CHAPTER - 3

LAND ACQUISITION PROCESS : LAND ACQUIRED IN DELHI - A SPATIAL AND TEMPORAL ANALYSIS

Temporal and Spatial framework of analysis

All the variables of land acquisition process i.e. land, awards of land acquisition, compensation, rate of compensation, rate of market value etc. have been analysed in temporal as well as spatial frame work. Temporally, the period of analysis has been from 1948 (just after independence) to the year 1989 (the latest year when the present study was initiated) covering about 41 years to find out meaningful patterns and trends over time. Since in Delhi the land was acquired by the State to achieve the objectives of 'Master Plan of Delhi, the major proportion of land acquired was for the Delhi Development Authority for the development of Delhi in a planned way. Accordingly the type of land acquired has been distinguished as the one acquired for Planned Development of Delhi from the one acquired for other public agencies for various other non-plan purposes.

The urban land planning process started with the inception of DDA in 1955 and acquisition of land under the scheme of 'Interim General Plan of Delhi' started soon thereafter. However, the large-scale acquisition of land to effect the Master Plan started with the general notification covering major portion of Delhi in 1959. In other words, the real acquisition of land for Planned Development of Delhi started from the year 1959. Accordingly, the total period has been divided into Plan and non-Plan period. The period from 1948 to 1958 was non-Plan period since during this period the land was acquired primarily for non-plan purposes. The period from 1959 to 1989 for the present study has been categorized as the Plan period.

The Plan period for the purpose of analysis has been divided into three decades viz., from 1959 to 1969, from 1970 to 1979 and from 1980 to 1989. The period from 1980 to 1989 has been further split into two parts from 1980 to 1984 and from 1985 to 1989 since in 1984 major
amendments were made in the Land Acquisition act, 1984 and the effects of such amendments could be only captured by analysing the pre and post period of amendments.

Spatially Delhi has been divided into seven regions. Delhi (DL) comprising main City and adjoining urban area generally demarcated by the Ring Road, Shahdara (DS) comprising the villages of Trans-Yamuna area or East Delhi, Narela (N) comprising villages of North Delhi, Palam South (PS) comprising villages of southern part West Delhi, Palam North (PN) comprising villages of northern part West Delhi, Mehrauli West (MW) comprising villages of South West Delhi and Mehrauli East (ME) comprising villages of South East Delhi.

The boundaries of these regions coincide with the land acquisition circles of Delhi Administration. The regions are shown in map no.

These regions with respect to important variables have been analysed cross-sectionally and temporally with a view to understand the patterns and trends in the land acquisition process over time and space.

**Land Acquired in Delhi**

Out of the total land of 3,66,990 acres (17,62,134 bighas) about 93,234 acres (4,47,672 bighas) were acquired between 1948 and 1989. The acquired land thus constituted about 25.4% of the total land. Out of the total acquired land of 4,47,672 bighas, about 3,36,565 bighas (75.2%) were acquired for the Plan development of Delhi (PDD) or for DDA whereas 1,11,107 bighas (27.8%) were acquired during the same period for non-plan purposes.

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1 **Land**: The unit of measurement for land taken in the study is 'bigha'. The relation of a bigha with yards, biswas, acres and hectares is as follows: 1 bigha = 20 biswas, 1 acre = 4 bighas and 16 biswas or 4840 sq. yards. 1 bigha = 1088 sq. yards. 1 hectare = 2.47 acres.
The above statistics show that a very large portion as much as 25% of the total area in Delhi has been acquired for urban purposes under Plan and non-plan schemes. The figure of 37,746 hectares of acquired land can be compared with the overall land utilization in Delhi given in table of Utilisation of land in Delhi on page 5.

The total acquired land with its breakup of plan and non-plan land is shown in the graph given below.

The land acquired was primarily rural land from the rural villages of Delhi and comprised of differential quality. It ranged from fertile agricultural fields to barren land. A small proportion of land acquired within the urban limits of Delhi was urban land acquired for public purpose.

**Total Acquired Land**

The total land acquired from 1948 to 1989 was 4,42,672 bighas out of which 3,36,565 bighas was acquired for the planned development of Delhi and the rest 1,11,107 bighas was acquired for the non-plan purposes. The Non-Plan land being almost making 25% of the total land
acquired. However, for correct comparison between the total plan and non-plan land components, the relevant period would be from 1959, the year when planned development effectively started.

During the period from 1959 to 1989, the total land acquired was 4,30,598 bighas out of which 94,033 bighas of land was acquired under non-plan schemes and 3,36,565 bighas under Plan schemes making Plan land about 78% of the total land. It means that even after formulating the Master Plan as much as 22% of the total land was acquired for non-plan purposes.

**Implications**

The implication of the above analysis is that the land acquisition that took place in Delhi was at quite a large scale affecting the various social and economic processes in Delhi. Thus without understanding the nature of such a process itself through which such a large scale land was acquired, it may not be possible to understand the urbanization of Delhi and its present economic and social structure that has emerged over time during the Planned Development of Delhi.

Another implication of above results is the 22% non-plan component of land acquired for non-plan purposes after envisaging and formulating the master plan of Delhi. It implies that the master plan as such was not exhaustive or it did not visualize the various possible uses of land which might have emerged as Delhi progressed towards its ideal of a planned metropolis. The non-plan uses were generally the exigencies of time and circumstances. These uses were not conceived in the overall framework of the master plan but emerged due to local needs or pressures.

However such a large component of non-plan land clearly indicates that either the master plan was not conceptually sound itself or it failed to capture the prospective changes that would take place with Delhi extending its urban limits. Thus the very basis of formulating Master Plan becomes questionable.

**Plan and Non-Plan acquired land**

From 1948 to 1989, the land has been acquired under two schemes viz. Planned Development of Delhi (PDD) or Plan schemes & Non-Plan schemes. Under Plan schemes the land was generally acquired for the DDA for the implementation of the Master Plan while under the Non-Plan schemes the land was acquired for various agencies generally governmental like
PWD, Flood Deptt., MCD, Education Deptt., Airport Authority etc. for uses such as roads, schools, hospitals, transmission stations, Najafgarh Drainage system etc. Whereas the land acquired under the PDD was for residential, commercial and recreational purposes, the land acquired for Non-Plan uses was generally confined to the basic infrastructural facilities like roads, schools, health centres etc.

It reflects upon the simplistic approach towards the formulation of the Master Plan which could not visualise the appropriate proportion of the basic infrastructural facilities in the overall plan of the metropolis. It also indicates that the Master Plan or its implementing agency DDA gave more importance to the residential and the commercial uses without assessing the related infrastructural facilities to such uses. Perhaps the master plan was too broad and general to ignore the relevant details of time and space. The 22% component also shows adhocism in the overall urban planning of the metropolis.

Ignoring important developmental schemes like Najafgarh drain, the re-modelling of which has affected large tracts of land in west and north-west Delhi in the overall Master Plan also reflects upon the formulation of the master plan itself. The Master Plan may have been well documented in a sense but its implementation in reality seems to have deviated to an extent to reflect upon its basic conceptual and practical framework.
Land Acquisition in Delhi from 1948 to 1989: A Temporal Analysis

The land acquisition over time has been examined as given below. The trends have been fitted to ascertain the direction of land acquisition over various time periods and coefficients of variation have been calculated to assess the extent of variation.

**Entire Period from 1948 to 1989**: The land was acquired in all these years from 1948 to 1989. The land acquired over these years ranged from 77 bighas in 1949 to 43,576 in 1988.

General Trend: Rising.

Mean = 10659

C.V = 101.39%

The land was acquired in increasing area over time with large variation among years.

[Ref: MAP 3.1 for Spatial Pattern of Total land acquired in Delhi from 1948 to 1989]
DELI: LAND ACQUIRED DURING 1948-89

LAND ACQUIRED (BIGHAS)
- BELOW 50
- 50 - 100
- 100 - 500
- 500 - 1000
- 1000 & ABOVE

MAP 3.1
Period from 1948 to 1958: Period prior to Planned Development: Land had been acquired even prior to the planned development of Delhi began. During this period the acquired land ranged from 76.59 bighas in 1949 to 5919.79 bighas in 1953.

Range of variation: 5919.79 - 76.59 = 5843.2

General Trend: Increasing

1959 to 1989: The period of planned development of Delhi: It is the period when the Planned Development of Delhi started and general notification u/s 4 was made in 1959. During this period the acquisition ranged from 501.34 bighas in 1959 to 43574.98 in 1988.

Range of variation: 43574.98 (1988) - 501.3 (1978) = 43073.68

General Trend: Constant

There have been much fluctuations in land acquisition though the overall trend remained constant over the period..
1959-69: The first decade of planned Development:

Range of variation: 37645 - 6100 = 31545, Average = 17963.10

General Trend: rising

The land during this period was not acquired in a uniform way. There were fluctuations though the general trend was rising and the yearly average was relatively very high.
1970-79: The second decade of planned development:

The range of variation: 13992 - 501 = 13491

Yearly Average = 6832.75

General Trend = almost constant.

The total land acquired during the second decade was distributed uniformly over years with a range of variation to the extent of 13491. The trend was almost constant with not a very high average.

1980-89: The third decade of planned Development:

Yearly Average: 16467.69

Range of Variation: 43576 - 955 = 42620

General Trend: Rising
The total land acquired during this decade has been the highest among all the decades. The average was also highest with large variation and the land was acquired with rising trend.

In 1984 the Land Acquisition Act was amended. Thus to capture the effects of amendments the decade 1980-89 has further been split into 1980-84 and 1985-89.
1980-84: The period immediate prior to amended Land Acquisition Act:

Yearly Average: 11913.42

Range of Variation: 17421 - 4183 = 13237

General Trend: Rising

The Average has been high with increasing trend.

1985-89: The period immediate after Amended Land Acquisition Act:

Average: 21021.95

Range of Variation: 43576 - 955 = 42621

General Trend: Rising

Maximum land acquired was during this period with highest average. The limits imposed by the amendments not only expedited the acquisition process but also forced the State to clear in 1986-87 the backlog of land notified U/s 4 as early as 1959.

[Ref: MAP 3.2 for Spatial Patterns of land acquired in Delhi from 1951 to 1989]
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MAP 3.2.
**Periodic Averages of Land Acquisition :- (Total Plan & Non-Plan)**

As the graph shows the least land was acquired during the non-plan period (1948-58). The highest average in case of total land, was in the first decade of 1959-69 while second decade of 1970-79 was slackening in respect of land acquisition and the third decade of 1980-89 with its second half underwent higher land acquisition.

However, in case of plan land, the acquisition of land was highest in the decade 1980-89 followed by 1959-69 and 1970-79. In respect of non-plan land the pattern of acquisition was similar to that of total land i.e. highest in 1959-69 followed by 1980-89 and 1970-79 with the difference that in this case the land acquired was higher in the first half of 1980-89 than the second half.

*In general, the land --- total, plan and non-plan --- acquired taken decade-wise declined from 1959-69 to 1970-79 and then increased in 1980-89 thus making half cycle with peaks in first and third decade and through in 1970-79.*
Implications

The above temporal analysis shows that the overall pattern of land acquisition was marked by substantive variation though the trend was increasing overtime. Whereas initially the land was acquired in large quantity, it substantially slowed down during the second decade and again increased in the 1980-89 when the amendments were made in the Land Acquisition Act.

It implies that the land was not acquired in a very planned way overtime. Perhaps with the inception of Master Plan the land was extensively notified and acquired in the first decade. However the intensity fell down substantially thereafter and the land acquisition remained in a low ebb almost for a decade from 1970 to 1979.

This may be attributed to factors like limited capacity of DDA to utilise the land already acquired in 1959-69 with the result of falling demand for land in 1970-79 or alternatively it could have been due to shortage of funds with the DDA or delay in formulating the detailed schemes at the zonal level within the conceptual framework of the Master Plan.

That is to say that either the acquired land in the first decade became in excessive supply vis-a-vis its demand or the DDA could not generate the real demand though under Master Plan
there was still a very large portion of land remaining to be acquired and developed. This is proved from the fact that almost 37% of the total land was acquired in the subsequent decade of 1980-89.

Thus the implication would be that in planning the urban development, the DDA could not plan out the acquisition of land in a rational way since with the increasing urbanization the opportunity cost of the land also rises.

In case of DDA, when the land was to be acquired at such a large scale, it would have become an important factor in expediting the urbanising process and thereby increasing the price of land or its opportunity cost by itself. Such effects should have been accordingly worked out to achieve the optimum. The given pattern and phases of acquisition of land do not seem to be as per the dictates of economic theory as the State Agency DDA might have paid more for the same land in term of its opportunity costs.

The non-plan land similarly declined in the second decade and rose in the third decade.

One important reason for larger land acquisition in 1980-89 was the amendments in land acquisition Act which prescribed the time limits to the acquisition process and much of the notified land had to be acquired lest it would have become time-barred. Thus a large tract had to be acquired for legal and administrative reasons rather to the requirements of planning and development.

If it was not wise to delay the acquisition to avoidable limits, it was not equally prudent to acquire land without corresponding real plans to utilise them profitably. Although such a step to effect savings in the overall expenditure on the acquisition of land would require deeper and further investigation of the economic forces of the cost and price of land for DDA, a very important point that emerges is the appropriate phasing of land acquisition in the overall development process of land itself in the cost efficient way since the demand for land created by the State in the market on a large scale and thereafter its supply in the market on a large scale would themselves affect the market forces to create a new equilibrium.
Beside the legal and administrative factor from 1984 onwards, another reason for increase in the non-plan land might have been the increase in Plan land itself.

The pattern shows that non-plan and plan land have similarly increased and decreased over decades. It may be due to the fact that acquisition of land for plan purposes increased the demand for the non-plan land since the Master Plan was not exhaustive and could have left many possible uses which would emerge in the overall development of the metropolis.

So wherever there might have been development of the land by the DDA, it correspondingly might have increased the demand for non-plan uses such as roads, schools, hospitals, electricity stations, other public utilities etc. or alternatively the development might have caused demand for public utilities at macro level such as electric substations, flyovers, airport etc. the planning of which was not conceived in the overall Master Plan.

**Total Plan and Non-Plan Land Over Time**

Prior to 1959, the total land was non-plan. From 1959 to 1989, the non-plan land generally varied with acquired plan-land. Only in the year 1959, 1960 & 1961, the non-plan land was larger than the planned land. It was perhaps due to the fact that idea of planning had already started in 1953 and may be certain schemes planned on a smaller scale and not yet the part of the Master
plan might have been formulated and the land acquisition for them started and got completed in these three initial years. Thereafter, the non-plan land has always remained a component of total land acquired implying that, in general, the non-plan uses kept on emerging alongwith the plan development of land in Delhi.
Temporal Analysis of Land Acquired: Delhi Regions

Total Land

From 1948 to 1989 the total land acquired has spread over space in all the directions with variation in its quantum. The maximum land has been acquired in Palam North with 93,424 bighas to minimum of 28,317 bighas in Delhi region. In absolute terms higher land acquisition has taken place in PN, ME, N & MW, whereas relatively lesser land acquisition has taken in other three regions of D, DS & PS. The graph depicts the relative position of absolute land acquired in the seven regions.

It shows that relatively the development through acquisition has taken place in south and north west of Delhi.

Regional Distribution of Land Over Time

By going through the graph of land acquired in Delhi regions over years from 1948 to 1989 one finds that land has not been acquired in these regions uniformly or in equal proportions. The regional distribution has been uneven in general.
Non-plan period (1948-1958)

During this period, the land was acquired only in Delhi region in most of the years. In all these years, the regional distribution over years has been varying. The pattern that seems to emerge is that with progression of years more and more regions were covered under land acquisition.

The plan period (1959-1989)

In general, land acquisition has varied among regions over years. However the variation among regions seemed to have increased over years. In the initial years, it was relatively uneven than in later years.

1959-1969: In the first decade the distribution was relatively uneven over the regions.

1970-1979: In the second decade not only the absolute quantity of land acquired over regions declined but the variation among regions became larger.

1980-89: In the third decade, absolute quantity increased and the variation among the regions became a little lesser. In the first half of decade the distribution of land acquired over regions was more uniform than in the second half. In the second half land was acquired in selective regions except the year 1988-89 when land was acquired in all the regions.

Plan and Non-Plan Land

Regionally, the plan and non-plan both types have been acquired in all the seven regions although not in same proportion. Except in PS, the proportion of plan land in all regions has been greater than the non-plan land. The non-plan proportion has been highest in PS (65%) followed by Delhi (36%) whereas it has been lowest in DS (13%) followed by ME(14%).

On the average, total land has been acquired above average in ME, MW, PN, N, whereas it has been acquired below average in Delhi, Shahadara and PS.
Land acquired in various regions during plan and non-plan period

Delhi Region

During non-plan period, land was acquired in almost all the years with a variation. During plan period, maximum plan and non-plan land was acquired in the first decade which declined substantially in subsequent decade.

DS Region

Land was acquired in almost all years during non-plan period. During plan period, the plan land was acquired generally in all three decades whereas the non-plan land was acquired in the beginning of first and third decade with negligible land during rest of time.

Mehrauli East Region

During non-plan period, land was acquired in large tracts in the year 1951, 1955 and 1958 with negligible land in other years. During plan period the plan land was acquired in the first decade and again substantially in the last year of third decade with negligible land in the rest of the years. The non-plan land was generally acquired in the beginning of the first decade.
MW Region

During non-plan period substantial land was acquired in 1956. The distribution of plan land has not been even over years. The substantial land was acquired in the first decade and in the last year of third decade. There was no land acquisition during the second decade. The non-Plan land was acquired generally during the first decade, that too not in large quantity.

N Region

During non-plan period, substantial land (2800 bighas) was acquired only in 1956. The land acquisition over years was not evenly distributed. It was almost negligible except in years 1954 and 1957. During plan period also, the distribution was not even. In general the land acquisition under plan was high in the first and last decade whereas it was low in the second decade. In case of non-plan, the land was acquired regularly though in low quantity except a few years in the second decade.

PS Region

The land acquisition during non-plan period was very low and uneven. The plan land, during plan period was distributed unevenly to an extreme extent. The total land was distributed just over 3-7 years. The Non-Plan land was relatively evenly distributed and took place in almost every year.

Implications

A general examination shows that the land acquisition among the regions and within each region over plan and non-plan regions was not uniformly distributed.

Growth Rates of Land Acquired in Delhi

The compound growth rates have been calculated of the total land acquired, Plan land and non-plan land over the total period, plan period and non-plan period in order to analyse the dynamics of the land acquisition process. The table and the graph show the results as follows. For the entire period the growth rate of total land acquired was only 6.44, whereas that of non-plan
land was 1.18. During the non-plan period, the total land which was acquired only under the non-Plan schemes was as high as 30.19.

During the plan period, i.e. from 1959-1989, interestingly the total land and non-plan land showed negative rates. The growth rate of plan land though positive was too low at 0.49, i.e. less than a half percent. The total land whereas showed negative growth over the plan period, within the plan period it showed positive growth only for the first decade and negative in the last two decades. In the first half of the third decade, the growth rate was positive whereas it became substantially negative during 1985-1989.

It implies that the growth of total land during the planned period was not only negative but fluctuated also. It increased in the first decade, declining in the second and third decade with decline becoming smaller in the third decade.

In case of non-plan land, the rate over entire period has been positive but this higher growth rate is attributed to only a very high growth rate during non-plan period.

During plan period, the growth was negative and in each decade and sub-period of plan period it remained negative. The growth rate of plan land over entire period was positive but too low. In the first decade it was as high as 38% but in subsequent two decades it became progressively negative. In the first sub-period of third period it was 22% whereas in the second sub-period it became -41%.

The above analysis shows that during the plan period the growth rate of planned land acquisition was positive but too low whereas the growth rate of non-plan and total land was negative. The growth rate of total land became negative due to the fact that plan land experienced positive growth only during first decade whereas it registered negative growth in subsequent decades and the growth rate of non-plan remained negative in all the three decades. Thus, the rate of acquiring land in general has been very slow and decade wise the rate fluctuated around the base line.
Growth Rates of Land Acquired in Delhi Regions (1948-1989)

The growth rates of various regions have been calculated for the overall period of 1948-1989 and those of plan period of 1959-1989, and non plan period of 1948-58. During the Non-Plan period there has been marked variation in the regional growth rates with only Delhi Region and Narela region experiencing positive growth rates while all other five regions experienced negative growth rates with Palam North as low as 58%.

During the plan period all the regions experienced negative growth rates with Delhi region having the lowest -17%. Narela and Palam South had maximum growth rates.

For the overall period of 1948-89 there has been variation in the growth rates of land acquired in various regions. While Delhi and Mehrauli West had negative growth rates, all others had positive growth rates with Narela at the highest.

The above analysis shows that for every period --- overall, plan or non-plan --- the growth rates among regions have varied. Interestingly during the plan period all the regions experienced -ve-growth rates implying that the rate at which the land was acquired during the plan-period declined progressively in absolute terms.

![Growth Rates of Land Acquired in Delhi Regions (1948-1989)](image-url)
Periodic Averages of Land Acquired in Delhi Regions

Not only growth rates of regions have varied over time but the average land acquired per year with reference to various periods has also varied among regions. In the non-plan period the land acquisition in all the regions has remained low generally below 500 bighas. In the overall period (48-89) land acquired per year has been more than 1000 bighas except in Delhi and Palam South. Among the regions it has varied from 700 bighas in Delhi to 2100 in Palam South.

In the plan period, the land acquired has fluctuated among the regions varying from about 800 bighas in Delhi to almost 3000 bighas in Palam North. In the regions of ME, MW, N and Palam North, it has been more than 2000 bighas per year. In the three decades of Plan Development, the variation among the regions has changed with average being highest in the first decade followed by third decade and second decade.

It implies that land acquisition took place at higher rates in first and third decade with substantially low in the second decade. Not only the general average followed this pattern but among the regions also, the averages generally were not uniformly distributed.

Regional or Spatial Analysis of Land Acquired

In the regional analysis, the total land, plan land and non-plan land have been analysed with respect to their distribution over geographical units i.e. regions and villages.

Total Land Acquired among regions

From 1948 to 1989 the land has been acquired in all the regions of Delhi. The area acquired however has not been same in all the regions. Maximum land has been acquired in PN and ME regions followed by N, MW, DS, PS and Delhi. Except Delhi which comprises the city and the adjacent land, almost every other region was yet to be developed into an urban region in 1948.

Thus, in absolute terms, the regions away from the city fell in the zone where land was acquired in large areas. The area acquired has ranged from 93,423 bighas in PN region to 28,316 bighas in Delhi region.
CV = 34.8%  (Total land)
CV = 46.9%  (Plan land)
CV = 35.1%  (Non-plan land)

Within a region the spatial unit is a village. On the average 1272 bighas were acquired in a village. Taking the distribution of acquired land over villages of whole Delhi, the coefficient of variation (CV) comes to be 145.6%.

\[
CV = \frac{1852.5}{1271.8} * 100 = 145.6\%
\]

**DL Region**

A total of 28,317 bighas of land has been acquired in Delhi region distributed over 14 villages

\[
CV = \frac{1828.8}{2022.6} * 100 = 90.4\%
\]

The CV shows that there has been high variation in the land acquisition within Delhi region. The range has varied from 7065 bighas in Basaidarapur to 1.87 bighas in Bagh Kare Khan.

**Non-plan** : Under non-plan schemes 10,300 bighas of land were acquired over the period from 1948 to 1989 distributed over 11 villages:

\[
CV = \frac{953.}{936.4} * 100 = 101.7\%
\]

\[CV = (\text{Std. Deviation/Mean}) \times 100\]
Plan: Under plan 18,016 bighas of land were acquired over the period from 1948 to 1989 distributed over 13 villages:

\[
\text{CV} = \frac{1271.8}{1385.8} \times 100 = 91.7\%
\]

In DL region, 63.6% of the total land was acquired under planned schemes. Spatially the land acquisition on the average was higher under the plan schemes with lesser variation than that under the non-plan schemes.
**DS Region**

A total of 59,823 bighas were acquired in DS region distributed over 46 villages. On the average 1273 bighas were acquired per village.

\[
CV = \frac{1573.3}{1272.9} \times 100 = 123.6\%
\]

There has been high variation among villages with range from 7.30 bighas in Mustafabad to 6,719 bighas in Mandawali Fazal Pur.

**Non-Plan**: Under non-plan, 7,780 bighas were acquired in 36 villages with an average of 216 bighas per village:

\[
CV = \frac{305.2}{216.1} \times 100 = 141.2\%
\]
Plan: Under plan schemes 52,043 bighas of land were acquired from 1948 to 1989 distributed over 37 villages with an average of 1406 bighas per village:

1555
CV = -------- * 100 = 110.6%
1406

In DS region, 87% of land was acquired under plan schemes. Spatially there was lesser variation under the plan schemes among villages with higher average land acquired per village than those under non-plan schemes.

ME Region

A total of 87100 bighas were acquired distributed over 49 villages with 1,777 bighas on an average per village:

2240.9
CV = -------- * 100 = 126%
1777.5
Non-plan: Under non-plan schemes, a total of 12,265 bighas were acquired distributed over 34 villages with an average of 361 bighas per village:

\[
CV = \frac{639.3}{360.7} \times 100 = 177.2\%
\]

Plan: Under plan schemes a total of 74,836 bighas were acquired distributed over 46 villages with an average of 1627 bighas per village:

\[
CV = \frac{2023.8}{1626.8} \times 100 = 124.4\%
\]

In ME region, 86% of land was acquired under plan schemes. Spatially, there was lesser variation under the plan schemes among villages with higher average land acquired per village than those under non-plan schemes.

MW Region

A total of 69,776 bighas of land were acquired distributed over 35 villages with an average 1994 bighas per village:
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\[
\frac{2297}{1993} \times 100 = 115.2\%
\]

Non-plan: Under non-plan scheme a total of 53,020 bighas were acquired distributed over 26 villages with an average of 2039 bighas per village:

\[
\frac{2153.4}{2039.2} \times 100 = 105.6\%
\]

In MW region, 76% of land was acquired under planned schemes. Spatially, there was lesser variation under the plan schemes among villages with higher average land acquired per village than those under non-plan schemes.

\[\text{LAND ACQUIRED IN MW REGION (1948-89)}\]

\[\text{BIGHAS (Thousands)}\]

0 2 4 6 8 10

\[\text{VILLAGES}\]

\[
\text{AREA}
\]

N Region

A total of 71,405 bighas of land were acquired distributed over 80 villages with an average of 892 bighas per village:
1528.5
CV = --------- * 100 = 171%
892.5

Non-plan: Under non-plan a total of 19,810 bighas of land were acquired distributed over 76 villages with an average of 261 bighas per village:

394.4
CV = --------- * 100 = 151%
260.6

Plan: Under plan scheme a total of 51,595 bighas were acquired distributed over 36 villages with an average of 1433 bighas per village:

1930.7
CV = --------- * 100 = 134.7%
1433.1

In N region, 72.2% land was acquired under plans schemes. Spatially, there was lesser variation among the villages with higher average of land per village under plan schemes than those under non-plan schemes.
A total of 93,423 bighas of land were acquired in the period from 1948 to 1989 distributed over 67 villages with an average of per village:
1950.7
\[ CV = \frac{447.2}{319.5} \times 100 = 139.9\% \]

*Non-plan*: Under non-plan schemes, a total of 19,493 bighas of land were acquired distributed over 60 villages with an average of 319 bighas per village:

1394.4
\[ CV = \frac{447.2}{319.5} \times 100 = 140\% \]

*Plan*: Under plan schemes, a total of 73,930 bighas of land were acquired distributed over 38 villages with an average of 1945 bighas per village:

2050.7
\[ CV = \frac{2050.7}{1945.5} \times 100 = 105\% \]

In PN region, 75% of the land was acquired under plan schemes. Spatially there was lesser variation among the villages with higher average land acquired per village under the plan schemes than those under non-plan schemes.
**PS Region**

A total of 27,826 bighas of land were acquired in the period from 1948 to 1989 distributed over 60 villages with an average of 630 bighas per village:

\[
CV = \frac{1267.8}{630.4} \times 100 = 201\%
\]

**Non-plan** : Under non-plan schemes, a total of 24,702 bighas of land were acquired distributed over 58 villages with an average of 426 bighas per village:

\[
CV = \frac{1141.3}{425.9} \times 100 = 268\%
\]
Plan: Under plan schemes, a total of 13,123 bighas of land were acquired distributed over 18 villages with an average of 729 bighas per village:

\[
CV = \frac{829.8}{729} \times 100 = 114\%
\]

In PS Region, 35% of land was acquired under plan schemes. Spatially, there was lesser variation among the villages under plan schemes with a higher average land acquired per village than those under the non-plan schemes.

Overall Spatial Analysis

In general, the land acquisition among the regions and among the villages within a region has experienced great variations. Spatially there was greater uniformity among the villages under plan schemes than those under the non-plan schemes. Similarly, except the Palam South region the absolute land acquired under the plan schemes was around 75% of the total land. The average land per village under the Plan schemes was greater than the non-plan schemes.
The implication is that over space the land under the plan schemes was acquired in greater quantity either in a region or in a village with lesser variation among villages than those under the non-plan schemes. In other words, the land acquired under the non-plan schemes was not only smaller in quantity but was distributed with greater variation over space.