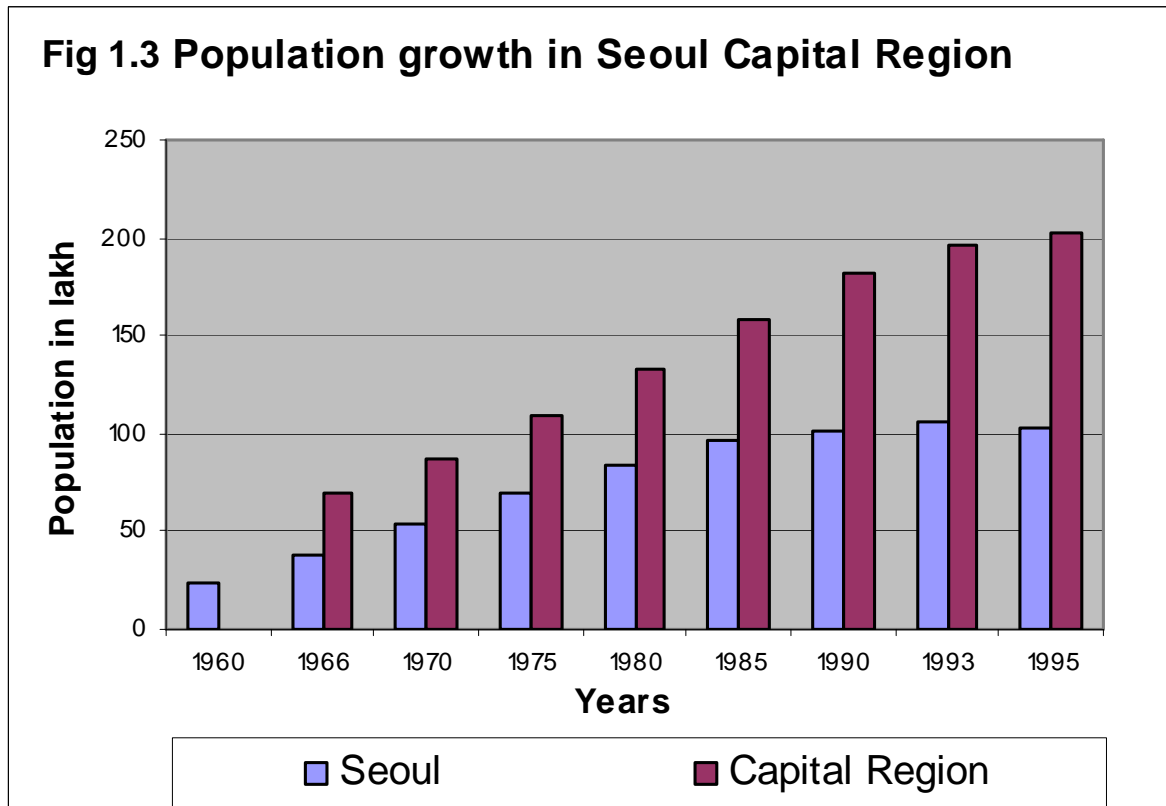
It can be observed from the figure that migration from rural/provincial areas to Seoul has reduced from 29.75 lakh in 1970-79 to 22.86 lakh in 1980-89. On the contrary, migration to Incheon and Kyunggi towns has increased from 7.25 lakh to 9.85 lakh during the same period. The figure also reveals that migration from Seoul to Kyunggi has doubled (5.19 lakh to 10.50 lakh) during the same period.



Source: <http://www.unu.edu/unupress/unupbooks/uu11ee/uu11ee0i.htm>

Since 1960 Seoul has experienced an accelerated annual growth rate (Refer bar diagram). During this period Seoul experienced unprecedented growth in its six hundred years of history. The growth of Seoul also coincided with the rapid growth of the national economy. The Korean government framed the policies to restrict the growth of Seoul to balance the developments throughout the nation since 1964. The annual population growth rate in Seoul and its capital region peaked during the period 1966-1970 at a rate of 9.4 percent in Seoul and 6.1 percent in the capital region.





### 1.8.6 Growth management policy development

Korean government has worked out the following policies and implementation tools to manage urbanization and metropolitanization of Seoul. The policy objective/ main concern of Government about the growth management policy is ‘how to steer the location of people and industries away from the Seoul Metropolitan Area (SMA) and to ultimately achieve the balanced development among regions in the nation’. In spite of fact that formal policy objective has been unchanged, strategies have been changed over the past thirty five years. They have evolved the four stages as given below:

#### Stage I - Set up of Policy Direction for managing the growth of Seoul (1960-1971)

The main objective of this stage was to manage the growth of Seoul. Policy direction to manage the growth of Seoul was announced in 1964. Government intension was to restrict the growth of Seoul with the help of following measures:

- Relocating government offices from Seoul to other major cities of Korea
- Develop growth poles in terms of garden cities or new industrial cities at strategic location. Under this strategy government started developing Industrial Parks mainly in South-Eastern part of the country
- In 1969 government adopted Comprehensive Decentralization policy

#### Stage II - Green belt and New town strategy (1972-1979)

First comprehensive National Physical Development Plan was prepared for the period 1972 – 1981. It highlights the importance of developing large scale industrial estates, expansion of power, water, roads, harbour, communication and other social overhead capital in rest of the Korea. The existing tax

laws were revised to discriminate development of industries in urban centres. Several industrial new towns were developed in remote provincial areas. Within the capital region, two new towns were developed. These new towns were, Aman to relocate manufacturing industries and Kwachon to relocate government offices from Seoul. Although the population increased rapidly from 1970 to 1980 but it had its dampening effect subsequently.

### **Stage III - Inter-regional decentralization policy (1980-1988)**

During this stage more systematic approach was adopted to facilitate orderly spatial development of SMA. The entire capital region was delineated as a planning unit and the regional landuse control system, which still works in a slightly revised form, was newly introduced in the middle of 1980's. Socio-political changes since the end of 1980's have made the system vulnerable. President Park proposed the relocation plan for New Capital City but this plan was dropped with the assassination of its chief proponent. During this period second National Physical Development Plan was formulated for the period 1982-1991. The new administration, which took over offices after assassination of late President Park, formulated new strategies. These strategies were addressed in the second National Physical Development Plan implemented in 1981 and Capital Region Management Law enacted in 1982. In the second plan, two key strategic concepts were suggested which are as below:

#### **1. Integrated living sphere strategy**

This strategy adopted to mitigate intra-regional inequality by providing social and physical arrangements to maximize the mutual contact between major urban nodes and its surrounding rural areas. It was expected that by linking the two areas through improved transportation networks, urban services and job opportunities agglomerated in major urban nodes could be shared by rural as well as urban residents.

#### **2. Growth centre strategy**

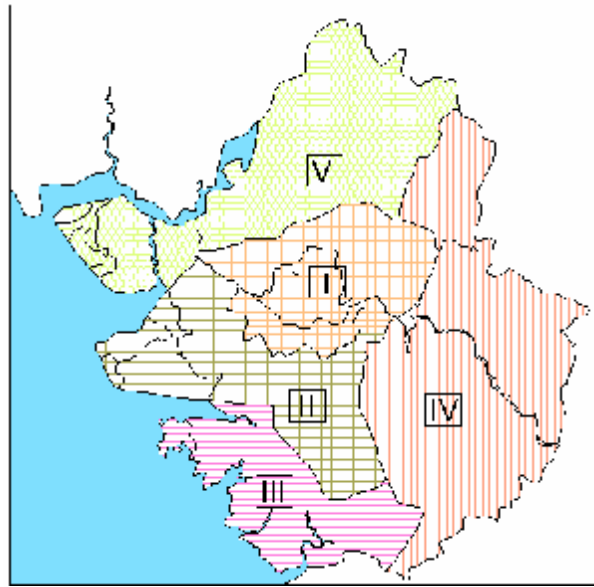
The key concept of this strategy was concentrated decentralization to handle inter-regional inequality. Counter magnets were created to curb the excessive concentration in SMA. These counter magnets would be created by allocating limited investment funds to intensify growth potential of selected fifteen provincial cities. Create enough counter magnets in other urban centres across the country which could help to interrupt migration flow into SMA.

### **Important features of Capital Region Management Law**

The capital region management law was the most tightly written device to cope with the issue of decentralization. Three specific noteworthy features of this law are as follows:

**a) Preparation of Capital Region Management Plan**

This plan is prepared to ensure effective landuse, desirable distribution of industrial population and harmonious placement of social overhead capital across the region. The plan would set the guidelines and detailed directives for the lower order local plans (urban plans). It was the first Capital Region Plan made public in 1984 and adopted five zonal system approach for development. It highlights development performance guidelines for each zone as given below: (Refer map no. 1.4)



**Map No. 1.4 Seoul Capital Region: Five Zones**

- I        Relocation promotion zone
- II       Restricted rearrangement zone
- III      Development inducement zone
- IV      Nature preservation zone
- V        Development reservation zone

**b) Creation of Capital Region Management Committee (CRMC)**

The committee chaired by Prime Minister would coordinate regional planning and management issues. It would consist of cabinet members, mayor and private representatives. Considering the necessity of handling rapid metropolitanisation of Seoul, the law intended to provide overall and effective management devices for physical developments, land uses and arrangement of infrastructure for entire metropolitan area. Recognizing the region as an integrated urban living space glued to the city of Seoul by close economic, functional and social interactions, the law required an integrated planning dealing with the entire region as a unit while management consideration would be based on inter-governmental coordination.

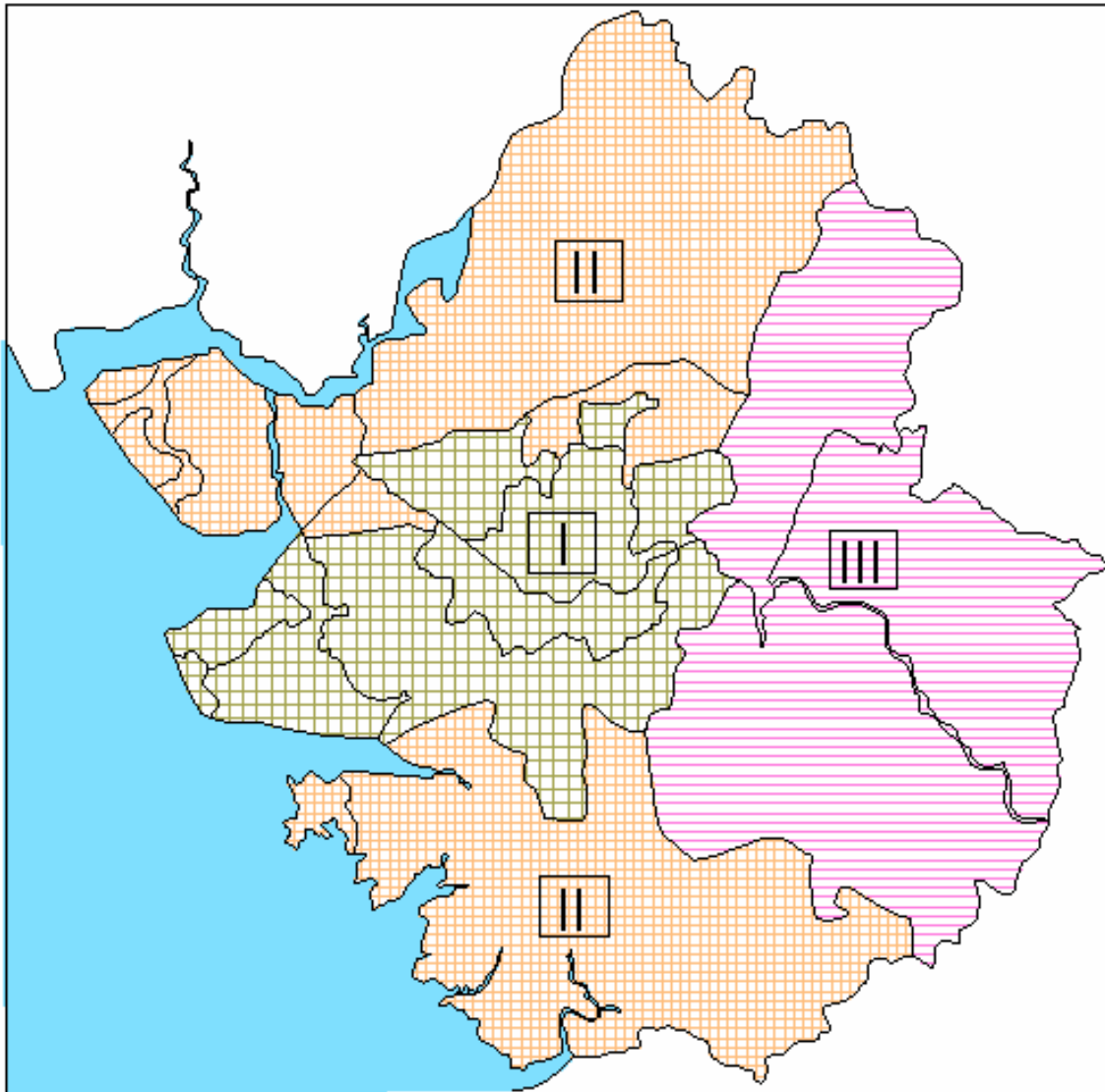
**c) Preparation of population impact statement**

It would be required for development projects of certain categories to forecast the adverse effect upon population growth within the region.

**Stage IV - New town development and revision of growth management policy  
(1989-onwards)**

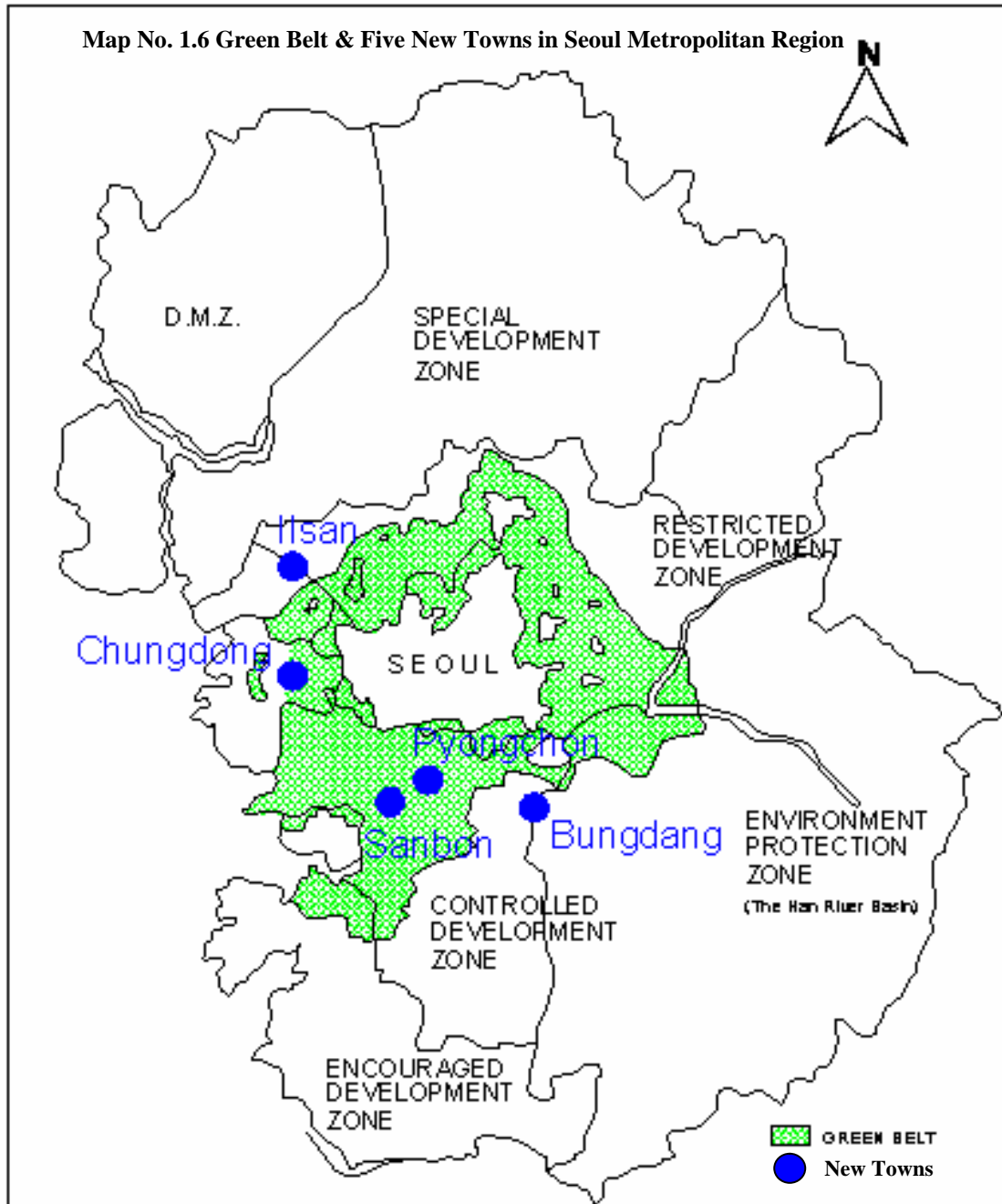
The government also modified/revised the growth management policy. Five category of development sub-regions were streamlined into the following three zones. Refer map no. 1.5

- i) Over concentration management zone (I)
- ii) Growth management zone (II)
- iii) Nature preservation zone (III)



**Map No. 1.5 Revised Zonal Division of Capital Region**

Five new towns proposed outside the green belt to manage the growth of Seoul are Bundang, Ilsan, Pyungchon, Sambon and Joongdong (refer map 1.6). These towns were developed to accommodate 1.2 million population. The main reason for government decision to develop new towns was to check/halt the rising housing prices coupled with labour dispute at that time threatened the social stability as well as the economy.



### 1.8.7 Criticisms on the past policies

The uncurbed growth of SMA during the last thirty five years has generated problems of growing inequality between SMA & other region and overgrown metropolitan itself. In the early 1960's when Korean government declared to fight against the growth of Seoul, various policy measures based on green belt & new town strategy in 1970 and the concentrated decentralization strategy in 1980 to handle these problems have been formulated and implemented. In spite of lots of efforts of government, there area gaps between the reality and policy intentions. SMA is pressed with overgrown problems of income inequality, housing shortage, traffic congestion, high land price, degrading quality of urban amenities and environment pollution. The critics also argue that

government has not made much effort to provide required investment for development of alternative locations where population and industries could be accommodated. Government did not do its best to arouse political support for the success of decentralization policy.

As a result of government policies, new trend of relative decentralization of population in the suburban areas of Seoul started and began to grow faster than that of Seoul. These suburban areas became the integral part of Seoul Metropolitan area. The population of capital region increased rapidly i.e. from 13.3 million in 1980 to 18.1 million in 1990. As a consequence of this rapid urbanization in Capital region, five new towns were developed in early 1990's. This resulted in decrease in population of Seoul since 1993 i.e from 10.7 million in 1993 to 10.2 million in 1995.

Although the population of Seoul has decreased but the Capital Region is growing faster than any other region in the nation. Facing complex international social, political and economic changes, the importance of SMA cannot be overlooked in keeping Korean economy thriving and growing continuously. This may accelerate the region-wide metropolisation of Seoul. One important inference of the study is that to cope with the problem of inequality, it would be better to invest in selective provincial centres having growth potential.

## 1.9 Demographic profile – NCR & NCTD

### (i) Population growth

The NCR which includes Sub-regions of NCT-Delhi, Haryana, Rajasthan and Uttar Pradesh accommodates total population over 371 lakh in 2001. The relative share of NCT-Delhi in the total population of NCR has been steadily increasing - 31.28 percent in 1981 to 37.30 percent in 2001. The decadal growth rate for NCT-Delhi and NCR has reduced from 51.45% & 37.62% in 1981-91 to 47.02% & 35.59% respectively in 2001. Refer Table 1.5

**Table 1.5: Sub-region wise Distribution of Population in NCR**

Sub-region/Year	Population (Person)			Decadal Growth Rate (%)		Share of Population (%)		
	1981	1991	2001	1981-1991	1991-2001	1981	1991	2001
NCT-Delhi	62,20,406	94,20,644	1,38,50,507	51.45	47.02	31.28	34.43	37.3
Haryana	49,38,541	66,43,604	86,87,050	34.53	30.76	24.84	24.28	23.4
Rajasthan	17,55,575	22,96,580	29,92,592	30.82	30.31	8.83	8.39	8.06
Uttar Pradesh	69,68,646	90,01,704	1,15,70,117	29.17	28.53	35.05	32.90	31.1
<b>NCR</b>	1,98,83,168	2,73,62,532	3,71,00,266	37.62	35.59	100	100	100

*Source: Census 1981, 1991 and 2001, Census of India*

### (ii) Level of urbanisation/rural-urban dynamics in NCR

During the past two decades (1981-2001), the urban share in NCR has registered a higher growth rate as compared to its rural share. The share of urban population has increased from 45.87% in 1981 to 50.23% in 1991 and to 56.39% in 2001. In NCR excluding NCT-Delhi, the share of urban population has increased from 29.39% in 1991 to 34.47% in 2001. Refer Table 1.6

**Table 1.6: Urban-Rural Components of Population in NCR (1981-2001)**

Urban-Rural Component/ Year	Population (Person)			Percent share (%)		
	1981	1991	2001	1981	1991	2001
<b>Total NCR</b>	<b>1,98,83,168</b>	<b>2,73,62,532</b>	<b>3,71,00,266</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>
Urban NCR	91,20,172	1,37,44,784	2,09,20,074	45.87	50.23	56.39
Rural NCR	1,07,62,996	1,36,17,748	1,61,80,192	54.13	49.77	43.61
<b>Total NCT-Delhi</b>	<b>6220406</b>	<b>9420644</b>	<b>13850507</b>	<b>100</b>	<b>100</b>	<b>100</b>
Urban NCT-Delhi	5768200	8471625	12905780	92.73	89.93	93.18
Rural NCT-Delhi	452206	949019	944727	7.27	10.07	6.82

Source: Census 1981, 1991 and 2001, Census of India

**(iii) Population density**

The population density of NCR has increased from 634 persons per sq km in 1981 to 1,105 persons per sq km in 2001; all India average being 324 persons per sq km in 2001. The population density of NCT-Delhi has also become more than double during last two decades i.e. increased from 4192 persons per sq km in 1981 to 9340 persons per sq km in 2001. Refer Table 1.7.

**Table 1.7: Sub-region wise Population Density in NCR (2001)**

Sub-region/ Year	Density (Person/sq km)	
	1981	2001
NCT-Delhi	4,192	9,340
Uttar Pradesh	642	1,066
Haryana	368	648
Rajasthan	238	382
NCR	634	1,105

Source: Census 1981 and 2001, Census of India

**(iv) Sex-ratio and age-sex structure**

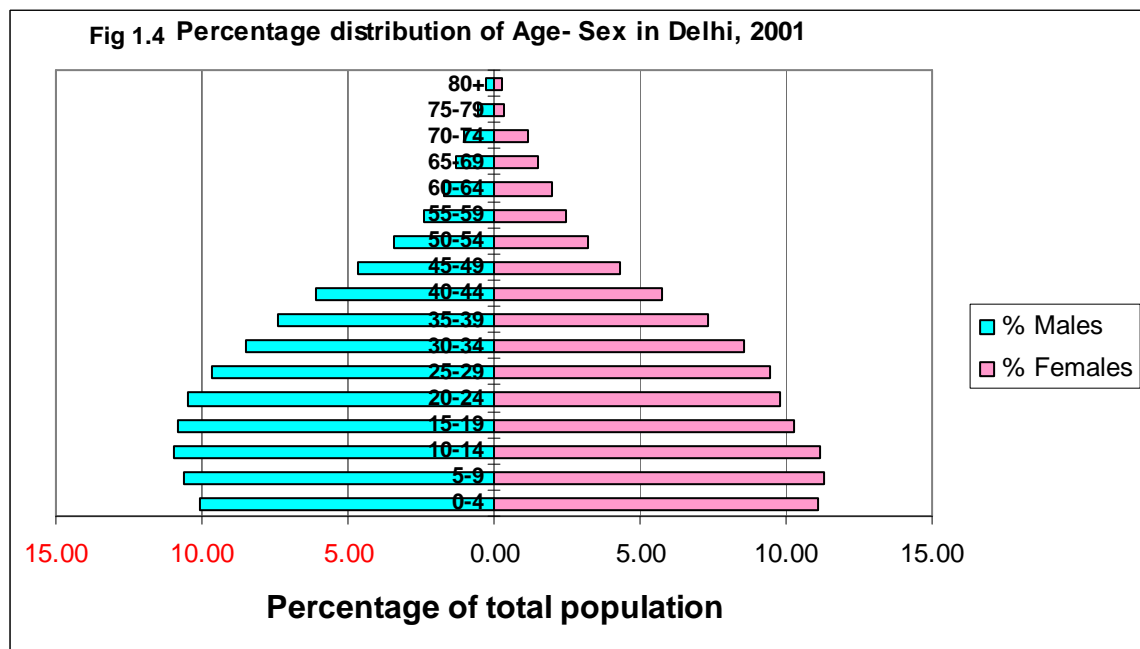
The sex ratio of NCT-Delhi as per 2001 census is 821 which is lower than the national average of 933. One of the strong reasons for lower sex ratio is due to higher percentage of male migrants to Delhi. Table no 1.8 and diagram shows the male female population among various age groups. The age-sex structure indicates that the population in the age group 25-59 accounts for 41.69% of total population which consist of 32.08 lakh males and 25.67 lakh females.

**Table 1.8: Age-Group wise male female population in NCT-Delhi, 2001**

Age - Group	Population in '000			% Total		
	Males	Females	Total	Males	Females	Total
0-4	766	691	1457	10.07	11.07	10.52
5-9	809	704	1513	10.64	11.28	10.92
10-14	831	698	1529	10.93	11.18	11.04
15-19	822	641	1463	10.81	10.27	10.56
20-24	799	613	1412	10.50	9.82	10.20
25-29	735	592	1327	9.66	9.48	9.58

Age - Group	Population in '000			% Total		
	Males	Females	Total	Males	Females	Total
30-34	648	535	1183	8.52	8.57	8.54
35-39	564	456	1020	7.42	7.30	7.37
40-44	465	361	826	6.11	5.78	5.96
45-49	356	271	627	4.68	4.34	4.53
50-54	259	200	459	3.41	3.20	3.31
55-59	181	152	333	2.38	2.43	2.40
60-64	132	124	256	1.74	1.99	1.85
65-69	98	96	194	1.29	1.54	1.40
70-74	76	72	148	1.00	1.15	1.07
75-79	42	22	64	0.55	0.35	0.46
80+	23	15	38	0.30	0.24	0.27
All age groups	7606	6243	13849	100.00	100.00	100.00

Source: Report of technical group on population projections constituted by the National Commission on Population, May 2006, Census of India



**(v) Literacy rate**

The literacy rate in Delhi rose from 38.4 percent in 1951 to 81.80 percent in 2001, while the literacy rate at the national level for the corresponding period rose from 18.3 percent to 65.40 percent. The literacy rate in the states of Haryana, Uttar Pradesh and Rajasthan is 68.59%, 57.36% & 61.03% respectively in 2001. In NCTD, the target of total literacy has remained elusive because of the continuous migration into Delhi. Refer table 1.9

**Table 1.9: Comparative Literacy rate of India, Delhi and other states in NCR in 2001**

S. No.	NCR States	Total	Male	Female
1	Delhi	81.82	87.37	75.00
2	Haryana	68.59	79.25	56.31
3	Uttar Pradesh	57.36	70.23	42.98

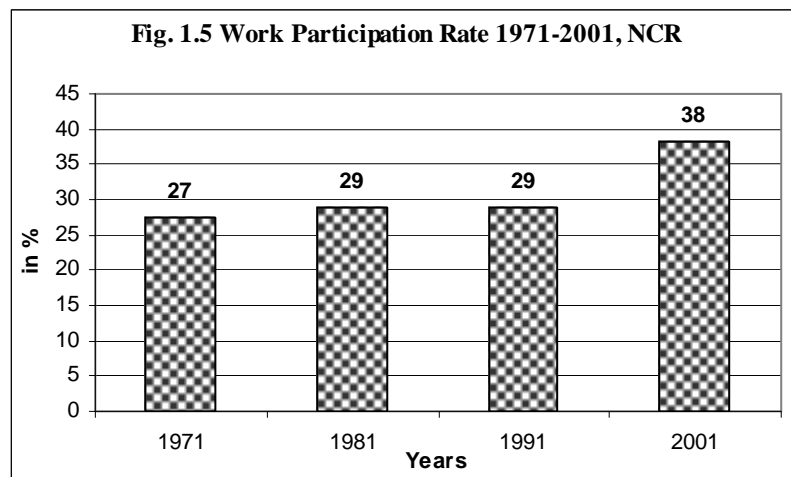


S. No.	NCR States	Total	Male	Female
4	Rajasthan	61.03	76.46	44.34
5	All India	65.40	75.80	54.20

Source: Census of India, 2001; DHDR 2006 Pg-16, Economic Survey of Delhi 2001-2002 Pg-133

### 1.10 WORK FORCE - NCR

It is revealed from table 1.10 that workforce participation rate in the region has improved from 27.40 percent in 1971 to 29 percent in 1991 and 38.17 percent in 2001. The workers participation rate of NCT-Delhi as well as in the sub-regions of Uttar Pradesh, Haryana and Rajasthan has substantially improved between 1971 and 2001. Refer Fig. 1.5



**Table 1.10: Workers Participation in NCR**

Sub-region	Workers Participation Ratio			
	1971	1981	1991	2001
NCT-Delhi	30.20	31.80	31.51	32.8
Haryana	25.02	27.70	28.35	38.85
Rajasthan	26.40	25.60	28.00	48.7
Uttar Pradesh	27.20	27.00	27.20	32.3
<b>Total NCR</b>	<b>27.40</b>	<b>28.70</b>	<b>29.00</b>	<b>38.17</b>

Source: Census 1971 - 2001, Census of India

As per the projections of NCR plan – 2021, workers participation rate for NCTD will improve from 31.51% in 1991 to 38% by 2021. The share of primary sector will further reduce to 0.75 percent of total workforce while the employment in trade and commerce activities would increase from 23.91% in 1991 to 30 percent by 2021. Refer Table 1.11

**Table 1.11: Distribution of Workforce in NCT-Delhi (1991-2021)**

Categories	Proportion of Workers (%)	
	1991 (actual)	2021 (estimated)
Primary Sector	2.85	0.75
Industry	24.68	21.00
Construction	7.80	7.25
Trade and Commerce	23.91	30.00
Transport, Storage and Communications	8.30	8.00
Other Services	32.52	33.00
<b>Participation rate</b>	<b>31.51</b>	<b>38.00</b>

Source: NCR Plan, 2021

The contribution of NCT-Delhi in the share of total workforce of NCR has increased from 38.39% in 1991 to 41.14% in 2001. On the other hand, the employment share of Haryana and UP sub-regions have reduced from 24.36% & 31.99% in 1991 to 21.98% & 27.85% in 2001. Refer table 1.12

**Table 1.12: Sub-region wise employment of NCR in 1991-2001**

NCR Sub-region	1991		2001	
	Total	%	Total	%
NCT-Delhi	2968377	38.39	4317516	41.14
Haryana	1883168	24.36	2306151	21.98
Rajasthan	406840	5.26	947587	9.03
Uttar Pradesh	2473304	31.99	2922504	27.85
<b>NCR Total</b>	<b>7731689</b>	<b>100</b>	<b>10493758</b>	<b>100.00</b>

### 1.11 SETTLEMENT PATTERN - NCR

#### (i) Urban Settlements

There are 108 urban settlements in the National Capital Region in 2001 which increased from 94 in 1981. Of these, there are 17 Class-I cities (including Delhi Metropolis), 9 Class-II, 27 Class-III, 38 Class-IV, 15 Class-V and 2 Class-VI towns (Refer Table 1.13). The Class-I cities accommodated more than 90% of the total urban population of the region while remaining 10% population is distributed among 91 towns of Class-II to Class-VI. Delhi Urban Agglomeration alone accounted for about 62% of the total urban population of the region. The number of metropolitan cities (more than 10 lakhs) in the region increased from one (Delhi) in 1991 to three (Delhi, Meerut and Faridabad) in 2001. The population of Ghaziabad, taken together with the population of Loni town also reached the one million mark. There are 35 urban settlements in Haryana Sub-region, 9 in Rajasthan Sub-region and 63 in Uttar Pradesh Sub-region. Refer Table 1.13

**Table 1.13: Urban Settlements in NCR (2001)**

Urban Settlement /Sub-region	Class-I	Class-II	Class-III	Class-IV	Class-V	Class-VI	Total
	100,000 +	50,000-99,999	20,000-49,999	10,000-19,999	5,000-9,999	Below 5,000	
Haryana	8	0	7	13	6	1	35
Rajasthan	1	0	4	3	1	0	9
Uttar Pradesh	7	9	16	22	8	1	63
NCT-Delhi	1	0	0	0	0	0	1
<b>NCR</b>	<b>17</b>	<b>9</b>	<b>27</b>	<b>38</b>	<b>15</b>	<b>2</b>	<b>108</b>

Source: Census 2001, Census of India

#### (ii) Central NCR (earlier DMA) and Priority Towns

The CNCR towns are **Ghaziabad-Loni complex, NOIDA, Faridabad, Gurgaon, Bahadurgarh and Kundli** which were earlier named as ring towns/DMA towns. The population assigned to CNCR towns for 2001 in NCR Regional Plan 2001, was 37 lakh against which they have a population of 28.11 lakh as per the Census 2001. Of these six towns, Ghaziabad and Faridabad reached their targeted population while the rest of CNCR towns could not achieve their target. Eleven priority towns are **Meerut, Hapur, Bulandshahar-Khurja complex in UP Sub-region, Palwal, Panipat, Rohtak, Rewari, Bhiwadi, Daruheda in Haryana Sub-region and Alwar** in Rajasthan Sub-region. In the case of Priority Towns, which were assigned to accommodate 20 lakhs deflected population from Delhi and achieve a total population of 49 lakhs, actually

attained a population of 28.17 lakh as per census 2001. Therefore CNCR town and priority towns could actually achieve/accommodate a total population of 56.28 lakh against the assigned population of 86 lakh. On the other hand NCT-Delhi & NCR have achieved the total population of 138.50 lakh & 371 lakh against the assigned population of 112 lakh & 325 lakh respectively. Refer table 1.14

**Table 1.14: Population assigned and actual population achieved in NCR**

NCR sub-regions	Population assigned in NCR plan – 2001	Actual population as per 2001 census
NCT Delhi	112 lakh	138.50 lakh
CNCR town (six towns)	37 lakh	28.11 lakh
Priority towns (eleven towns)	49 lakh including 20 lakh deflected population	28.17 lakh
Rural NCR including rest of urban NCR	127 lakh	176.22 lakh (including 14.22 lakh urban population)
Total NCR	325 lakh	371 lakh

**(iii) Rural Settlements**

According to the Census 2001, there are 7,528 rural settlements of various sizes in the National Capital Region. Of these, 158 are in NCT of Delhi, 2,471 in Haryana, 1,954 in Rajasthan and 3,185 in Uttar Pradesh Sub-regions. More than 162 lakhs persons lived in rural areas in NCR in 2001, accounting for about 44% of total population of NCR.

**(iv) Proposed Hierarchy of Settlements-NCR Plan 2021**

Regional Plan – 2021 have proposed six categories of settlements hierarchy. Refer table 1.15

**Table 1.15: Proposed Six-Tier Hierarchy of Settlements**

S. No.	Hierarchical Level	Population Range
1.	Metro Centre	10 lakhs and above
2.	Regional Centre	3 to 10 lakhs
3.	Sub-regional Centre	0.5 to 3 lakhs
4.	Service Centre	10,000 to 50,000
5.	Central Village	5,000 to 10,000
6.	Basic Village	Below 5,000

**1.12 REGIONAL LINKAGES AND CONNECTIVITY**

**1.12.1 Existing transport network**

***i) Road Network***

Existing road network in the region shows convergence of five national highways i.e., NH-1, 2, 8,10 and 24 on Delhi and two National Highways namely NH58 and NH91 meet NH24 at Ghaziabad. These national highways have four lane divided carriageway on most of the stretches of NCR. The Delhi-Rohtak (NH10), from Delhi to Delhi-Haryana border is four to six lane divided carriageway, Ghaziabad-Meerut (NH58) is four lane divided carriageway up to Meerut excluding Meerut bypass,

which is two lane, and Ghaziabad-Bulandshahar (NH91) which is two lane highway. In addition to this, NH71, NH71A and NH71B also pass through the region. Ten state highways also serve in strengthening the regional road network. Most of the state highways are of single lane or intermediate lane.

### *ii) Rail Network*

The NCR rail network covers three railways (northern, western and central) zones and five divisions. The rail network in the region consists of both broad and metre gauges. Five broad gauge railway lines converge at Delhi. The rail network has two specially identified lines known as the Goods Avoiding lines (GAL) and Delhi Avoiding Lines (DAL). The GAL provides a direct entry from Ghaziabad to New Delhi bypassing the congested Delhi Railway Station Complex. The DAL provides a direct passage from the major yards-Tughlakabad and Ghaziabad directly into the Delhi-Ambala-Kalka section and through Lajpat Nagar, Patel Nagar, Daya Basti and Azadpur link.

### *iii) Airport*

The only airport in the NCR is Indira Gandhi International Airport which has two wings i.e. one for international flights and other for domestic flights.

## **1.13 Transport Plan – 2021**

### ***1.13.1 Road and rail network:***

The road network in NCR Plan 2021 consists of expressways (Kundli-Ghaziabad-Palwal eastern peripheral expressway, Kundli-Manesar-Palwal western peripheral expressway & Ghaziabad-Meerut expressway), primary road network and other roads. The rail network in NCR Plan 2021 consists of proposed orbital rail corridor, Regional Rapid Transit System besides the existing rail network. **Refer Map 1.7 and 1.8**

### ***1.13.2 Airways:***

NCR plan 2021 has a proposal of an international airport at suitable location within the region to act as an alternative to the existing international airport in Delhi. The Plan also suggests to develop more domestic air terminals within the region.