

Public Intervention in the Land and Housing Market—A Case Study of Delhi

Dissertation submitted to the Jawaharlal Nehru University
in partial fulfilment of the requirements
for the award of the Degree of
MASTER OF PHILOSOPHY

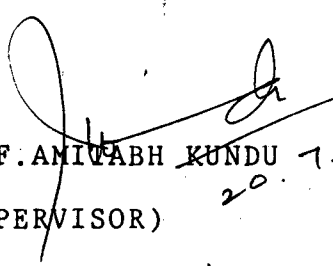
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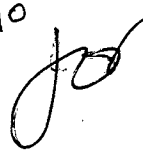
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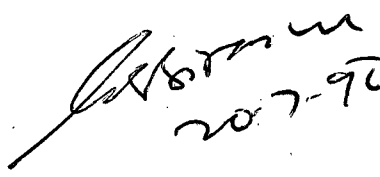


C E R T I F I C A T E

This is to certify that the dissertation entitled "PUBLIC INTERVENTION IN ^{the} LAND AND HOUSING MARKET - A CASE STUDY OF DELHI" submitted by Shri Somnath Basu in fulfilment of six credits out of the total of twenty four credits for the award of the Degree of Master of Philosophy (M.Phil) of the University is a bonafide work to the best of our knowledge and may be placed before the examiners for evaluation.


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(SOMNATH BASU)

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CHAPTER: 1

CHAPTER I

INTRODUCTION :

There is growing concern for the question of housing and shelter in different countries both belonging to the developed and developing world. Because of the very logic of the process of urbanisation resulting in concentration of population in limited space, problem of land and housing has emerged to be much more serious in the urban areas.

With the world population expected to cross six thousand million by the turn of the century, the urban population is expected to increase by 41.27% over the figure of 1980. Corresponding to this, the total population in South Asia has increased from 855 million to 1405 million over the period 1960 to 1980 registering a growth rate of 64.32% and is expected to be 2150 million by 2000 AD giving a growth rate of 53.02%. The urban population for this period has been increasing much faster by 125.81% (60-80) and is expected to reach 750 million by 2000 giving a growth rate of 133.33%.

According to 1981 census India's population had been 685 million and is estimated to be around 821 million in 1991. The population of Delhi urban agglomeration has been 6.22 million which consists of 5.73 million urban persons and 0.49 million rural persons. While the rural population has decreased continuou-

sly from 10.3% in 1971 to 7.27% in 1981, according to 1981 census Delhi's urban population has registered a growth rate of 57.09% over the same period of time. Delhi's share in the total urban population of the country has increased from 0.54% in 1961 to 0.84% in 1981, and has been forecasted to increase to 1.03% in 1991. Thus demographic expansion which is attracting large migrant population both in its formal and informal sector can be attributed to the growing economic importance of the capital¹. Over 1971-81 the migrant population has increased from 0.5 million to 1.2 million whereas natural growth has been estimated to be only by 0.043 million.

This evidently puts a major challenge of providing shelter, on the authorities. The urban development authorities have reached to this challenge through various policy measures. One of the major objectives of this land and housing policy has been to ensure social equity in the urban area, among different sections of the population. The functioning of the free market forces result in increasing of land value much beyond the reach of the poor. This often results in the poor being priced out in the city limits or

1. Industrial progress in Delhi has been remarkable during the period from 70-71 to 79-80 - a growth rate of 61.53% in the number of industrial units, 268.43% in industrial investments, 347.37% in industrial production and 74.47% in industrial employment.

being pushed into marginal lands. The basic purpose of public intervention in the land market in a 'socialistic pattern of Society' would therefore be to ensure access of the poor to land and adequate provision of land for basic services.

The purpose of the present study is to bring into disquisition apart from the performance of the public agencies, the salient features of the policy measures. Delhi has been selected as the area of study as it has experienced maximum public intervention and the Delhi Master Plan is considered as the forerunner for urban planning in the rest of the country.

The study is made in four sections. In the first section an introduction of Delhi's demographic and administrative features is given. In the second section an account of the development of the restrictive land market in Delhi is made. In this chapter the evolution of DDA in the context of urban land situation of the city is also discussed. In the third chapter a spatial and temporal analysis of the land market in Delhi is studied with respect to the national scenario. The modus operandi of functioning of the DDA in the land market in Delhi has been analysed critically. A temporal analysis of the auction prices of land has been attempted for different localities in Delhi to ascertain the trend.

In the fourth chapter the role of the DDA as a public agency in the housing market is evaluated with specific reference to its programme for EWS housing. The various schemes floated by the authority and their performance has been examined with some detail.

Impediments in regular provision of housing supply and role of financial institutions has been discussed. Finally a spatial analysis of the number of dwelling units for the EWS/Janta category has been analysed with cross-sectional data.

In the fifth chapter Delhi's land policy is studied, consequences of bulk acquisition and the methods of compensation, the determinants of land prices and the operation of the land and housing market in the light of the master plan has been analysed. The objectives was find out whether the objectives enunciated in the policy documents have actually been realistic through the implementations of the programmes. It attempts to decipher the mesh of socio-political and economic factors - the interplay of which determine the direction of the benefits disbursed through public policies.

Area of Study:

Delhi district was first constituted in 1819 comprising two parganas, Sonapat and Ballabgarh. In 1861, Sonapat was transferred to Rohtak district and a large part of Ballabgarh to Gurgaon district. The capital of British India was shifted from Calcutta to Delhi in 1912. In 1915, Shahdara town and some villages across Yamuna which were part of Ghaziabad Tehsil of Meerut district were incorporated into Delhi district. After independence, in 1951, Delhi acquired the status of a 'part C' state and was given a legislature and council of Ministers till 1956 when it was converted to a union territory and thus came under the direct supervision of the

President of India through the Delhi Administration headed by a Lt. Governor. In 1956, a Metropolitan Council was set up in Delhi which is still continuing.

Delhi tehsil was bifurcated into Delhi and Mehrauli Tahsil during 1961-71. Thus, the present union territory of Delhi is made of two tehsils consisting of 144 and 84 villages respectively. Apart from this, there are 25 towns in the union territory. They are 1) New Delhi Municipal Committee, 2) Delhi Cantonment 3) Delhi Municipal Committee (urban), 4) Sawepur, 5) Bhalasawa, Mahangirpur, 6) Kotla 7) Babarpur, 8) Gokalpur 9) Mandoli 10) Jaffarabad, 11) Roshanpur, 12) Nangolighat, 13) Sultanpur Majra 14) Nangloi Sayed, 15) Bindapur, 16) Narsir Pur, 17) Palam 18) Mahi Pappur, 19) Rajokri 20) Chattarpur, 21) Lado Sarai, 22) Tigri, 23) Deoli, 24) Molar Band 25) Pulpelhad.

Geographically Delhi stretches from $28^{\circ} 25' N$ and $27^{\circ} 50' NE$ to $28^{\circ} 53' N$ and $77^{\circ} 22' NE$ covering an area of 1483 sq. km. with a general slope from North to South with the height varying from 213 to 305 metres. Physically it has three broad divisions, 1) the low lying sandy Yamuna flood plain called Krodar which is subject to recurrent floods. 2) the ridge which enters the city from the South extends north easterly and encircles the city from the north, West and West, and 3) Finally the plain popularly known as the Bhangar.

The area not available for cultivation is decreasing over the years with more and more land being converted to urban use.

The net sown area has also ^{decreased} between 1971 as 1981. The total forest area estimated in the year 1979-80 was 1434 hectore. The major portion of the reserve forest of the Union Territory is located in New Delhi Ridge, Opposite Rashtrapati Bhawan, in the back of the Birla mandir. The permanent vegetation of the ridge is mostly of thorny ~~tree~~ species and few scrub species.

CHAPTER: 2

* CHAPTER II

History of A Restricted Urban Land Market in Delhi And The Evolution of DDA

After independence the capital city of Delhi inherited a land market characterised by a dual system of land supply and management¹. The colonial capital of New Delhi experienced stringent public control while a free market for land owning individuals existed in the old city of Shahjahanabad and its extensions. Present day market characteristics and administrative practices are, to a certain extent, a part of the colonial legacy.

The low Income Group (L.I.C.) as we envisage it today has been historically priced out of the land market. Before independence, the overcrowded high density old city areas or low rent houses and government tenements were the only places where the LIC found a shelter. Servant quarters with bungalows housed a large chunk of Economically weaker section (E.W.S.) of the society. Apart from this there were the construction labourer's camps. These were initially set up for the migrating workers for construction purposes in Delhi, but subsequently they became the shelter for any EWS migrating into Delhi. These settlements, over a period of time,

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1. Chatterjee Banashree (1987); Land Supply for Low Income Housing in Delhi, Seminar on Legal and Illegal Land Supply, Institute for Housing Studies, Rotterdam.

gained legitimacy because they mostly occupied government spaces and no viable alternative site could be provided to them.

Pre-independence Delhi experienced public intervention in the form of collection of revenues, municipal scavenging and regulation of building bye-laws. Local governments existed in the form of NDMC and MCD with jurisdiction over New Delhi and the remaining part of Delhi respectively. In 1937 the Delhi Improvement Trust (DIT) was created to overview planned development of the NDMC area and regulate the land market. Land price of the residential plots were so high that the weaker section of the society could not afford them. Land in Delhi before independence can be put into three categories based on ownership (a) owned by public section; (b) by the private developers; (c) unauthorised colonies.

Land in the city centre; Immediately after independence the socio-economic character of Delhi experienced a drastic change. It had suddenly become the new seat of administration and commerce in the country. Demand for shelter and land accordingly emerged from various quarters, namely the government employees, the political refugees, the incremental migrants (due to new job opportunities created), etc. The government at that point of time identified two target groups - the political refugees and the government employees for immediate provision of housing. Provision of shelter to the political refugees were in the form of hutments and barracks. While for the government employees, these were in the form of low and medium density two storied housing schemes. The government was using both

its own land as well as land newly acquired in South of Delhi for housing purposes. Studies on the government's performance revealed it could meet only 50% of the demand for shelter. The government's failure in the initial stages has been attributed to two reasons:

1. The importance of land acquisition and supply was superseded by the shelter projects and,
2. the government insisted on high standard development posing serious problems of finance due to the high cost for long time taken in completing the projects. The DIT's role in this entire process was more of an observer because its powers were limited to development of private residential areas.

Illegal appropriation and construction on vacant land also the noticeable feature during the fifties. Poor migrants coming from all over the country settled in different parts of the city mostly in the marginal lands and public places kept vacant with a purpose. But they preferred the location in the central part of the city because these areas are nearer to their place of employment.

Land in the periphery: From 1947 onwards the public sector due to its inability to provide shelter to the increasing population encouraged co-operative housing. Unfortunately, however, the co-operative societies having the prerogative to decide plot sizes within the ceiling limit of 1220 sq.yards (relaxable to 2000 sq. yards under certain circumstances) catered mostly the higher income groups. Households in lower income group generally priced out of the land market. As a result of this the government had to ban

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registration of additional societies in 1961 .

The private developers emerged as the most important actors of the land market during the period of functioning of DIT. Speculation on land was at its peak and large chunks of land were brought into urban use from agriculture in the city peripheries. Subdivision and sale of agricultural land according to layouts approved by DIT proved to be an extremely profitable business and the developers often acted as middleman (with nominal investment) in the entire process reaping large sums of money organising land transactions.

The financial operations involved in these transactions were also unique. Advance payment was taken from the prospective buyers for the development of the agricultural land. Thereafter major part of the land thus developed was released in the first stage with a profit margin ranging from 30% to 40%. In the next stage the remaining land was thereafter released at a much higher profit margin.³

It is imperative that the higher income group alone could afford land under such circumstances. As a result of non-availability of house in the city at approachable prices for the LIGs and EWS population unauthorised colonies emerged in the urban peripheries. Here land sub-divisions were illegal because they

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2. Eharati, K (1986); Housing sub-systems in Delhi: Development and Policy Intervention, SPA. Planning Thesis, New Delhi.
 3. Chatterjee Banashree (1987); Land Supply for Low Income Housing in Delhi, Seminar on Legal and Illegal Land Supply, Institute for Housing Studies, Rotterdam.

were not approved by the DIT and consequently the DIT did not extend municipal services to those lands. But sale of land was legal under the 'Transfer of Property Act' of 1882. Thus by 1961, there were 110 unauthorised colonies accommodating 9.5% of Delhi's total urban population⁴. The Government never showed any serious political will to stop this mode of settlement principally because it has no viable alternative to house this population.

EMERGENCE OF DDA

By the mid-fifties it was realised that major public intervention was obligatory to clamp down the haphazard growth in Delhi. It was impossible to tackle the shelter problem if the private developers and speculators were allowed to operate in a free market. Public holding of land to create a land bank and ensure smooth land supply was contemplated. Removing of disparity in the land holding, a policy for socialisation of urban land was aimed at and a statutory body called Delhi Development Authority (DDA) was created with major powers to operate in the areas of urban planning and development under the DDA act of 1957.

In 1961, the Town Planning Organisation set up by the Government of India in 1955 with the assistance of the Ford Foundation prepared the Draft Master Plan (DMP) for Delhi with a 20 years (1961-81) perspective. The area covered the entire union territory of Delhi and also the six urban centres of Loni and Ghaziabad of UP and Faridabad, Ballabgarh, Bahadurgarh and Gurgaon in Haryana.

4. Sundaram and Gambhir (1990); Improving metropolitan living environments through strengthening Housing Sector activities UNCRD, Niigoya, Japan.

The total area of DMP was about 2072 sq. km. (800 sq. miles).

The criteria used for delineating the metro area were certain indices of interaction such as:

- i) movement of goods.
- ii) movement of people in the process of distribution, and
- iii) communication to the central city for work.

Some of the planning considerations were to

- i) redistribute urban population and labour force to adjoining towns to check congestion in the central city and
- ii) limit the extending of metropolitan area to cut down the cost of urban infrastructure for the development of adjacent town⁵.

The Local Government Scenario:

The Union Territory of Delhi is divided into three local government (municipal) jurisdiction, of which the largest in area is the Municipal Corporation of Delhi or MCD which is also the only elected authority within Delhi. The rest of the territory (wholly urban) is shared between New Delhi Municipal Committee or NDMC and the Cantonment Board, Delhi (Cantt.)

Due to the absence of a state government in Delhi the MCD has a large number of functions. Some of the important ones may be summed up as follows:

- (i) providing running water to hospitals,
- (ii) providing civic services to rural areas,

5. Delhi Development Authority (1962) Master Plan for Delhi.

- iii) bulk water supply,
- iv) trunk sewerage and electricity generation for the entire territory,
- v) fire service,
- vi) collection of territory-wide terminal tax which is eventually shared by all three local government jurisdictions, etc. In many areas, the function of MCD, Delhi Administration and the Central Government overlap, e.g. hospital services are provided by all three.

NDMC is a wholly nominated body with an official president, to provide civic services to the central government townships, housing the Central Secretariat and maintaining the Rashtrapati Bhawan, Foreign Embassies and Missions, Quarters of Central Ministeries, other government servants and government offices. The Cantonment Board has been created to provide civic services to the civilian population in a defence township.

Creation of the Metro Authorities :

The setting up of D.D.A may be attributed to rapidly growing population in Delhi which had far outgrown the organizational capacity of the Delhi Improvement Trust. The Trust was set up in 1937 to tackle the problem of overcrowding and Slums. In 1951, a committee set up by the Government (under G.D. Birla) submitted a report which considered the preparation of a Master Plan as a prerequisite for proper development of the city and its hinterland and recommended the setting up of a single planning and controlling authority for the development of urban Delhi.

As a short term measure, the Central Government first issued the Delhi Development (Provisional Authority) (DPDA) Ordinance for preventing unauthorised construction of houses. This was followed by the Delhi (Control of Building Operations) Act which lasted upto 31st December 1957.

This legislation empowered DPDA to declare any area within Delhi as 'controlled area', but its functions were only of a limited and transitional nature largely confined to preventing ha-phazard construction with the area of its perview.

Along with DPDA, the Government also set up the Town Planning Organisation (T.P.O) which, with the help of consultants from the Ford Foundation, prepared a detailed plan for the development of Delhi called the Interim General Plan. Accordingly, in 1957, the Central Government came up with the Delhi Development Bill to replace the Delhi (Control of Building Operations) Act of 1955 and Delhi Improvement Trust Act of 1937. The activities of DPDA were confined only to those declared as 'development areas' by the Central Government in consultation with the Authority and the DMC. The Delhi Development Act 1957 was finally passed on December 12, 1957 and was brought into force from December 30, 1957.

The bill was referred to a joint committee of the Parliament where several members of the lower house noticed their objection to a separate development authority. Mr. B.N. Daya, Minister of State for Home Affairs, who piloted the bills gave the following

line of reasoning in support of a separate authority: As the development of Delhi required large sums of money, the work of the corporation would be fairly heavy and manifold. Hence it should not be overburdened with the task of overall development of Delhi. The municipal corporation will have the authority to develop certain areas of its jurisdictions while the development authority will identify certain "development areas" in consultation with the corporation. Finally, the development authority is to be a temporary authority, to be wound up after it completes its task⁶.

The task of the Delhi Development Authority as laid down by the Delhi Development Act, 1957, (Section 6) are as follows:

The objective of the authority will be to promote and secure the development of Delhi according to the master plan. The authority would thus be empowered to hold, manage and dispose of land and other property, to carry out building, engineering and mining operations, execute works regarding supply of water and electricity, sewage disposal and other services necessary for development.

Other sections provided the guidelines for specific activities to be carried out by DDA.

6. Organising Metropolitan Development - 'B' Chattopadhaya and 'A' Dutta.

These activities are:

- i) carry out civic survey and prepare a Master Plan,
- ii) to prepare Zonal Development Plans ✓
- iii) to implement the plans, and
- iv) to develop land and provide the servicing of such land.

Thus, the primary function of the D.D.A was the preparation of Master Plan and its implementation with the approval of the Central Government and Urban Land Management.

CHAPTER:3

CHAPTER III

The Urban Land Policy - A Critical Analysis

The urban land policy of DDA is also known as the "Scheme of acquisition, development and disposal of land". The scheme was adopted for two purposes, one, to stop speculation of land through acquisition of vacant land and two, to supply a minimum of 5000 plots per year in the land market, to cater to the increasing demand for land. The objective of urban land policy was to ensure supply of serviced land ensuring the following:

- a) land to be supplied in adequate quantity,
- b) at the right place where development is to take place,
- c) at the right time and
- d) at the right price.

It was decided that land would be auctioned to the MIG and allotted to the MIG and LIG in the ratio of 20:30:50. The earning from the auction was supposed to ^{be} diverted to subsidise the LIG and MIG houses¹. DDA offers subsidy of two types (1) direct subsidy- whereby the cost of the land is subsidised through reduction in the cost of land development and administrative charges.

1. Hawland, Marie (1975); Delhi's Large Scale Land Acquisition Development and Disposal Policy: An appraisal, Urban and Rural Planning Thought. Vo; XVII No. 1, Jan. 1975.

(ii) indirect subsidy- whereby lands sold in hire-purchase basis and the time period for payment of price is very long in favour of the buyer². Under this scheme land was to be leased and not sold. These ensured an earning of an annual ground rent of 2.5%. In case of resale of plot the allottee is barred from applying for a plot or house for the next 10 years. Any transaction of land would involve a payment of 50% of the unearned increment of the land value to the DDA.

Developed land was to be allotted to institutions and individuals while undeveloped land was allotted to co-operative societies. Construction is to be made on allotted land within a period of 3 years. The ceiling on the size of residential plot was fixed at 800 sq. yards and for the housing societies at 12000 sq.yrds. As per the land policy the DDA allotted land to people in the following categories; a) individuals whose land has been acquired, b) for the LIG, c) for the industries transferred from the existing localities or for industries to be set up in non-conforming areas. and d) for housing co-operative societies. Apart from this, land is also auctioned for the higher income groups. This land policy has been amended twice, in 1967 and 1970. The amendments made were as follows: a) introduction of allotment of land to the MIG - housings having an annual income between Rs.7200 & Rs18,000 per annum, b) Fixation of land ceiling at 125 sq. yards, c) reservation

2. Moitra, Sipra (1990); DDA and the housing scenario in Delhi- the controversial role, Paper presented in CSR Seminar, JNU.

of land for members of Parliament (5%), salaried class (50%), scheduled class and tribes (15%), widows and dependents of defence personnels/service personnels (15%) and d) allotment of land to co-operatives for group housings and not for plotted housings³.

Overiewing the "land policy" it may be concluded that the basic purpose of the authority had been to ensure timely supply of adequate land to the land market through bulk acquisition of land. In this context, it is to be clarified that the concern of the development authority has been firstly to supply land to the beneficiary (urban landless), secondly, to ensure whether the individuals whose land is being acquired is fairly compensated. At this juncture, a fair pricing policy keeping into consideration the relevant indicators of land price is warranted. In the following section, this issue has been analysed.

CRITICISM OF THE DDA :

DDA has been criticised for deviating from the onus of execution of the master plan and land development to other activities such as housing, slum clearance, maintenance of the ISBT and running the Delhi State Lottery. It is also been noted that DDA's role as an apex body divested with the charge of coordinating multiagencies to improve urban infrastructure has no operational specificity.

3. Jha, Gangadhar (1983); Land Nationalisation in Delhi - a policy analysis, Nagarlok April-June (1983).

It is unclear as to how even the Lt. Governor of Delhi would organize such a coordination of multiagencies' when the civic authorities in their individual capacity have direct dealing with the central government. The DDA, on one hand, is overburdened with numerous functions and finds it difficult to integrate the civic authorities for normal operations and on the other hand fails to execute its obligations. A very alarming fact pointed out by the EC of the Seventh Lok Sabha is that there is no authentic data on allotment of serviced land which makes meaningful evaluation of DDA's performance impossible. Two important components of Delhi's land policy have been chosen for evaluation in the following section (i) the levels of development of the virgin land in different localities and (ii) the compensations.

a) Land acquisition^{ti} and infrastructure:

DDA has so far acquired 60,000 acres (approx.) of agricultural land⁴. The purpose of acquiring land (now urban) was obviously to put to urban use which would include provision of infrastructure for urban habitation. An attempt has been made in this section to assess the acquired land in terms of existing infrastructure in the Delhi Urban villages.

For this exercise, aggregate data on land acquired in 157 urban villages over the period 1947-89 has been taken into consideration.

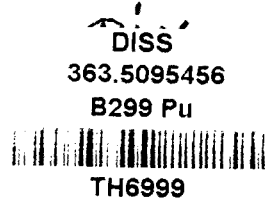
4. Mishra B. (1986); Public Intervention and Urban Land Management, Habitat International, Vol. 10, No. 112.

The proportion of area of land acquired for every village to the area of land put to non-urban use in that village is calculated. The proportion would reflect the acquired land per unit of non-urban land. The proportion has been taken as the dependant variable in the multiple regression model with eight exogenous variables . These are (i) density of the village, (ii) educational facilities available, (iii) medical facilities available , (iv) water supply in the village, (v) distance of the village from the nearest town. (vi) percentage of non-cultivated area of the village (vii) percentage of non-agricultural workforce to the total work force of the village, (viii) the other amenities in the village.

Nature of Data: Data on land acquisition was obtained from the work of Mr. Vijay Singh Baneswar -- 'Planned Urban and Land Development in Metropolitan City - a ^tspacial analysis of the Land Acquisition Process in Delhi and its Socio-Economic Implitations. Aggregate data of land acquired for every urban village is acquired from here.

TH-6999

Data on infrastructure and the land use of the villages has been collected from the village and town directory of the census volume for Delhi Union Territory for the year 1981 (Part 13, Vol.5). The dependant variable, as has been mentioned above, is the proportion of land acquired to the total cultivated land. The independent variables are the infrastructures which has been assigned weightages as appended in the annexure. All infrastructures excepting other amenities were weighted and the composite value for each village were considered. The variable 'other amenities' included;



i) newspaper, ii) motor-cycle/scooter, iii) car/jeep, iv) tractors. The number of these amenities available in each village were given. Each one of them has been weighted and then divided by the total population of the village. In case of the remaining infrastructures, the type of facility available in a village was given which are duly weighted. In case of education, a college (graduate level) has been given the maximum weightage, whereas minimum weightage has been given to a training school. In case of medical facility, a hospital, a dispensary/health centre, a registered doctor/maternity and child welfare centre and the various family planning/health centres were considered weighing them on that order of diminishing importance while considering drinking water facilities, tap water was considered much more important than other sources in this category. Tubewell with electricity and government canals were weighted above well with electricity, and tanks. While considering the sources of irrigation, Tubewells or wells without electricity were considered least important in this category. A detailed account of this is appended to the annexure.

Methodology: A multiple regression was run with the variables discussed above. A step-wise (regression) method adopted in this study automatically selects the explanatory variable which has the highest simple correlation with the dependant variable. Thereafter, the variable which explains the largest percentage of the unexplained variation is included in the model. The execution of the model can be terminated at a stage when the value of R^2 is considered adequate or until value of R^2 keeps increasing.

In multiple regression the relationship between the dependent variable (Y) and a number of independent variables (x_1, x_2, x_3, \dots) are studied. The model is expressed as follows:

$$Y = a + b_1 x_{1i} + b_2 x_{2i} + \dots + b_k x_{ki} + U_i$$

$i = 1, 2, 3, \dots, n$ and U_i the error term.

ANALYSIS : The variable "percentage of non-cultivated area" has the highest simple correlation with the dependent variable. A moderately high value of adjusted R square (.301) and a 'F' value of 68.7 significant at .001 percent level indicates that the result has statistical validity.

This implies that the villages where land is acquired in big scale are those where non-agricultural activities are well developed. Agricultural operation in these areas could be low because of alternative non-agricultural opportunities or speculative nature. Again a very high co-efficient of variation of the dependent variable viz. proportion of acquired land to non-urban land (193% approx.) indicates that the degree of land acquisition has been varied in the urban periphery (villages) and has taken place along selected direction.

The second variable to be entered in the model is "density" whereby the adjusted R value increases to .372 with a significant F value of 41.8. This reinforces the earlier finding that Land acquisition has taken place in localities where non-agricultural operations are high, that generally results in high density of population. The later, however, does not imply high level of

infrastructure.

The third variable to be entered is 'other amenities'. The value of adjusted R squared increases to .367 with a significant F value of 31.48. Amenities considered under this variable are newspaper, motorcycle/scooter, car/geep and tractor. These infrastructures may be considered mobile and 'footloose' in nature. Tractors are characteristics of agricultural areas and hence receives lowest weightage while motorcycles, cars and newspapers which are more of urban amenities are given higher weightages in that order. This indicates that land acquisition is high in villages that have the amenities that are mobile in nature.

The fourth variable entered in the regression is 'distance from the nearest town'. The value of adjusted R square increases to .385 with a significant F value of 25.6. The fifth variable entered is 'The percentage of non-agricultural workforce (F value of 21.35 is obtained). The value of adjusted R square decreases on entry of a sixth variable, and therefore the stepwise multiple regression is terminated at this juncture.

It is interesting to note that acquisition of land is not necessarily high in localities that are close to the city periphery. This is contrary to the general expectation. This can, however, be easily explained in terms of connectivity of certain localities through rail or road linkages and several other factors. What emerges quite sharply is that is not the distance from the city but the level of non-agricultural activity, speculation in land,

and infrastructural characteristics that determines the actual acquisition.

The fifth variable entered in this model confirms this result. Variables related to services such as health, education and water supply proved to be insignificant characteristics of acquired land. While amenities such as newspaper, car, scooter, mobiles characterised areas acquired. Hence it may be inferred that mobile services are available in areas where land acquisition has taken place but more valuable services such as health, water supply and education facility are a distant proposition.

Land price and infrastructure:

Land price is determined by (a) site specific characteristics (physical) (b) Neighbourhood Qualities (amenities) and (c) Access characteristics (R. Mohan '82). In Chapter II land price (auction) of Delhi within urbanisable limits has been discussed. It was argued that apart from neighbourhood qualities and access characteristics - social and environmental factors influence land prices. In case of a multiple core city like Delhi, social and environment factors becomes important because near homogeneity of access characteristics (to any one of the many CSDs) makes such aspects important determinants of a attractiveness of locations.

Before discussing the exercise examining effect of infrastructure of market values, the process of land acquisition and payment of compensation may be considered in detail.

Compensation for acquisition is made on the basis of market price ascertainment by the court/land acquiring authority. A solatium interest of 30% on the market price of the land is paid in Delhi. An case of DDA the market price has been extremely low ranging from 50 paise/square yard to Rs.22 sq. yards, between 1959 and 1989. After 1984 a "fair price" of Rs.65 lakhs/acre has been fixed for land to be notified for acquisition. This has also been determined arbitrarily without taking into consideration socio-economic parameters. The existing market price has also not been given any consideration in determining the amount of compensation.

In chapter IV a temporal analysis of land prices for land auctioned in Delhi was attempted. Here, a temporal analysis of land price on market value of land ascertained for compensation is done. Average market value of land per Bigha is considered seperately for seven regions in Delhi union territory namely - Delhi city, Narela, Shahdara, Palam North, Palam South, Mehrauli East and Mehrauli West. An aggregated analysis has also been attempted for the Union Territory by combining the figures of the seven regions. A simple regression model is fitted as follows:

$$Y = a + bt \quad \text{where } Y \text{ represents land prices;} \\ \text{and } t \text{ years;}$$

a is any constant and b is the absolute growth in land prices.

While considering Delhi Union Territory it was found that the constant is high and negetive (-10648.9) and the increase in land prices has been 199.88 units per year implying very low average market value in the beginning and a slow increase over the years.

The absolute growth has been the highest in case of Delhi region within Delhi Union Territory (502.52); but the value of the constant i.e. the initial market value has been the lowest (-77805.4). The initial market value has, however, been the highest in Mehrauli East (-8257) followed by Mehrauli West (-8272) but growth in both cases has been low (around 150). Infact for the seven regions considered a high increase in land value seems to be associated with a low base and vice-versa. This is in confirmity with the general expectation that land value will grow in less developed areas.

Apart from the fact that has been unfair to the land-owners of prime land, there are other implications of inadequate compensation rates. Due to the large hiatus in public sector and free market land price private developers have easily brought out the virgin land in the periphery with speculative motive.

It may be argued that the conversion of agricultural land to urban use will not increase its value instantaneously or grow at a very fast rate in the beginning. The value of the new urban land will depend more on its possible future uses rather than current uses. When a virgin land is being transformed, its price will be determined by the use to which it is put.

The last question to be investigated in this chapter is what determines its compensation price given to the farmers. It is evident that the price of agricultural land varies depending on its location, accessibility, soil type and availability of infrastructural facility. When agricultural land is converted to urban use its price depends on, besides accessibility and infrastructural facilities, the use to which it is put. It was therefore relevent to enquire

if the compensation paid has any bearing on these factors.

In order to access this a correlation matrix was obtained showing the Pearson's coefficient of correlation between land price and all the explanatory variables incorporated in the model to explain the variations in land acquisition.

In this exercise it was observed that land price has in most cases negative and in a few cases weakly positive correlation. Only two variables namely 'distance from the nearest town' and 'non-agricultural work force' had weak positive correlation. The remaining variables showed negative correlation. It can therefore be concluded that while determining land prices no economic as well as infrastructural variables has been taken into consideration.

It is obvious that the price for compensation have been decided based on some official procedures and norms that have no bearing on infrastructural and economic conditions at the local level.

CHAPTER: 4

CHAPTER IV

Land Price Situation in Delhi - Spatial and Temporal Analysis

This chapter brings into disquisition the land price trends - spatial and temporal - in Delhi. The national capital has the distinction of having maximum public interference in the land market and the DDA, the apex body entrusted with the obligation of execution of the master plan ('61-'81) along with land development in the union territory, is sometimes cited as a model for development authorities for other urban centres¹.

Yet Delhi has witnessed major aberrations in the area of land management consequent to which a land market highly speculative in nature have emerged since the question can be raised in two levels, firstly DDA's role in regulating the land market i.e. how DDA operated and secondly, the land-price scenario as it has evolved and as it is presently.

Determinants of land price has been discussed in the preceding chapter. When the role of land prices in the allocation and distribution of urban activities has been examined. In this chapter an attempt has been made to decipher the factors that explain the spatial and temporal variation in land prices in Delhi.

1. Mishra, B. (1986); Public Intervention and Urban Land Management, Habitat International, Vol. 10, No. 112.

The Case of Public Intervention:

The most common form of public intervention in urban land is the acquisition of land for land use which is subsequently developed and disposed other practices are zoning, imposing land use and density regulations and building codes in case of Delhi the public intervention was envisaged through a policy of bulk acquisition^{of} of land to facilitate regular supply of developed land.

In practice, however, supply side bottle necks were created whereby speculation on land increased considerably. It has been pointed out that the land policy adopted by DDA (lacked in insight and the implementation procedures were away from the formulated policy perspectives. In fact, DDA actually notified more land for acquisition than what it could develop. Although the DDA Act of 1957 empowered the authority to acquire only the amount of land which it could develop (Mishra 1986). As a result of this official land acquisition policy, no private developers were allowed to operate legally chunks of land, therefore remained frozen in the land market waiting to be developed by the public authority. This resulted in an artificial scarcity of land.

The DDA disposes land in two different ways. One through changing predetermined prices for allotment to socially desired sections of population and two, through auctioning of land of the higher income groups. (HIGs).

The Lt. Governor of Delhi is vested with full powers for allotment of land at predetermined rates, in consultation with

the financial advisor of Delhi Administration under rule 6 of the DDA (disposal of developed land) rule, 1981². The beneficiaries of allotment of required land at pre-determined rates would be as follows: a) individuals whose land has been acquired since first January, 1961 (size of the residential plot to be allotted is determined by the administration); b) individuals of the low or middle income groups (i) who are tenants in the building in an area where slum clearance order under the slum clearance Act has been served. (ii) who in a slum/congested area, own land measuring less than 67 sq.metres; c) individuals other than those specified under (a) & (b) belonging to LIG and MIG by draw of lots conducted by land allotment advisory committee. d) persons belonging to SC, ST, widows of defence personnel killed in action, ex-servicemen, physically handicapped persons under Rule 13 of DA (Disposal of Developed Nazul Land) Rules 1981. e) Industrialists or occupants of warehouses whose industries or warehouses are to be shifted from non-conforming areas to areas conforming under the master plan. f) to co-operative housing societies, co-operative group housing societies, consumer co-operative societies, and co-operative societies of industrialists on 'first come first serve' basis.

Procedures for Computing the Pre-determined Rates :

Under rule 2(1) of the DDA (Disposal of Developed Nazul Land) Rules 1981, "predetermined rates has been defined as the rates of premium chargeable from different categories of person and determined by notification from time to time, by the Central Government". Predetermined rates takes the following factors into

2. Information obtained from the Office of Land Commissioner.

consideration: a) cost of acquisition; for the Delhi Administration it comprises the compensation (including the estimated enhancement ordered by the court) paid to the persons whose land has been acquired plus the administrative charges incurred by the Land and Building Department of DDA and the Land Acquisition Collector, b) Cost of land Development: This is calculated by the Engineering Department on the basis of "Delhi Schedule of rates, cost index, departmental charges, administrative charges and interest charges, etc. e) in addition to these charges for effecting beautification, construction of zonal nodes and urban village re-development, etc. are also added to the development cost. The remunerative areas for the purpose of fixation of predetermined rates for the locality is taken as 50% of the gross area of the schemes. f) Additional charges use and occupation are added to the plots of various sizes. Till date for developed residential plots, this rate for the first 167 sq.mts. (200 sq. yards) is Rs 3.60 per sq. mts. For every additional 167 sq.mts. the rate will increase by Rs1.20 as per the guideline effective from 1.4.1985. The difference in rates between LIG and MIG is calculated by adding 10% of the cost to the MIG and reducing 5% of the cost for the LIG.

In case of Rohini Scheme which has been designed to serve the economically weaker sections particularly the following changes were incorporated.

a) a cost of development of the green area in the master plan was registered at Rs 1.20/- sq. mts for the gross area.

b) 47.36% of the gross area of the scheme as against 50% in the general case was considered as the remunerative area.

c) The additional charge for use and occupation is levied at Rs.3.60 per sq. mts. for the net plotted area

d) The general pre-determined rate calculated on the above basis on the net remunerative area is spread in the ratio 1:2:3 for residential, industrial, commercial plots to subsidise the rate of the residential area in favour of the EWS.

Reserve Rates for Auction of Residential Plots:

Reserved rates were fixed previously by enhancing 100% increase over the pre-determined rates of MIG plots in colonies pertaining to South Delhi e.g. Safdarjung Enclave, Friends Colony, East of Kailash etc. For other areas an enhancement of 10% over the MIG plots were registered. The rates were then rounded up to the next fifty rupees. After September 1985 a revision to the above said rate was made as these rates were much below the prevailing market prices. It was decided that the average auction price of the preceding year would form the basis of the reserve price, with a deduction of 25% to check steep price rises. Individual cases were, however, to be taken into consideration on the basis of their merits and demerits.

Pre-determined rates for co-operative societies:

Co-operative societies registered under the Delhi Co-opera-

tive Societies Act 1972., specified in Rule (vi), for bonafide members. For fixation of pre-determined rates of land allotted to the Group Housing Co-operative Societies for residential purposes the following factors are taken into consideration: a) Cost of acquisition, b) Cost of Development of Land, c) Beautification Charges, d) Construction of zonal roads, e) urban redevelopment charge, f) cost of development of Master Plan Green at the Rate of Rs.1.20/- per sq. mts. of gross area, this rate is revised from time to time, g) generally the size of the plot allotted to co-operative societies is one acre. The remunerative area for the fixation of predetermined rates is taken as 60% of the gross area of the allotted land, h) the additional charge for use and occupation is added at the rate of Rs.3.60 per sq. mts. If the net area (i) Equalisation charges for South North and West Delhi are fixed to equalise the extra cost incurred in East Delhi and other remote areas for providing basic services. The rates are as follows: a) South Delhi Rs.50 per sq. mts. b) North and West Delhi Rs.25/- per sq. mtrs.

Statement of predetermined prices in various residential schemes for different periods of time is given in Annexure. These statements are published by the DDA. The DDA also has policy of charging interest rates on plots over the predetermined price if a) extension of time is not claimed by purchases/allottees and b) if the cash flow projections of the DDA is disturbed due to non-payment of premium amount in the final schedules.

Before 21.8.81 the interest rate for MIG & LIG residential plots used to be 12% per annum and for auction purchasers of residential plots, the rate was fixed at 16% per annum since 21.8.1981.

It may be noted that the rate of interest on premium value discussed above holds good only in case of belated payment of premium. DDA also publishes a statement of market prices for auction for different zones based on which auction is made. A study of this land market rate of land prices shows that premium on land is extremely high. The percentage growth rate of market price of land in the 8 localities selected in Delhi over the period 81 to 85-87 was only 10% while there was a tremendous escalation over the period 85-87 and 87-89 (Table). The implication of such high premium on land would mean high speculation in the land market.

Delhi in the context of other metro-politan cities:

Land price data compiled by HDFC in major cities over the period 1986-88 presents an overview of the land market in the country. In the present section, selling price of land have been analysed statistically. A comparison of these aspects across cities gives a picture of the living conditions that prevails in the country.

The HDFC survey conducted in the seven cities of Pune, Ahmedabad, Madras, Delhi, Calcutta, Bangalore and Bombay shows that

Bombay registered the highest land price in the year 1986, 1987 and 1988 which is almost 2.26 times higher than the national average (for the 7 cities) for the 1986, 2.18 times for the year 1987 and 1.86 times for the year 1988. Other than Bombay, only Delhi has an average land price higher than the national average (for the 7 cities). Delhi's land price exceeded the national average by 1.26 times, 1.28 times, and 1.34 times for the year 1986, 1987, and 1988 respectively. The remaining five cities namely Pune, Ahmedabad, Madras, Calcutta and Bangalore have registered an average land price around the national average taken for the seven cities.

Land price for any location in a city is strictly a function of the locational characteristics and varies over space in accordance with the certain socio economic factors. Land-use characteristics, locational characteristics with respect to the CBD of the city, environmental and social factors interplays to determine the attractiveness and value of urban land. The table I presents location wise land prices data for seven .

A proper explanation of the variation in the land price in the metropolitan cities would require elaborate information on the socio-economic characteristics of the urban centres and the localities which is beyond the scope of the present study. Hence an attempt is being made to make a broad overview at the national level to build up a context for the analysis of the Delhi situation.

Pune has registered an average land price of Rs.256/- sq.ft, Rs.303/- per sq. ft. and Rs.364 per sq. ft for the years 1986, 1987

and 1988 with an increase of 1.18% over the years 1986, to 1987 and 1.2 over the years 1987 and 1988. The city has two localities namely Boat Club and Deccan Gymkhana where land price recorded is the highest (500/-, 600/- and 700/- in 1986, 1987, 1988 respectively) and has increased identically over the two annual periods 86-87 and 87-88, by 1.2% and 1.17%. Remaining localities of the city has land price ranging from Rs.150/- per sq. ft. to Rs.375 per sq. ft. for 1985 increased to Rs.190/- sq.ft. to Rs.500/-sq. ft. for 1988. Comparing the coefficient of variations of land price of the given localities in the city it is found that variation around the mean is small and this trend is noticeable over the time period studied. Ahmedabad has a very moderate range of land price for the localities concerned ranging from Rs.100/- sq.ft. to Rs.250/- per sq. ft. for 1986 raised to Rs.145/- sq.ft. to Rs.335/- sq. ft. for 1988. One interesting observation regarding land prices in Ahmedabad and Pune is that the percentage increase in land prices for 86-87 to 87-88 has increased over the period of time (from 1.08 to 1.16 in case of Ahmedabad and from 1.18 to 1.20 in case of Pune). However, in the remaining five cities there has actually been a decrease in the increase in land prices for the same period. The CV of land prices for the given localities in Ahmedabad (0.49) is slightly higher than that of Pune (0.38). The situation in Ahmedabad can be explained in terms of the aberrations created in the land market by implementation of ULCER which restricted the land supply. Madras has moderate land prices ranging from Rs.175.00 sq.ft. to Rs.325.00 sq. ft. for 1986 elevated to Rs.230.00 sq.ft. to Rs.450 sq.ft. for 1988, giving

a low coefficient of variation (0.23 at an average). Bangalore has a higher range (from Rs.220 per sq.ft. to Rs.450.00 per sq.ft. in 1986 and from Rs.330.00 sq.ft. to 650.00 sq.ft. in 1988). with a low CV of 0.27. Spatial disparity in land prices as reflected in the coefficient of variation for the above mentioned cities may not reflect the actual situation and may well due to the specific locations chosen. This point is further established in case of Calcutta and Bombay: Land prices for the given locations in Calcutta ranges from Rs.150.00 per sq.ft. to Rs.225 per sq. ft. in 1986 and became 250.00 sq. ft. to Rs. 325.00 per sq.ft. - in 1988 with a very low CV of 0.14. The main explanation lies in the choice of location. All the locations taken up by HDFC (for which data are available) are peripheral and identically located with regard to the core of the city. Had the city core and other satellite settlements were also included, a different scenario would have emerged. As evident in case of Bombay where a wide variety of locations were selected. In 1986 five areas of Bombay namely Warden Road, Caffe Parade, Petter Road, Malabal Hill and Napean Road, registered land prices above Rs.1000.00 per sq.ft. While four areas registered land prices of Rs.250.00 or less namely Bhayander, Nalasopara, Viran and Kalyan. Besides the New Bombay number of areas having land price above thousand increased to 15 in 1987 and 17 in 1988.

Correspondingly, the lowest land price for the year 1987 was 275/- sq.ft. in Bhayander for Bombay and 220/- sq.ft. in

Pauvel for New Bombay. Nalasopara, Virar, and Kalyan recorded a land price of 300/- sq.ft. each in the lowermost category. Vashi in New Bombay recorded 1.82% increase in land price from 275/- sq.ft. to 500/- sq.ft. This further increased to 700/- sq.ft. by 1.40% in 1988. Other areas attaining high percentage of increase in land price for the year '86-'87 are Caffe Parade (2.08%), Napeansea Road (1.88%), Bandra West (2%) and Andheri West (1.81%). The average percentage increase in land prices in Bombay however decreased from 1.55% to 1.24% over the year 86-87 and 87-88 respectively.

However the CV for Bombay was found to be quite high increasing from 0.52 to 0.72 over 1986 & 87 but decreasing to 0.66 over 1987 & 88. The high CV has been obtained because a large number of observations vis-a-vis varied type location in terms of attractiveness has been available.

The Case of Delhi

In case of Delhi instead of using HDFC data the DDA data has been used since it is available for a larger numbers of localities and consequently over a longer period of time. Average rate per sq.mt. of land in these areas auctioned by DDA of residential purposes over the period 1961-89 has been recorded. Taking into consideration the availability of the data, six years namely '70, '73, '76, '80, '85, & '88 has been choosen,

these are the years in which auction in maximum number of areas were made. For these years 9 to 11 observations (areas) which are not necessarily the same for every year has been taken and CV has been calculated to understand the spatial scenario.

It is noted that the coefficient of variation remained more or less similar between 70 (0.32) and 76 (0.35). It was reduced to 0.22 in 1973. In 1980 it increased to 0.49 but again came down to 0.42 in 1985. In 1988 a higher disparity was reflected by a CV of 0.55. Hence an overall picture of raising disparity in land prices in Delhi was depicted by increasing CVs over the year 1970-88. The year 1980-81 may be considered the major breakpoint depicting higher spatial variations as compared to the earlier years. It can be, therefore, inferred that Delhi is experiencing a growing spatial disparity in terms of land prices over the years. This obviously is a result of unequal attractiveness of the localities - the attributes of attraction occurring disproportionately over time to different localities.

While analysing land price in Delhi one must keep in view that Delhi has the maximum public intervention. It may be noted that DDA started the process of land acquisition with the purpose of providing land to the land market with a seed capital of Rs.123/- million. The purpose was to bring about a socially desirable disposal of developed land and thereby removing disparity in urban

land holdings. It may be observed that over the period of 1961-82. The seed capital has increased to Rs.2063 million. The objective of making land available to socially desirable categories has been unfulfilled.

It has been alleged that DDA has shown an inclination towards profit making which is an undesirable attribute for a public agency. Until March 1982 the DDA had disposed 47.1% of the total plotted residential area through auction. Apart from this, there have been remunerative disposal of commercial and industrial land.

Increases in land prices over time and differentials over space may be explained with reference to the process of urbanisation. The process of urbanisation has at a point of time provided major thrust towards urban income and employment. Correspondingly, there has been a rise in the price of urban services housing, infrastructure. Thereafter a disparity in the urban society has been recognised and elements of subsidy has been incorporated because it has been found that the entire urban population is not affluent enough to compete for the scarce urban resources. Recent observations reveals that service sector employment is a major feature of urbanisation (Darin Drabkin). This has three broad implications. Firstly high service employment in urban areas have forced the authorities to bring out important change in land use pattern (N. Ashok Kumar). Secondly a corresponding growth of

the unregistered employment and thirdly a hike in unregistered money circulation of generation of black money. Again it is imperative that whenever there is a hike in black money in the economy most of the investment goes to the real estate (Kumar A). Considering the fact that there has been a phenomenal growth in the service sector in the Indian economy (30% to 36%) it may be cited as a principal reason behind boom in real estate transaction and speculation in the land market. Hence the question of provision of basic need to the urban poor and protection against astronomical escalations in prices of shelter has become increasingly important.

After doing the cross sectional analysis it would be useful to analyse the temporal trends of land price over time. It is indeed true that the process of urbanisation is a complex nexus of several factors affecting land price overtime. For a comprehensive analysis it would be useful to build up a time series data on several explanatory factors and regress on land price. This would, however, require extensive work which is beyond the scope of the present study. In the following section an attempt has been made to understand the temporal variation by taking time as the explanatory factor.

In the present exercise nine areas have been chosen and the data on auction price of land at current prices compiled by D.D.A. have ^{been} analysed. The localities chosen have their unique characteristics in terms of their social environment as

well as their proximity to the CBD. There are localities which are new and up-coming while the others are well established areas of attraction. As noted above, first a uniform increase model has been tested with time (t) taken as the independent variable and auction value of land as the dependent variable (Y). The function is the following $Y = a + bt$ where a is the intercept and b is the annual increase.

Paschimpuri, East of Kailash, Safdarjung and Naraina have land price data ranging from the 60s to the 80s namely 69 to 83, 65-88, 64-85 and 64-87 with 14, 9, 20 and 13 observations respectively. It is evident that data for every year for the above mentioned time period are not available. In all the cases negative value of 'a' indicates that the value of land in the initial stages of development has been nominal. The high value of 'b' indicates a steep rise in the land value in the latter periods. For Paschimpuri the initial land value is the least and the rate of growth has been smallest (Rs.65/- per year). For East of Kailash the initial value is the highest with a very high increase of Rs.408/- per year. Safdarjung and Naraina have identical temporal trends in land price, with a value being negative viz -762 and -927 and with growth of values of Rs.156/- and Rs.184/- respectively. The value of adjusted R square is high for Paschimpuri (0.65), Safdarjung (0.67), and Naraina (0.77) but weak for East of Kailash (0.49). This is because in the latter case the number of observations is small.

For the localities of Pitampura, Vikaspuri, and Shalimar Bagh the time period is from the mid seventies till late eighties. In all the three cases high adjusted R square value of 0.85, 0.72 and 0.87 have been obtained mainly due to a large number of observations obtained for these areas and in the time period choosen. For the localities Yam-una Vihar and Prasant Vihar the data are available only for the eighties and consequently the number of observation is very small. In both cases high R square value (0.9 and 0.8) has been obtained. For all these observations the negetive value of A and high positive value of B suggests that perhaps a linear function is not a very good fit. A second degree function in t giving a sharper increase in the latter years would have been more appropriate.

The major limitations of this model is that land prices are assumed to increase by a constant amount every year. However often such increases are in proportion to the base year value. Hence the exponential function.

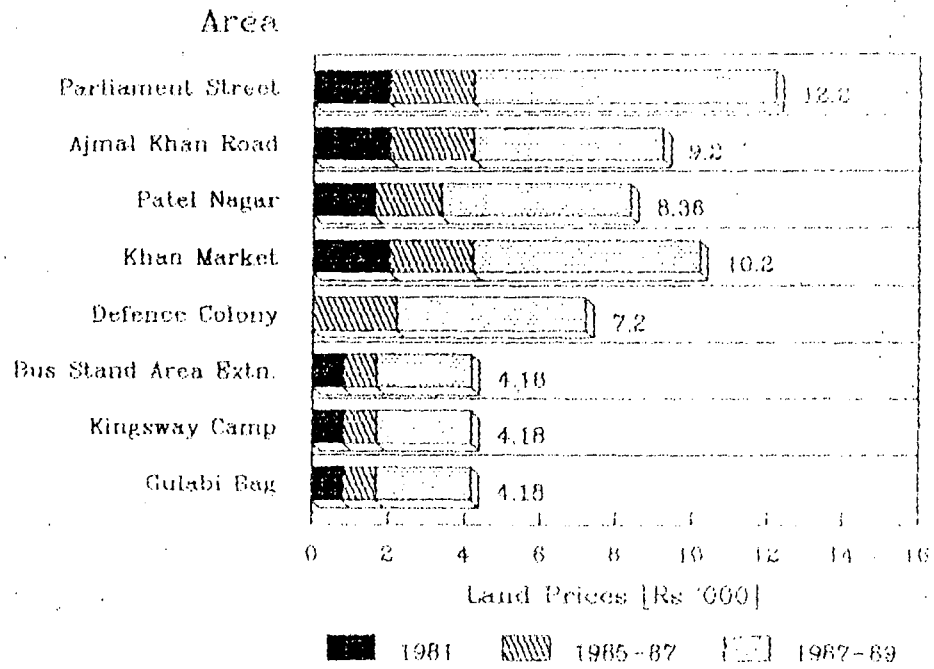
$Y = Ac^{Bt}$ has also been used in this exercise .

A semilog function has been derived from this model as follows:

$\text{Log } Y = \text{Log } A + B t$ where $\text{Log } A$ is any constant
and $B = \frac{1}{Y} \frac{dy}{dt}$ the growth rate.

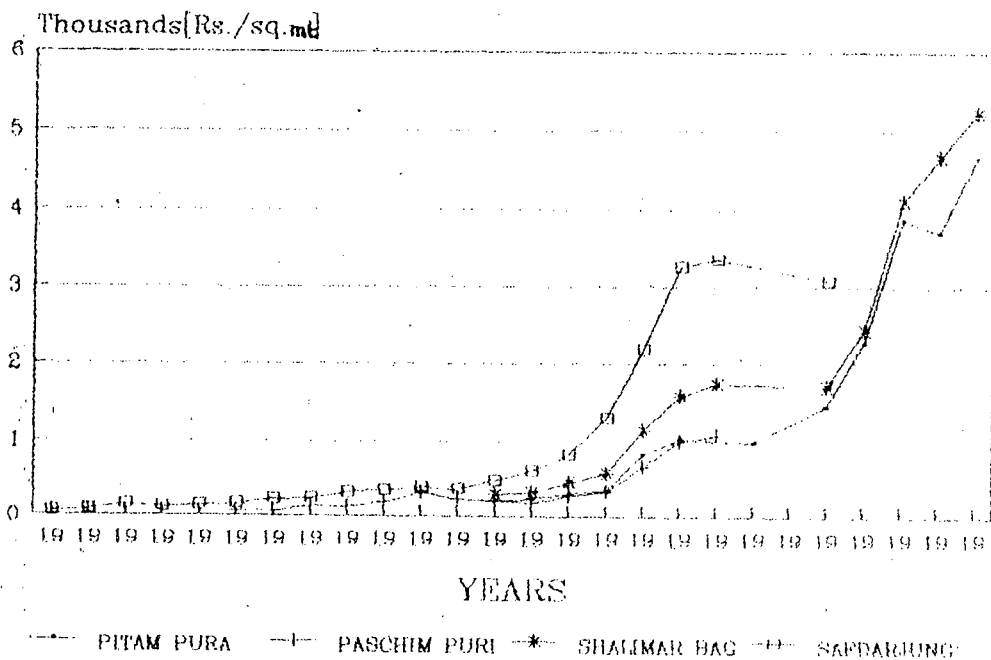
Paschimpuri, East of Kailash, Safdarjung and Naraina have land price data ranging between 69-81, 65-81, 64-85 and 64 to 87 with 14,9,20 and 13 observations respectively. In all those cases the small value of A viz 62.20, 69.19, 50.29 and 37.86 indicates

Reserve Rate of Land Prices In Delhi



Land Department, DDA.

TEMPORAL TREND OF AUCTION LAND PRICE [DELHI]



that land prices were very low in the early Naraina recorded the lowest land price as compared to the three other South Delhi localities. The amount rate of hike in land prices in all these localities has been between 20% and 22%. The value of adjusted R square for the time series regression of each of these four localities works out to be 0.84, 0.91, 0.95 and 0.98 respectively. These are high with F statistic significant at 1% level of confidence.

For the localities Pitampura, Vikaspuri, and Shalimar Bagh, the time period is since the mid seventies till the late eighties. The number of observation is therefore quite large. The initial price level of these localities indicates very high price for Shalimar Bagh (244.56) in comparison to Pitampura (154.15) and Vikaspuri (105.98). The annual rate of increase is, however, higher in Pitampura (31%) and Vikaspuri (30%) with respect to Shalimar Bagh (27%). All the three localities have registered high R sq. value (0.9) with F statistic significant at 1% level. The regression analysis for Yamuna Vihar and Prasant Vihar with data obtained only for the eighties indicates the high value of land in the beginning of the decade. In case of Yamuna Vihar the value is 412.15 and for Prasant Vihar it is 644.32. The rate of growth is also very high viz 28% in both cases. High R square value of 0.9 and significant at 1% level reflects the statistical validity of the exercise.

Similar behaviour in the growth rate of land prices is due to the fact that for all the localities, residential plots alone have been considered. The heterogeneity of land use pattern has thus been elucidated.

The above analysis thus shows that land values were quite nominal at the time of the introduction of the city master plan in most part of the city. We also notice that there has been an acceleration in the increase of land prices in the mid eighties. This acceleration cannot be attributed to differential rate of inflation in different periods. It is therefore possible to infer that the availability of land is becoming more and more difficult with time. It is also noted that the rate of increase in land value is highest in the peripheral areas where the initial land values are very low. This goes against the popular understanding that rise in land value is sharper in the more central and relatively affluent localities.

CHAPTER: 5

CHAPTER V

Public Agencies in the Housing Market: the case of Delhi

The National Scenario

The role of state in housing activities has not been very encouraging over the years. Housing investment as a proportion of gross capital formation in the country has declined from 30% in 1950 to 12% in 1975. More alarming is the fact that the gross capital stock in housing has a growth rate of a meagre 1.5% approximately which is much below the rate of the gross capital formation in the country and also that of population growth.

It is obvious from the above that with growing urbanisation there has not been a corresponding growth in a very basic urban amenity namely housing. Expenditure on public housing during the plan periods has always been very nominal as compared to private housing, and has also been decreasing. While expenditure on public housing increased by 87.3% over the fifth to the sixth five year plan, (in current prices) expenditure on private housing increased by 216% over the same period. Again the growth on expenditure on public housing in the seventh five year plan over the sixth plan was merely 64.9 percent. It may also be noted that investment in housing as percentage to investment in total economy has gone down rapidly over the plan periods from 34% during the first five year plan to only 8% during the sixth

five year plan. Thus, investment in housing sector has been decreasing in the national economy, and the private sector has gained in relation to the public sector.

An analysis of the present housing stock in the country reveals that in 1985, urban India has an housing stock of 263 lakhs out of which only 68.44% are pucca houses. If only these are considered as useable stock, the present housing ^{shortage} storage would work out to be 121 lakhs of dwelling units. However, if the entire stock of pucca, semi-pucca and serviceable kutcha urban housing are considered as useable, the total shortage would work out to be 56 lakhs dwelling units (Kutcha housing stock in the urban areas is excluded from useable housing stock). Again NBO data on issue of building permits and completion certificates for residential buildings show that over the period 71-82, 80 thousand (approx) building permits are issued annually, in major towns and municipalities of population 1 lakh and above. However, during the same period, an average of 40 thousand (approx.) completion certificates have been issued annually. This suggests that only 50% of the buildings for which permits are given are actually completed.

Non-availability of organised funds and difficulties in procurement of building materials are major impediments in the house construction activity.

Assessing the nation's housing ^cenario Rakesh Mohan, T. Krishna Kumar, M.K. Moitra maintain that the public sector has a

marginal role to play. They argue that organising finance through saving schemes and helping procurement of building materials are the measures to be taken up by public agencies to the better-offs and middle classes for house construction. The role of black money in real estate transactions remains a problem that has to be dealt with progressive taxation policies.

The role of the public sector however becomes significant in the context of provision of housing to the economically weaker sections of population. It has been pointed out that the failure of the public sector lies in its unrealistic assessment of the housing needs of the poor (Mohan R). Housing demand needs to be estimated taking into consideration income distribution and the consumption expenditure. It is essential therefore to study the households propensity to spend on housing. This point will be dealt at a greater detail while studying the case of Delhi.

The study of the resettlement housing in Pune (Bapat M) has indicated that the costs of construction of housing works out to be higher than the estimate and much more than what the EWS can afford. Hence it has been suggested that provision of "low interest loans" to dwellers and assistance in procurement of materials" in situ, are better measures for helping the poor (R. Mohan). Such schemes promoted by the "urban community development programme" in Hyderabad, the "Bustee improvement programme" in Calcutta (provision of piece meal assistance such as sanitary facilities, water facilities in Calcutta slums), and the Greater

Cochin development authority are supposed to be giving rich dividends. It has been propagated that while public housing schemes are financially non-viable and can serve only a small section of the urban poor, slum improvement programme and environmental sanitation programmes can reach larger segment of the people.

Housing Development Practices in Delhi :

There are some agencies which provide housing to its non employee e.g. the central government, semi public organisation, Delhi Administration, but DDA is the major housing agency to provide housing to the general public while the HUDCO is primarily a financing organisation. The Ministry of Urban Development is the apex body which controls the TCPO, DDA, CPWD, NBO, the Directorate of Estates and the Land Development Office. Designing to Social Housing Schemes, review of housing programmes and organisation of funds are overviewed and partially administered by this ministry. |

The CPWD is a largest organisation for construction of housing the central government employees. In Delhi it also operates to provide housing on rental basis to its employees. After construction of houses the CPWD hands it over to the Estate Office from where allotment to the government employees takes place. It also takes up maintenance of houses built by them. The Delhi Administration apart from being an apex body to provide land to the housing agencies operating in the capital also gives financial

assistance for housing to individuals and also total authorities for employees housing schemes.

The MCD and NDMC are local bodies whose principal functions are maintenance of demarcated areas which includes maintenance of corporation building, administering building permits for construction and surveying of dangerous buildings. They also construct houses for their employees.

The DDA is the largest public housing agency to provide housing to the general public especially the Janta and EWS category. DDA^{was} set up by an Act of Parliament of 1957, with the objective of land development and implementation of the Delhi Master Plan. In the course of its functioning, however, it was discovered that the persons to whom residential plots were allotted by the DDA, often took a very long time to construct their houses. The DDA perceived this problem as follows:

1. Residential plots are often allotted in under developed area which created reluctance on the part of the allottees to move, because they were sparsely habited. ✓
2. Organisation of funds and procurement of building materials posed a problem. Hence it was contemplated that public sector should directly come into construction instead of limiting its role to land development and planning. ✓

Moreover, the DDA by virtue of being the apex planning body in the capital had commitments towards the housing needs of

the economically weaker sections in the society. Hence a conscious decision was taken by DDA to take up housing activity in the year 1966-67.

Housing policies of the DDA : There are broadly three types of housing schemes floated by the DDA - a) The General housing schemes b) The new pattern housing schemes and c) the self financing schemes. The first two caters to the MIG, LIG and the Janta category while the SFS is to benefit basically the higher income groups. In these categories a total number of 172513 dwelling units have been allotted till 15-12-1989, which includes 304 allotment to evictees under the new pattern schemes.

Under the General housing scheme MIG, LIG and Janta flats were allotted plinth areas of 60-100 sq.mts. 40-70 sq.mts. and 23-37 sq.mts. respectively. Three general housing schemes were floated in 69-70, 71-72 and 76, apart from a special housing registration scheme floated for SC/ST in '73 and two schemes for retired and retiring persons in '82 and '85.

Over 70,000 persons were registered with the general housing scheme but DDA's performance in catering to these registrants was extremely poor. During the first five years 5600 flats were constructed. Neither an account of the backlog created in the process nor the salient features of the scheme are available now to identify the aberrations. Subsequently DDA revised its scheme and came up with the new pattern housing scheme which is

the major tool of DDA's housing operation today. This scheme is also known as the HUDCO scheme as it follows the HUDCO method of construction and finance opened in Sept. '79, this scheme has over 1-7 lakh registrants . Under this scheme all flats in Janta category are allotted on hire-purchase basis. In case of LIG flats 75% are allotted on hire-purchase basis and 25% on cash down basis. For the MIG flats 60% are allotted on hire-purchase basis and 40% on cash-down basis. The period of instalments in case of houses allotted on hire-purchase basis are-MIG 10 years, LIG 15 years and Janta 20 years respectively.

The plinth area of flats under this scheme were reduced to 65-70 sq.mts, 40-45 sq.mts and 16-26 sq.mts. for MIG, LIG and Janta respectively. For the purpose of generating resources, it was again contemplated that all MIG flats and 50% of LIG flats would be allotted on cash down basis the remaining 50% of LIG being allotted on hire purchase basis. But this decision was rejected through a court judgement and the old policy was again established. Under this scheme reservation are made for the SC/ST (25%), the physically handicapped persons (1%), widows of defence personnel killed in action (1%) and ex-servicemen (1%).

Income range Redg. deposit No. of registrant backlog

	(Rs/yearly)	(Rs.)		
MIG	7201-18000	4500	47521	27718
LIG	4201-7200	1500	67502	41651
EWS	upto 4200	250	56249	25244
			<u>1,71,272</u>	<u>94613</u>

Source : Office of Commissioner Housing, DDA.

On 31.3.1989 it was recorded that this new pattern scheme had a back log of 95613 dwelling units. Thus approximately 55% of the registrants were awaiting accommodation. The DDA reacted to this by launching a project of one-two tenement dwelling of a smaller plinth area to eliminate a part of the backlog. Apart from this, 'Awas Sarker Yojna' was launched for MIG and LIG registrants who wished to form co-operative societies and construct their own dwellings. Under this scheme there were 2135 MIG registrants and 4270 LIG registrants.

In the year 1977 DDA floated the first self financing housing scheme. Under it the fund for construction were to be realised from the allottees themselves. The mode of payment of the SFS flat is as follows: i) 25% as initial deposit (including amount of registration , b) 20% after 6 months, c) 25% after next six months, d) 20% after next six months, e) 10% while taking possession. Under the SFS schemes the registrants are allotted the dwelling units within a period of 2.5 years of allocation. The registrants are entitled an interest of 7% after a period of 2.5 years and 10% if the delay in construction is beyond 36 months.

This scheme is open to all income group subject to the following conditions: a) The person has to be an Indian citizen and attain the age of majority when applying b) The person should not possess any plot of land in any form except if he is owning a residential house jointly and his share is less than 80 sq. yds.

c) The person should not be in possession of any DDA allotted flat even if its area is less than 66.9 sq.mts. Data on DDA's performance in this scheme shows that there are three categories. Although not clearly specified by DDA it appears that category I caters to the retired and retiring public servants by virtue of the 'special self-financing housing registrations scheme' floated for retired and retiring public servants, in 1983, special SFS housing for retired and retiring public servants was also floated but by that time category I housing was withdrawn. The remaining two schemes are open to general public and are characterised as follows:

<u>Category</u>	<u>Registration Fee</u>	<u>Accommodation</u>
Category II	Rs. 10,000	2 bed room
Category III	Rs. 15,000	3 bed room

In between 1977 and 1982, five SFS have been floated that includes the 'Retired Persons Scheme', in 1985 the 6th SFS for semi-furnished houses was floated¹. But latter DDA decided to furnish only finished flats and the registrants of the semi-furnished scheme were allowed to convert their registration for finished flats, whenever available for allotment. The SFS

1. The semi-furnished flats had the following provisions:
 - (i) flooring
 - (ii) Internal plaster and other fitting
 - (iii) Door, windows, shutters and grills,
 - (iv) Kitchen slab and shelf
 - (v) Sanitary fittings and
 - (vi) Electrical wiring & fittings.

also has reservations for SC/ST (25%), physically handicapped persons (1%), war-widows (1%) and ex-servicemen (1%).

Schemes for retired and retiring public servants' have been a noteworthy component of Delhi's housing policy. A public servant has been defined as : Employee of a) Central Government b) Delhi Administration c) Statutory Autonomous bodies, public sector undertakings, institutions of Govt.^{of} India and Delhi Administration d) Nationalised Banks and e) All India Services. Under the General Housing Scheme two schemes were launched in '82 and 85, for retired and retiring persons. Two more schemes were floated under the SFS to cater to the people in this category in 1981 and 1983.

A critical appreciation of the merit of the schemes becomes difficult due to lack of adequate information regarding implementation of the schemes and also because DDA has often permitted conversion of registration from one scheme to another. A broad overview can however, be attempted based on the following facts:-

a) After the last General housing scheme had been floated in '76, a total of over 70,000 persons were registered under this scheme. In 1983 over 52,000 (Approx) dwelling units were allotted under this scheme. DDA offered the remaining registrants to transfer either to the SFS or take refund of registration fee. Thus option was made available even to the allottee if the houses constructed were not upto the satisfaction. All applicants were thus catered to and

the DDA felt that it had discharged its obligations. This situation was once again reviewed in 1985, when it was found that 1800 registrants have neither taken refund nor sought conversion to SFS but were awaiting for accommodation. They were again given an offer to accept houses that were completed till then. A total number of 65590 houses has been completed under this scheme till 89-90 which includes 4294 houses against 4370 registrants under the retired/retiring persons scheme. The DDA claims to have fulfilled its obligations under this scheme. It however remains unclear as to how many persons converted their registration to the SFS and how far they were successful in obtaining a house. DDA's stand on offering the registrants to transfer to other schemes or take refund of registration money is self-defeating because the basic intention of the DDA in undertaking housing responsibility to construct houses to people's satisfaction and in areas earmarked for development. Besides, the time taken to construct the 65590 housing units had been 12 years (66-67 to 88-89) which included only 5000 (approx) dwelling units in the first five years. Thereafter for the last seven years supplied 8600 dwelling units per year. It is thus evident that the supply rate of housing has been extremely slow by any standard.

b) The new pattern housing scheme do not have the problem of forced conversion or refund of registration fees.

	No. of Registrants	Backlog as on 31.3.1989	Percentage shortage
MIG	47,521	27,718	58.32
LIG	67,502	41,651	61.07
Janta	56,249	25,244	44.87
	1,71,272	94,613	55.24

However, sluggish pace of operation created serious backlogs in every category of housing under the scheme.

One general criticism in both the schemes is that neither is time-bound, as compared to the SFS housing. A delay of 5 to 8 years for a janta category registrant in obtaining accommodation in Delhi has been quite common.

c) DDA's performance in executing housing progresses pertaining to the SFS has been more or less satisfactory. DDA records reveal that in the 6 self financing schemes, there has been 69903 registrants. After considering cancellations, refunds and adjustment of conversion cases this figure comes to 69071. Out of this 64.3% (44412) of the registrants has been catered to and only 24659 persons are awaiting allotment. Since SFS is a time-bound programme, registrant entitled to an interest payment at 7% p.a. at the end of 2½ years and 10% p.a. at the end of 36 months. This must have acted as a major factor for the completion of 11379 dwelling units in 88-89 alone.

Thus DDA's housing activities appears to be elitist in nature. A bias towards better implementation of self financing schemes has become apparent. On the contrary the schemes meant for people in the EWS -Janta category are loosely formulated and are not implemented in a time bound manner. The result is the backlog in the new pattern schemes, as discussed above.

In pricing the EWS flats, two kinds of subsidies exist¹.

1. Sipra Moitra; DDA and the housing scenario in Delhi-the controversial.

A) Direct subsidy: This is provided by not charging the cost of land development and administration. Overhead charges and interest rates are also lower. Apart from this there is a straight deduction of Rs.2000 from the total cost of the EWS flats.

B) Indirect subsidy: Since all EWS flats are allotted on hire purchase basis and the period of payment is 20 years, there is an indirect subsidy because of the low rate of interest.

Subsidy at Rohini plots under different Income categories-

ROHINI

Category	Cost of Devpt Rs. per sq.mt	Price of Plot Rs. per sq. mt	Subsidy Rs. sq.mt	Income range
EWS	270	100	170	upto 600
LIG	270	125	145	601-1000
MIG	270	200	70	1001-2000

Costing of flats under Hire purchase scheme -1980

Category Income/ month (Rs.)	Plinth area	Total cost Rs	Premium for land Rs	Initial deposit Rs	Balance - Rs.	Monthly instal ment Rs.
MIG (601-1500)	64.26	72100	6000	22100	5000	791.8
LIG (351-600)	40.98	42000	4000	12800	29200	362.0
EWS (upto 350)	18.48	12400	4000	5700	6700	66.0

Source: DDA and the housing scenario in Delhi-the controvertial,
Sipra Mitra

A report on role ^{of} 'improving metropolitan living environments through strengthening housing sector activities' has estimated housing need based on existing housing conditions 89-90 in the tune of 4 lakhs and 53 thousand. DDA again has a backlog of 67 thousand out of which approximately 25 thousand are awaiting SFS allotment.

DDA housing registrants awaiting allotment as on January 1990

Scheme	Number
1. 1979 DDA registrants +SFS	1,18,486
2. Rohini plots	45,856
3. Co-op. Housing Societies (No. of members)	1,48,567
4. Slum Housing	35,000
5. 1988-89 SC/ST Registrants	<u>20,000</u>
	<u>3,67,909</u>

Source: PPW, DDA.

A DDA survey reveals that every year an additional 80000 households are added to the city's population of which 20% to 30% belongs to very low income group who cannot afford ownership or rental housing. It has been estimated that approximately 89% of households in Delhi would fall under the categories MIG, LIG & EWS. According to official classification specified by DDA, the upper limit of income for the MIG category considered above is Rs.1500 per month. The cost ranges between Rs.1500 and Rs.2000. Households in MIG category only ^{can} afford the cost for ^{housing} them being Rs.2000/- per sq. meter. However, the EWS and LIG put together constitute approximately 42% of the households earning Rs.700/- per month would

clearly find it difficult to pay Rs1500 per sq.mt. for its shelter. Coupled with this is fact the delay in base construction by DDA results in significant cost escalation which adds on to the repayment burden.

A research on housing finance has therefore suggested a survey on propensity of different income groups to spend on housing before formulating the housing schemes. The report on "Improving metropolitan living environments through strengthening housing sector activities also confirms that the EWS and a large chunk of LIG is not in a position to afford the housing provided by the DDA.

The principal reasons for the inadequate supply of housing by the DDA, are (i) problems in organising housing finance (ii) non-availability of land required for housing and (iii) Problems in providing infrastructure and trunk services to the housing sites - again due to shortage of finance.

DDA can be criticised on the ground that 1) its development procedures are extremely slow which has increased the demand and ii) the policies lack in insight to estimate whether the beneficiaries can afford the goods that are being delivered.

Elaborating on the second point, a very practical problem of filtration in public housing in Delhi can be envisaged. Fixing the prices of houses beyond the affordability limits of people leads to a upward filtration whereby the MIG houses go to HIG and the LIG is displaced by the MIG.

The PPW, DDA has however nearly come up with the following recommendation:-

- a) The problem of the squatter families (2.4 lakhs) needs to be sorted out partly by resettlement and partly by in situ environmental upgradation. ✓
- b) Co-operative housing schemes have so far served the middle income group well. To encourage group involvement, cooperative housing would be extended to LIG and squatters as also to people in central congested areas to rebuild the area with higher floor area ratio to accommodate most of the families. ✓
- c) Integrated housing development to resettle the squatting families along with the low, middle and higher income groups with integrated schemes has been an element of the master plan. ✓
- d) The role of the government as facilitator in housing processes (in accordance to the national housing policy) should be considered. ✓
- e) To check the growing demand of housing, in-migration in the union territory of Delhi needs to be reduced. For this purpose (as per NCR plan) alternative growth centres should be developed. ✓

Housing Finance and Investment in Delhi

Though the share of investment in housing to total investment in the economy, made by the Central Government has declined over the plan period, as discussed above, investment in housing by DDA over the same time period has increased dramatically.

Plan period	Housing sector (Rs. in million)	Total Plan	Percent to total plan	Investment in housing by DDA (Rs. in million)
74-79	168.03	-	-	866
80-85	898.92	10,420	8.62	5500
85-90	1075.00	20,000	5.32	14000

Major housing finance institutions of Delhi are LIC, GIC, the Delhi Co-operative Housing Finance Society (DCHFS), the housing Development Finance Corporation (HDFC), Employees Provident Fund, employer loans and budget provisions in the Delhi Administration and the DDA.

Rental housing funds from the Central Government for its employees presently comes to about Rs.50 million per year. The LIC and HUDCO mainly finance the co-operatives while the HDFC finances individuals. The DCHFS which also finances the co-operatives are in turn financed by the LIC and GIC (LIC provided Rs.888 million and GIC Rs.250 million to DCHFS till March '82). The DDA has an annual expenditure of Rs.3000 million on its housing activity and Rs.500 million on its slum wing.

Till 1987 the HUDCO has provided fund amounting to Rs.424 million which assisted the construction of 18000 housing units. Almost 70% of its beneficiaries belonged to the low income group. HUDCO mostly assisted co-operative who received land from the DDA. The DCHFS which has emerged over the years as a major housing finance intermediary also caters to co-operatives. By 1987

it financed 122 co-operatives (construction of more than 25000 plots) with a loan of Rs.150 million. Presently it is entitled to be refinanced by the NHB whereby it can bring down its rate of interest to 12.5%.

The HDFC which has extended total loan amounting to Rs.70 million per month (average loan Rs.70,000) has served 9000 families in Delhi till 1988. Between 1980-87, the central provident fund organisation has provided fund organisation has provided Rs.54 million as housing finance to 6400 beneficiaries (at an average of 1000 member per year).

Since the inception of the NHB the commercial banks have attained a noteworthy role in housing. Previously the amount of loan did not exceed Rs.5000 for the DWS but presently with refinancing assurance from the NHB they are lending out 30% of the cost. Moreover their rules and regulations have been liberalised in favour of the beneficiaries.

The different housing finance organisations have different interest rates on the basis of the loan amounts, higher interest being charged for higher amounts.

The NHB is offering refinance facilities to the different housing finance agencies and subsidise the rate of interest for loans amounting upto Re. 1 lakh. Another important scheme floated by the NHB is the HLA scheme (Home loan account scheme) which mobilises personal savings for five years at the end of which loan amounting to a multiple of three to four times is

offered (depending upon the amount of loan that are required).

Responding to the governments directive to float housing loan schemes, the few financing institutions that came up are LIC and the HDFC that contribute significantly to Delhi's housing finance. They provided loan ranging from Rs.20,000 to Rs.3 lakhs at an interest rate varying from 12% per annum to 15% per annum. But even this rate of interest is considered quite high for most of the MIG and LIG households. At this juncture, HDFC's 'Home saving plan' providing loans at a low rate of interest viz 8.5% per annum with a long repayment period of 15 years has come as a path breaker. For individuals registered under this scheme on initial saving per month (as per the individual's ability) for a period of 25 months to 7 years at an interest rate of 6% per annum is required. At the end of the saving period, the registrant is entitled to a loan equivalent to 2.33 times the saving subject to the satisfaction of the corporation with regard to capacity to repay. This HDFC scheme is not only available for purchase or construction of houses but also for repayment of loan to the employer or a bank from which loan had been taken for this purpose.

As has been mentioned earlier HUDCO is a major financial institution funding bonafied house building co-operatives in the country. HUDCO also has schemes for funding repairing of existing construction. It follows a method of cross subsidisation by charging higher interest rate from the HIG and lower

interest rates from the LIG and EWS. The detail of HUDCO's functioning is presented in the appended table 6.

Another innovative scheme has been adopted by the national housing bank which is the 'home loan account' scheme, which registers a member for a period of 5 years with a minimum contribution of Rs.30 per month. The contribution may also be made in quarterly, half yearly or annual instalments with minimum contribution of Rs.90, Rs.180 and Rs.360 respectively. The savings earn an interest of 10% per annum which is added to the account annually and is treated as re-invested in the account. The savings between contributions of Rs.30 and Rs.2000 per month amounts to Rs.2300 and Rs.1.5 lakhs respectively after 5 years and the loan available is three times the savings for accommodations below 430 sq.ft. and two times for accommodations above 860 sq.f.t. The interest rate on loan of different amount are as follows:

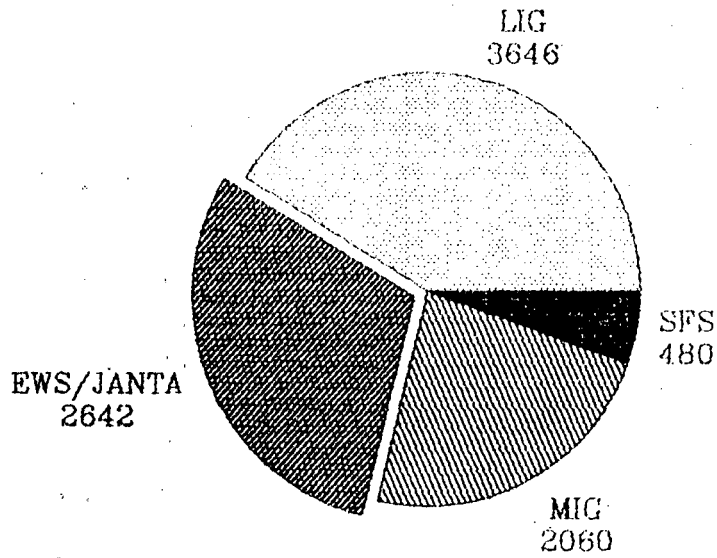
Upto 50000	10.5%
50001-100000	12.0%
100001-200000	13.5%
200001-300000	14.5%

These rates are lower from that charged by scheduled banks. A loan under this scheme will not bar any one for taking loan from any other source including from Bank.

Physical provision of dwelling units should not be viewed as an end in itself for the benefit of the poor. Associated with the physical structure are a host of economic and social aspects that in an integrated form represent housing. It is,

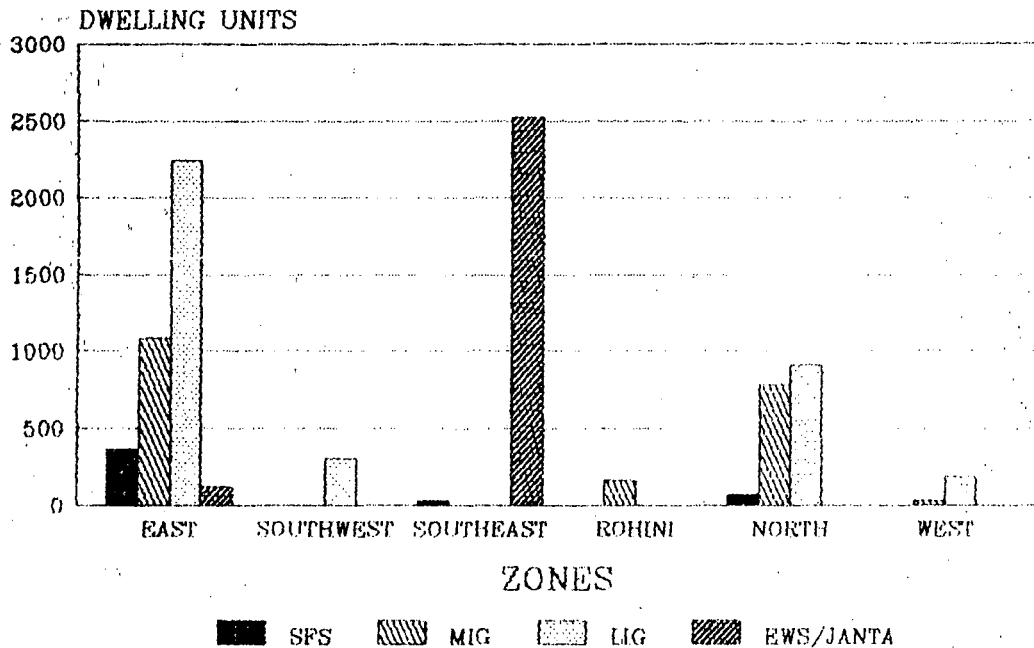
SHARE OF DDA HOUSING: '86-87

INCOME CATEGORY WISE



HOUSING WING DDA

SPATIAL DISTRIBUTION OF DDA HOUSING 1986-87



HOUSING WING DDA

therefore, imperative that certain related aspects like accessibility, availability of infrastructure etc. are analysed particularly in relation to the poorer section of the population. Againⁱⁿ the Delhi master plan an argument has been given for optimal social and economic mix in the residential zones because i) this difference would make socially complimentary groups to live together and public service facilities made available in a residential zone can be availed of by rich and the poor living in the zone.

It is interesting to investigate how the developing units constructed for the poor by the DDA has been distributed in space. For this purpose a measure of inequality has been worked out based on DDA data available on EWS/Janta housing in different localities of its operation till the year 1988-89. Location quotient for EWS-Janta housing for 111 areas has been calculated for determining the extent to which EWS-Janta housing has reached qualitatively better localities in the city.

Location Quotient is measured as follows:

$$H_{ij}/H_i \quad H_j/H$$

where H_{ij} = the number of EWS-Janta houses in area i

H_i = total number of houses in area i

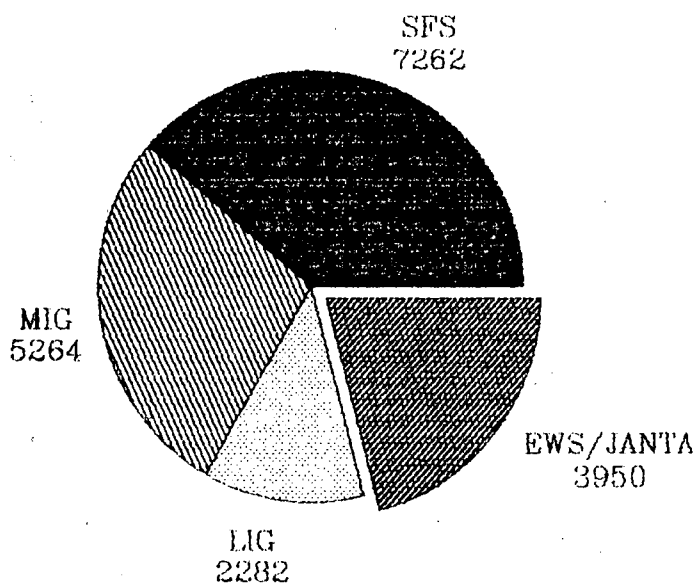
H_j = total number of d EWS-Janta housing in all areas

H = total number of houses in all categories & all areas.

If LQ for an area is unity it is inferred that the share of EWS housing in the area is similar to the share of EWS housing for the region i.e. Delhi. It has also been calculated that EWS houses (55081) comprises 30.49% of the total housing stock (180605) build by the housing wing of DDA. Therefore, an LQ value of less

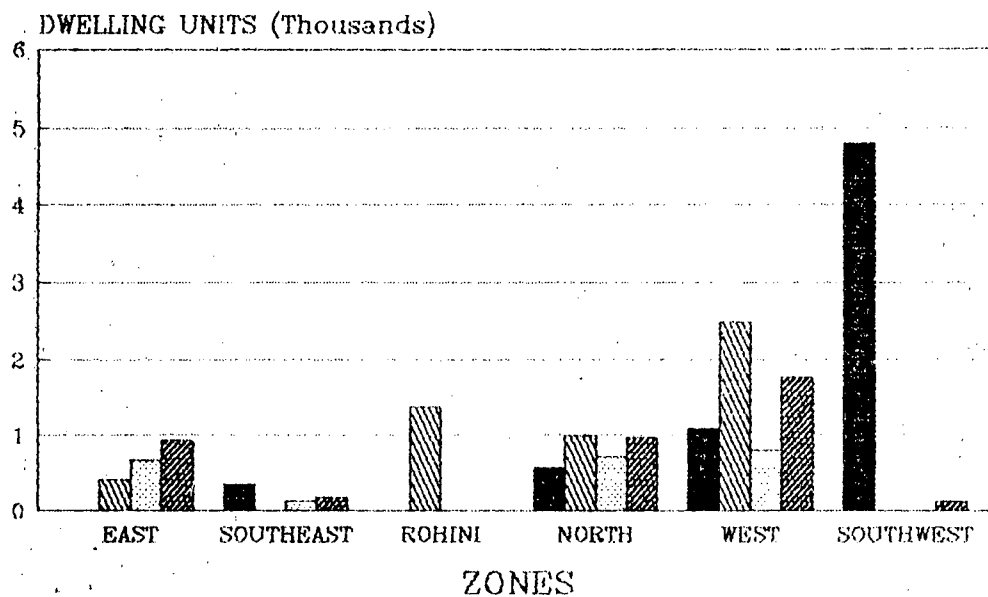
SHARE OF DDA HOUSING: '87-88

INCOME CATEGORY WISE

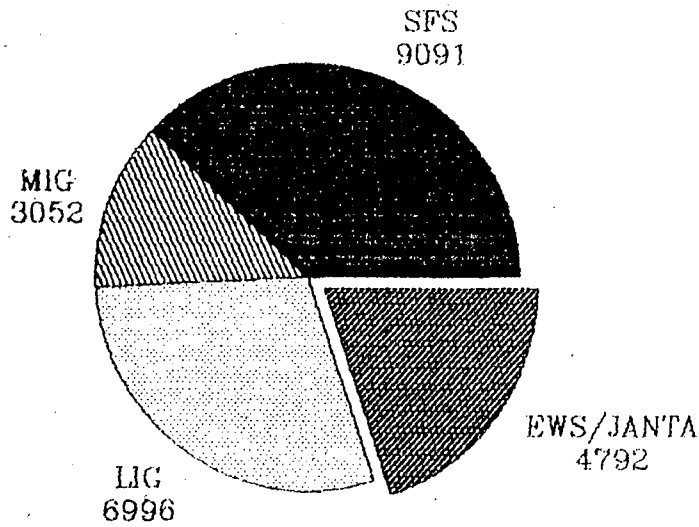


HOUSING WING DDA

SPATIAL DISTRIBUTION OF DDA HOUSING (1987-88)

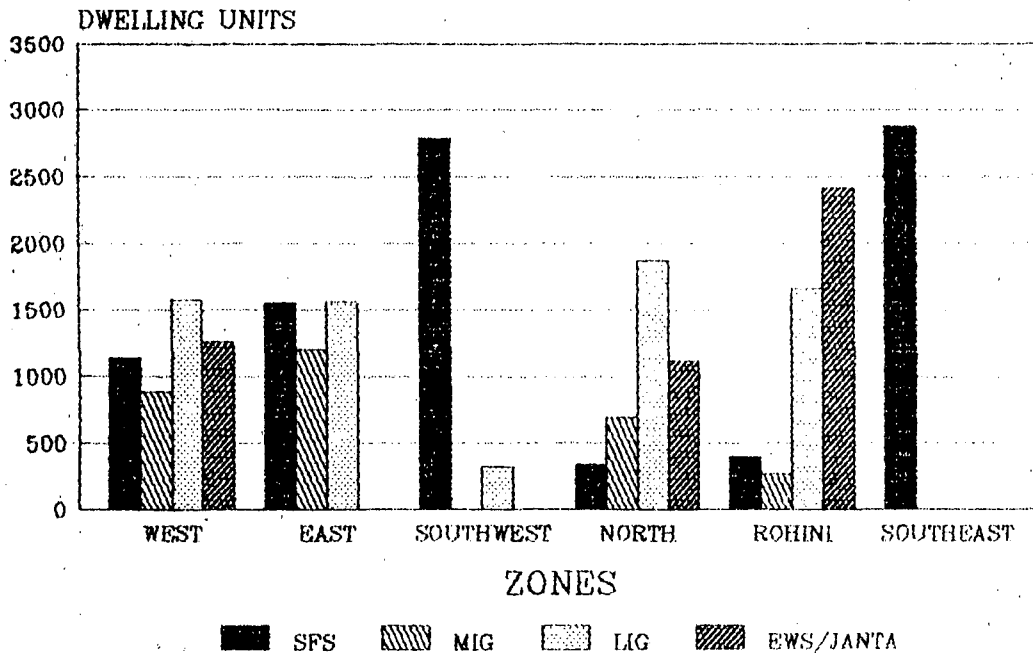


SHARE OF INCOME GROUPS IN DDA HOUSING: 1988-89



HOUSING WING DDA

SPATIAL DISTRIBUTION OF DDA HOUSING, CATEGORY-WISE '88-89



HOUSING WING DDA

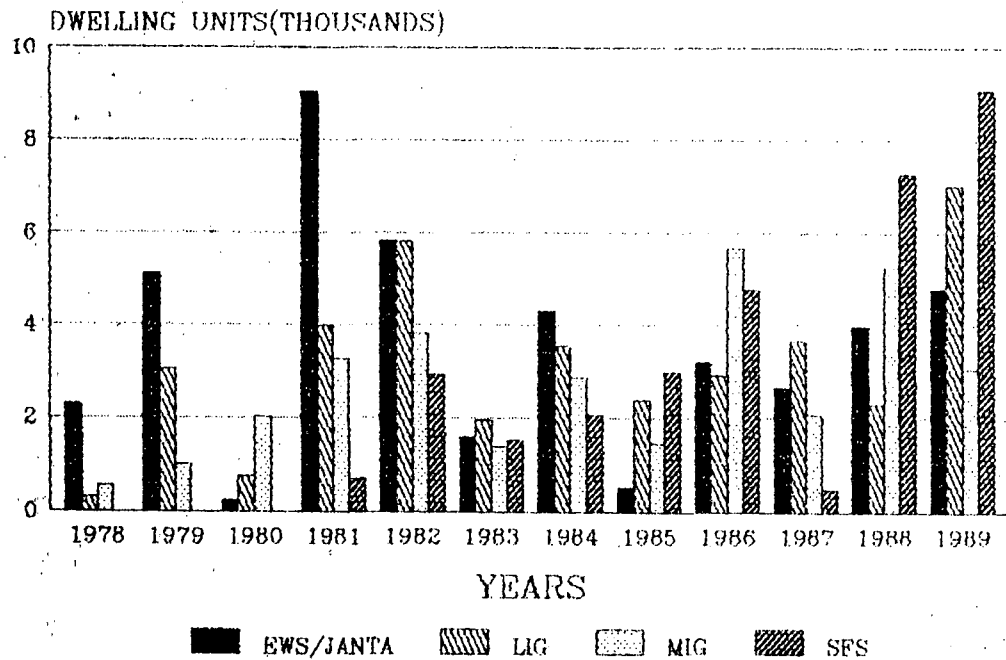
than 1 would indicate that share of EWS housing in that area is less than 30.49

It has been found that 44 out of the 111 localities of DDA do not have any EWS-Janta housing. Therefore LQ for these areas is zero. Among these areas, there are some that do not cater to the highest strata of the society either. They mainly house MIG and LIG population e.g. Tagore Garden, Naraina, Munirka (SFS- 20.6% and MIG -64.9%) Sunlight Colony, Panchseel Marg, Masjid Moth, Mayur Vihar, Manassarovar Marg etc. But there are localities where SFS housing dominates with no EWS-Janta housing and a low incidence of LIG housing e.g. Vikaspuri, Kilokri, Hauz Khas, Basant Enclave, Yussof Sarai, Siddhartha Extension, Greater Kailash, Yamuna Apartment, Vasant Vihar, Siddhartha Enclave, Alaknanda, Sukhdev Vihar, Kishan Garh, Gautam Nagar, Mall Road, Saket, Mandakini Enclave, and Vasant Kunj. While SFS houses comprises only 17.6% of total of all category houses of DDA 100% of the housing activities in the relatively affluent areas is earmarked for SFS, with the exception of Vikaspuri and Kilokri.

corresponding to this a list of 36 areas that have 100% of their housing for the EWS-Janta Category is also given in appended table. The value of LQ for these areas is 3.28 when EWS housing accounts for 30.49 per cent of DDA's total housing. A comparison of the lists of areas - one exclusively for the SFS and the other exclusively for the EWS-Janta reveals that the former are characteristically much more attractive (with reference to accessibility as well as infrastructural characteristics as against the

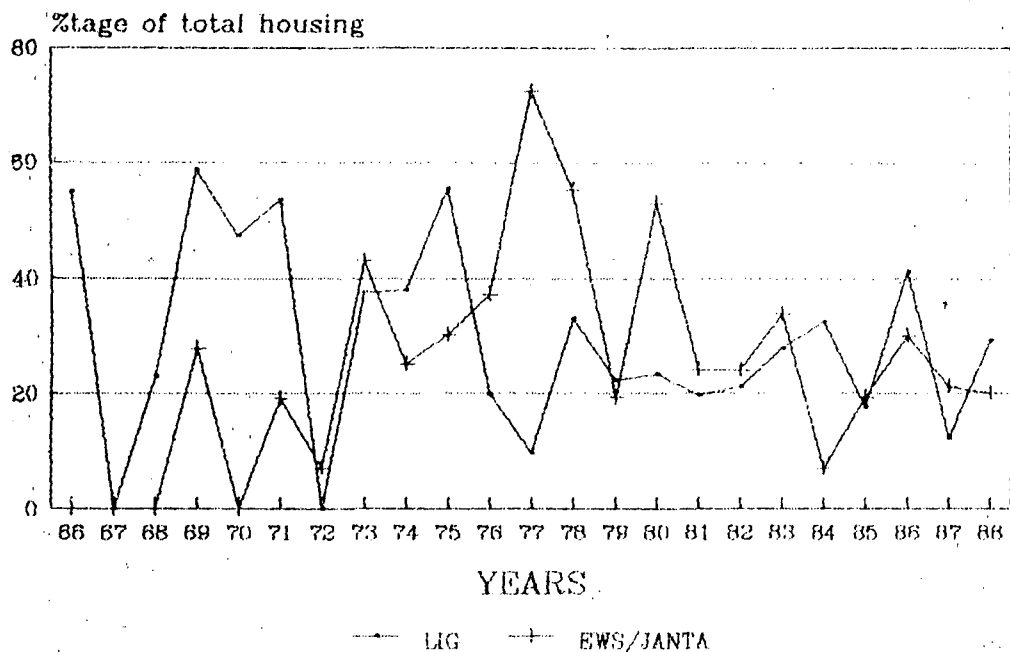
D D A'S HOUSING :1978-89

CATEGORY & YEARWISE BREAK-UP



D D A HOUSING WING

DDA HOUSING FOR LIG & EWS 1966-67 to 1988-89



HOUSING WING DDA

latter areas. Thus, the housing policy of the DDA does not reflect an attempt to ensure an optimal mix of houses for people in different income groups. It is evident that the weaker sections of the society have been pushed to the locations with poor infrastructural facilities and inadequate accessibility.

This is further established by the low value of LQ (0.5) indicating low share of EWS-Janta housing in East of Kailash, Pankha Road, Wazirpur, Malviya Nagar, Janakpuri and Vasant Kunj. All these localities are upcoming attractive residential areas. Fair concentration of EWS-Janta in Nandana Agri, Dilshad Garden, Paschimपुरi, Bodella, Rohini and Madanpur Khadar. High concentration of EWS-Janta housing are found in Gazipur, Madangier, Modipur, Katwaria Sarai, Jahangirpur and Sarai Rohilla.

It is also seen that the areas having low concentration of EWS-Janta housing are more attractive in terms of accessibility to basic services than the areas having LQ value greater than 1.

It appears that DDA has not been able to evolve a residential policy in accordance to its socially optimal land use framework.

Housing constructed by the DDA over the time period from 1966-67 to 1988-89 shows that while 17.6% of them has been under the SFS, LIG housing accounted for 27.63% while EWS-Janta housing accounted for 30.49%. Again it is to be taken into account that SFS started late in 1977. It accounted for 21.03% of the total houses construction during 1977 - 1989. On the otherhand, the LIG &

EWS-Janta category have never been able to claim a dominant portion of the total units built inspite of the schemes being floated since the inception of DDA's housing activity.

Year-wise data of DDA's housing activity reveals that in the initial stages the progress was extremely sluggish. In the first five years of its operation, only 5605 dwelling units were constructed. During the next five years, the number increased to 24435 with a growth rate of 77.06% . The following five year period from 1976-77 to 1980-81 registered a growth rate of 40.89% whereby the number of dwelling units increased to 34428. The next five year period registered a high growth rate of 108.03% which is perhaps the only time DDA took serious note of its obligations. By the year 86-87, the supply of houses registered a record low level when only 8825 units were constructed. During the following two year's the rate of house construction was again satisfactory, in 1987-88 the growth rate shot-up to 112.5% and 88-89 the growth rate was 27.57%. During the last two years viz. 1987-88 and 1988-89, the share of SFS housing was impressive. (38.71% and 37.98%). Similarly during the 5 yearly period 80-81 to 85-86 when DDA's housing activity reached a record peak, the SFS houses contributed considerably towards it. It is thus obvious that the occasional spurt in the housing activity of DDA has come about not because of its involvement in EWS housing but due to success in SFS housing in a big scale in certain years.

Year-wise break-up of housing by different categories, shows that there has never been a consistent effort to increase the supply under LIG and EWS categories. In the initial stages house building activity itself has been quite slow but LIG housing had a fair share of approximately 50% until 1975-76. Thereafter its percentage share went down to an average of less than 30%. In fact over the entire time period only 4 years can be identified when larger share of the housing activity was claimed by ^{this} category, namely 73-74 (43.1%), 77-78 (72.42%), 78-79 (55.3%) and 80-81 (53.06%). For the other years ^{it} was around its all time average of approximately 30.49%. The contention of the exercise is that DDA's housing policy has a definite bias towards the SFS category which has been carried out at the cost of other programmes.

CONCLUSION

CONCLUSION:

The present study makes an attempt basically to analyse the experience of public intervention in land and housing market in Delhi, focussing on the question of shelter for the economically weaker sections of the population.

In the beginning evolution of the land market in Delhi has been analysed. It was found that from 1937 to 1955 the land market functioning under the limited control of the DIT was unable to provide adequate shelter ^{for} the poor. It is argued that the land policy followed by the public institutions did not have an egalitarian base. The housing situation worsened after 1947 with the exodus of political refugees and growing in-migration from all parts of the country. This made the need for public intervention absolutely imperative. Thus, DDA emerged as the apex planning body for Delhi with two principal purposes: one, the execution of the Delhi Master Plan (61-81) and two, land development and disposal in Delhi.

After the discussion with land market a critical analysis of the land policy in Delhi has been made. An exercise to analyse the variation in land acquisition that the level of non-agricultural activities, lower order infrastructural facilities etc. have a significant effect on land acquisition.

Subsequently, the spatial and temporal trends of land prices in Delhi has been analysed. While examining the national scenario with the help of HDFC data it was found that spatial disparity in

land prices within the metropolitan cities are not very high. But, in case of Bombay high and increasing spatial disparity was noted. Similar was the case of Delhi (analysed using DDA data) which recorded high disparity in land prices. In most of the regions considered the average growth of land price ranges between 28% and 30%. An analysis of land price data at different points of time indicated that disparity in space has increased.

Finally, an analysis of the housing situation in Delhi is made. The aspects that were studied here were a) the housing policies of the DDA for the higher income, middle income, lower income groups and the economically weaker sections of population b) a spatial distribution of EWS/Janta housing in DDA operated areas and c) a temporal analysis of the performance of DDA in house construction. It is found that DDA's programme for the MIG, LIG and EWS has not been properly implemented. This has resulted in severe backlog. At one stage the DDA had to stop its initial programme namely the 'General Housing Scheme' and replaced it by the 'New Pattern Scheme'. This resulted in transfer of registrants from the 'General Housing Scheme to both the 'New Pattern Scheme' and 'Self Financing Scheme'. As a result a complex situation was created which prevented estimation of housing demand taking into account registrants in different housing schemes.

The spatial analysis of DDA's housing activity shows that

EWS/Janta houses have been concentrated in a few localities. These localities are characteristically much less attractive than those where EWS-Janta housing is nominal or absent. The temporal analysis reveals that performance of DDA housing for the SFS housing is most satisfactory. It appeared that LIG and EWS housing programmes has suffered particularly since the SFS housing programmes have been floated.

Basically the present study focuses on three major issues a) performance of DDA in providing land to the socially desired class, b) performance of DDA in providing housing for the EWS and LIG, and c) compensation for land acquisition made as a part of land policy in Delhi.

It is evident from the data available on land disposal to different income groups that the policy or the principles that were announced were not followed. While in practice it was maintained that land would be disposed in the ratio of 50:30:20 to the LIG, MIG and HIG, respectively, analysis of the data reveals and upto March '82 47.1% of the land had gone to the HIG while the MIG and LIG received 21.1% and 20.9% of land disbursed by the DDA. Auctioning of land, as a part of the revolving fund policy, to earn money for the fund is a favourable decision, but the fact that it has only helped increase of the revolving fund. This fund has not been utilised providing land to the socially & economically vulnerable sections of the population.

The study further reveals that the master plan had proposed construction of 7 lakhs dwelling units over a period of 20 years. Since DDA took up housing activity in 1966-67 it could construct only 1,80,565 dwelling units till 88-89, which includes 26,614 SFS dwelling units. Though the DDA has constructed 30.49% houses for the EWS and 27% houses for the MIG which is definitely an achievement, it still falls short^{of} the target. An analysis of DDA's housing policies reveals that the SFS schemes have fared much better than the schemes meant for the MIG, MIG, LIG and EWS. This is principally because the former is a time-bound programme and enjoyed a steady flow of finance. A similar kind of programme for the socially desired groups is also warranted.

Though compensation for land acquisition is a matter of policy fixed at the administrative level, an exercise to explain compensation amounts by 'infrastructures was conducted. This was done under the premise that value of land may be fixed based on its future use. It was found that compensation amount had no relationship with economic or infrastructural indicators. It is a common grievance that compensation made for acquisition is unfair. This is particularly due to the long gap between notification and acquisition where by compensation is made based on market value fixed at an earlier date. Again it is irrational to fix compensation for land acquisition based on public amenities to be provided on the land once it is transformed for urban use. It is therefore important to reduce the time gap between land notification and acquisition, to ensure fair compensati

The limitations of the present study are the following:

a) Although a detail account of pre-determined prices for different years over space was obtained and the components of 'pre-determined Rates' were deciphered, how neighbourhood and accessibility characteristics affect land price could not be studied. This is principally due to lack of data on the abovesaid characteristics.

b) An analysis of DDA's financial performance and annual budget could have revealed the impediments in the provision of LIG and EWS housing. This again can be attributed to lack of information available in the abovesaid areas.

Table : 1

Growth of India's Population

<u>Sl. No.</u>	<u>Year</u>	<u>Population (in million)</u>	<u>Percentage decadal Growth</u>
1.	1961	439.24	21.5
2.	1971	548.16	24.8
3.	1981	685.18	25.0
4.	1991 (Expected)	821.00	19.85

Source: Census of India, 1981.

Table : 2

Percentage of Delhi's Urban Population
to India's Urban Population

Sl. No.	Year	Delhi's urban population as percentage to national urban population
1.	1961	0.54
2.	1971	0.66
3.	1981	0.84
4.	1991 (Expected)	1.03

Source: PPW, DDA.

Table: 3

RATE OF GROWTH IN STATE INCOME, PER CAPITA INCOME AND
CONSUMER PRICES IN DELHI: 60-61 TO 80-81(PERCENTAGE)

	1960-61 TO 1970-71	1970-71 TO 1980-81
1. State Income		
* At Current Prices	11.08	14.69
* At Constant Prices	5.07	6.24
2. Per Capita Income		
* At Current Prices	6.50	9.96
* At Constant Prices	0.72	1.87
3. Consumer Prices	7.02	8.05
4. Cost of Residential Buildings	5.80	9.42

TABLE : 4 INDUSTRIAL PROGRESS IN DELHI

ITEMS	1970-71	1975-76	1976-77	1977-78	1978-79	1979-80
No. of Industrial Units (000)	26	37	37	40	41	42
Investment Rs.(Crores)	190	549	550	600	650	700
Production(Rs. Crores)	380	1024	1025	1200	1430	1700
Employment (000)	215	305	300	325	350	375

Delhi Statistical Hand Book 1981,
Bureau of Economics & Statistics. B.A.

TABLE 5

UTILISATION OF LAND IN DELHI

CLASSIFICATION	1960-61	1965-66	1970-71	1975-76	1977-78	1978-79	1979-80
Area according to village papers prof. survey	147952	-do-	147612	-do-	-do-	-do-	-do-
Forests	1415	-do-	1413	1434	-do-	-do-	-do-
AREA NOT AVAILABLE FOR CULTIVATION	34496	59040	47314	48865	50329	47123	53504
1. Land put to non-agro uses	33469	27786	34207	34868	32500	32905	35675
2. Barvan Uncultivable Land	1207	31254	13107	10997	17829	14218	17829
OTHER UNCULTIVATED LAND EXCLUDING FALLOW LAND	18138	2749	3602	2228	1957	2006	2240
1. Permanent postures and other grazing Land	4863	356	402	448	448	448	448
2. Land under misc. tree crops	-	-	41	900	781	797	1064
3. Cultivated waste Land	13275	2397	3159	880	728	771	728
Fallow Land	6497	4526	15943	15276	24376	24073	36234
Net Area sown	87406	80222	80510	82685	69392	72842	54076
Area sown more than once	26076	19504	36075	36835	30949	44467	28972
TOTAL CROPPED AREA	113482	99726	116585	119520	100341	117309	83048

SOURCE: CENCUS OF INDIA - 1981.

Table: 6

EXPENDITURE ON SOCIAL SERVICES (Rs. LAKHS)

	TOTAL	EDU.	HEALTH	HOUSE	URB. DEV.	WATER/ SEW	HOUSING RURAL LANDLESS OUTLAY	EXP.	SLUM IMPROVEMENT OUTLAY	EXP.
1980-81	12816.72	1666.46	750.92	1292.01	789.0	2141.0	5.0	13.00	110.0	110.0
1981-82	17866.59	2034.42	1340.80	1851.88	765.0	2576.63	5.0	5.0	200.0	314.0
1982-83	21393.63	2561.84	1539.18	1654.09	3258.98	2916.0	5.0	10.5	220.0	217.98
1983-84	27848.49	3863.23	2698.40	1976.05	3275.0	3424.77	17.0	15.0	290.0	300.0
1984-85	29000.00	4451.0	2898.0	2200.0	3240.0	4106.0	NA	6.0	NA	NA

SOURCE: DELHI STATISTICAL HANDBOOK-1981.

Table:7

Income Distribution of Households in Delhi-1981

<u>Income Category</u>	<u>All Households</u>	<u>Tenant Households</u>
< 600	36.12	38.30
601 - 1000	29.86	29.40
1001 - 2000	23.77	22.20
2001 - 5000	9.47	8.70
> 5001	0.86	1.40

Source: Seminar on Shelters Delhi -2001, DDA, 1982.

Table: 8

EXPENDITURE ON HOUSING PUBLIC AND PRIVATE
SECTORS IN INDIA IN THE FIVE YEAR PLANS.

PLAN PERIOD	EXPENDITURE (Rs. in Crores)			Investment in housing as percentage to investment to economy
	Public Sector	Private Sector	Total	
1	2	3	4	5
First Plan(1951-56)	250	900	1150	34
Second Plan(1956-61)	300	1000	1300	19
Third Plan(1961-66)	425	1125	1550	15
Fourth Plan(1969-75)	625	2175	2880	12
Fifth Plan(1974-78)	796	3640	4436	9
Sixth Plan(1980-85)	1491	11500	12991	8
Seventh Plan(1985-90)	2458	NA	NA	NA

Source: i] Prominent Facts on Housing in India, 1984, National Buildings, Organisation and UN Regional Housing Centre ESCAP, Government of India, New Delhi, 1984,p.6

ii] Seventh Five Year Plan 1985-90, Vol.II, Planning Commissioner, Government of India, New Delhi, 1985,p.296

Table: 9

ESTIMATED NUMBER OF HOUSEHOLDS, HOUSING STOCK AND
HOUSING SHORTAGE IN INDIA(RURAL,URBAN,TOTAL) IN 1985

(in lakhs)

S.No.	ITEM	RURAL	URBAN	TOTAL
1	2	3	4	5
1.	Households	994	301	1295
2.	Housing stock	892	263	1155
	a] Pucca	173	180	353
	b] Semi-pucca	342	65	407
	c] Serviceable kutcha	299		
	d] Unserviceable kutcha	78	18	395
3.	Housing shortage			
	i] Considering category (a) alone as useable housing stock	821	121	942
	ii] Considering categories (a)+(b) as useable stock	479	56*	535
	iii] Considering categories (a)+(b)+(c) as useable stock	180	56*	236

*Kutcha housing stock in the urban area is excluded from useable housing stock.

Source: Handbook of Housing Statistics 1980, National Building Organisation and UN Regional Housing Centre ESCAP, Government of India, New Delhi, 1981, p.23

TABLE 10: DISTRIBUTION OF LAND TO DIFFERENT CATEGORIES
IN DELHI (up to March 1982)

CATEGORY	No. OF PLOTS	AREA (Acres)	PERCENTAGE THE TOTAL
1. Auction to the High Income Group	9,570	602.7	47.1
2. Alternative Allotment	2,950	138.9	10.9
3. Middle Income Group	5,820	269.6	21.1
4. Low Income Group	14,669	57.2	20.9
TOTAL	33,009	1,278.4	100.0

SOURCE: REVOLVING FUND AS A TECHNIQUE OF FINANCING
LAND DEVELOPMENT: A CRITIQUE (G. JHA).

Table:11 DELHI DEVELOPMENT AUTHORITYLAND SALES BRANCH (RESDL.)STATEMENT SHOWING THE NUMBER OF PLOTS DISPOSED OF YEAR WISE

METHOD OF DISPOSAL	TOTAL DISPOSED OF UPTO 31st MARCH, 1975	1975-76	1976-77	1977-78	1978-79	1979-80	1980-81	1981-82	1982-83	1983-84	1984-85	1985-86	1986-87	1987-88	1988-89	1989-90	TOTAL
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Auction	7313	188	207	224	475	462	125	576	122	158	152	620	425	241	252	-	11540
Alternative Allotment	2123	-	-	-	297	179	245	106	314	104	614	53	836	146	180	748	5945
L.L.C.	412	10235	30	-	2764	333	803	92	184	14	5	-	-	-	-	-	14872
M.L.C.	3220	2555	30	-	-	8	3	4	31	12	-	-	-	-	-	-	5863
TOTAL	13068	12978	267	224	3536	982	1176	778	651	288	771	673	1261	387	432	748	38220

Table:12

ROHINI SCHEME PLOTTED IN 1981 - FIRST DRAW OF PLOTS WAS MADE IN JULY, 1982 AND SUBSEQUENT DETAIL DRAW WISE IS AS UNDER

	<u>July'82</u>	<u>Sept'83</u>	<u>22.12.84</u>	<u>5.10.87</u>	<u>5.10.89</u>
	1st draw	2nd draw	3rd draw	4th draw	5th draw
EWS	4610	3184	2728	1273	900
LIG	4078	4711	1368	2483	1740
MIG	1598	2208	960	1531	2064

SOURCE : LAND SALES BRANCH, DDA.

Table:13

SPATIO- TEMPORAL ANALYSIS OF LAND PRICE IN DELHI.

STATEMENT SHOWING AVERAGE RATE IN RUPEES PER SQ. MTR. FETCHED IN AUCTION.

	1976	1977	1978	1979	1980	1981-82	1982-83	1985	1986	1987	1988	1989	
1. Pitam Pura	213	235	311	359	828	1033.04	997.12	1452.50	2273	3874.4	3710.83	4648.94	
2. Paschim Puri	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981-82
	71	80	129	132	194	322	238	217	182	276	330	668	1005
	1982-83												
	1082.20												
3. Yamuna Vihar	1981-82	1982-83	1985	1986	1988	1989							
	569.24	582.49	1209.25	1375.95	2625.24	2703.28							
4. Vikas Puri	1975	1976	1978	1979	1980	1981-82	1982-83	1985	1986	1988			
	151	185	221	327	758	790.15	964.97	1232.95	1681.75	3773.58			
5. East of Kailash	1965	1971	1972	1973	1974	1976	1980	1985	1988				
	95	254	321	299	428	378	1885	1806.62	12044.13				
6. Prashant Vihar	1981-82	1982-83	1985	1986	1987	1988	1989						
	1114.07	877.25	1317.05	2238	3193.68	3468.65	5307.66						
7. Shalimar Bagh	1976	1977	1978	1979	1980	1981-82	1982-83	1985	1986	1987	1988	1989	
	291	317	458	588	1143	1585.86	1743.55	1716.45	2428.0	4102.68	4663.31	5223.60	
8. Safdarjung	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
	55	82	152	120	145	165	221	235	317	348	388	364	486
	1977	1978	1979	1980	1981-82	1982-83	1985						
	608	826	1305	2182	3260.37	3363.62	3079.70						
9. Naraina	1964	1965	1966	1967	1968	1969	1970	1971	1973	1974	1975	1980	1986
	49	46	77	111	114	118	152	216	248	283	336	1317	4428.35
	1987												
	4224.56												

SOURCE: Office of Land Commissioner.

Table:14 LINEAR TEMPORAL ANALYSIS OF LAND PRICE IN DELHI

S.No.	No. OF OBSERVATIONS	TIME PERIOD	R SQUARD	ADJUSTED R SQUARED	COEFFICIENT		STANDARD ERROR		T.STAT		2 TAIL SIGNIFICANCE		
					C	YEAR	C	YEAR	C	YEAR	C	YEAR	
1.	Pitam Pura	12	1976-89	0.86	0.65	-856.9	364.1	355.9	44.9	-2.41	8.11	0.037	0.00
2.	Paschimpuri	14	1969-83	0.68	0.66	-134.8	64.9	108.7	12.8	-1.24	5.08	0.238	0.00
3.	Yamina Vihar	6	1981-89	0.95	0.93	-8.21	337.58	209.2	40.64	-0.04	8.3	0.971	0.001
4.	Vikas Puri	10	1975-88	0.75	0.72	-623.5	243.6	379.8	49.7	-1.64	4.9	0.139	0.001
5.	East of Kailash	9	1965-88	0.56	0.49	-2588.0	408.0	1785.4	138	-1.44	2.95	0.190	0.021
6.	Prashant Vihar	7	1981-89	0.85	0.82	-206.2	574.5	571.2	108.2	-0.361	5.309	0.733	0.003
7.	Shalimar Bagh	12	1976-89	0.89	0.87	-769.5	403.54	363.42	45.82	-2.11	8.8	0.060	0.000
8.	Safdarjung	20	1964-85	0.69	0.67	-762.4	156.2	297.8	24.7	-2.56	6.33	0.020	0.000
9.	Naraina	13	1964-87	0.79	0.77	-927.7	184.9	347.12	28.43	-2.67	6.5	0.022	0.000

Table:15 EXPONENTIAL TEMPORAL ANALYSIS OF LAND PRICES DELHI.

S.No.	No. OF OBSERVATIONS	TIME PERIOD	R SQUARD	ADJUSTED R SQUARED	COEFFICIENT		STANDARD ERROR		T. STAT		2 TAIL SIGNIFICANCE		AVERAGE GROWTH RATE PERCENT-AGE
					C	YEAR	C	YEAR	C	YEAR	C	YEAR	
1.	12	1976-89	0.97	0.97	5.04	0.27	0.12	0.01	43.45	18.53	0.00	0.00	31.1
2.	14	1969-83	0.86	0.85	4.13	0.19	0.18	0.02	22.37	8.56	0.00	0.00	20.4
3.	6	1981-89	0.97	0.97	6.02	0.25	0.10	0.02	58.29	12.33	0.00	0.00	28.08
4.	10	1975-88	0.96	0.95	4.66	0.26	0.15	0.02	31.6	13.7	0.00	0.00	30.3
5.	9	1965-88	0.93	0.91	4.24	0.2	0.28	0.02	15.34	9.3	0.00	0.00	21.9
6.	7	1981-89	0.91	0.89	6.47	0.25	0.18	0.03	35.68	7.24	0.00	0.00	28.23
7.	12	1976-89	0.95	0.95	5.5	0.25	0.13	0.02	40.79	14.45	0.00	0.00	27.83
8.	20	1964-85	0.95	0.95	3.92	0.20	0.13	0.01	30.83	19.21	0.00	0.00	22.42
9.	13	1964-87	0.99	0.99	3.63	0.20	0.08	0.01	46.13	31.00	0.00	0.00	22.14

Table: 16 HUDCO HOUSING FINANCE

CATEGORY	MONTHLY HOUSEHOLD INCOME	AGENCIES ELIGIBLE	SECURITY	COST CEILINGS INCLUDING LAND COST (Rs.)	LOAN (PER CENT OF PROJECT COST)	NET RATE OF INTEREST	MAXIMUM REPAYMENT PERIOD (YEARS)	MAXIMUM PLINTH AREA (Sq.m.)	MAX PLOT AREA (Sq.M.) IN CITIES WITH POPULATION		MONTHLY INSTALMENT ON Rs.1000/- LOAN (APPROX.)
									Less than 4 lakhs	More than 4 lakhs	
1	2	3	4	5	6	7	8	9	10	11	
URBAN HOUSING											
EWS II	Upto 700	Housing Boards, Government/		15000	90	7.0	22	35	95	60	7.43
LIG I	701 to 1500	Development	Bank Guarant-	20000	85	8.5	15	55	140	100	9.85
LIG II	- do -	Authorities, City	tee or	30000	85	9.0	15	55	140	100*	10.14
MIG I	1501 to 2500	Improvement	Mortgage	60000	75	11.0	15	95	280	280	11.36
MIG II	- do -	Trusts, Municipal		100000	75	12.5	15	95	280	280	12.37
HIG	Above 2500	Corporations	- do -	2500000	60	13.5	15	185	420	420	13.03
		Public Sector, Undertakings, State Governments etc.									
WESI*	Upto 700	Housing Boards, Slum	- do -	6000**	100	5.0	22	-	-	-	6.25

* Site and Services including schemes in areas affected by natural calamities.

** Excluding land cost for site & service schemes.

SOURCE: Shelter, HUDCO Publication, January-March, 1990.

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Table: 17

L.Q. OF LIG/EWS HOUSING IN DDA OPERATED ZONES

		Hj	Hi	Hj/H	Hj/Hi	L.Q.
1.	Safdarjung	207	1082	0.304980	0.191312	0.63
3.	East of Kailash	133	981	0.304980	0.137575	0.44
5.	Gazipur	926	1114	0.304980	0.831238	2.73
6.	Pankha Road	655	8277	0.304980	0.079134	0.26
7.	Jhilmil	252	1068	0.304980	0.235955	0.77
8.	Wazirpur	312	3306	0.304980	0.094373	0.31
9.	Lawrence Road	1272	7371	0.304980	0.172568	0.57
10.	Madangir	1759	1790	0.304980	0.982681	3.22
11.	Madipur	3813	4065	0.304980	0.938007	3.08
12.	Rajouri Garden	2085	9741	0.304980	0.214043	0.71
13.	Malviya Nagar	392	7036	0.304980	0.055713	0.18
14.	Kalkaji	2064	7036	0.304980	0.293348	0.96
18.	Shaikh Sarai	524	2662	0.304980	0.196844	0.65
20.	Kalwaria Sarai	420	684	0.304980	0.614035	2.01
29.	Janakpuri	528	3467	0.304980	0.152293	0.50
30.	Jahangirpuri	1457	2129	0.304980	0.684358	2.24
35.	Nand Nagari	2482	5086	0.304980	0.488006	1.60
36.	Trilok Puri	560	9396	0.304980	0.059599	0.19
43.	Dilshad Garden	4003	11743	0.304980	0.340883	1.12
47.	Pitam Pura	1615	9272	0.304980	0.174180	0.57
48.	Shalimar Bagh	2378	8130	0.304980	0.292496	0.96
49.	Paschimpuri	3318	10634	0.304980	0.312018	1.02
50.	Sarai Khali	48	179	0.304980	0.268156	0.88
51.	Ashok Vihar	120	1143	0.304980	0.104986	0.34
52.	Bodella	2926	8282	0.304980	0.353296	1.16
60.	Sarai Rohilla	128	156	0.304980	0.820512	2.69
61.	Kalu Sarai	56	348	0.304980	0.160919	0.52
66.	Rohini	5066	11464	0.304980	0.441905	1.45
73.	Madanpur Khadar	58	186	0.304980	0.311827	1.02
81.	Sarita Vihar	808	3451	0.304980	0.234135	0.76
84.	Paschim Vihar	492	1756	0.304980	0.280182	0.92
106.	Vasant Kunj	120	7627	0.304980	0.015733	0.05

Table : 17.1

REGIONS WITH L.Q. = 3.28

1. Dakshinipur
 2. Jawalapuri
 3. Khayala
 4. Shakurpur
 5. Mangolpuri
 6. Guru Nanak CHBS
 7. Basant Village
 8. Sultan Puri
 9. Haiderpur
 10. Chaukhandi
 11. New S-emapuri
 12. Kalyan Puri
 13. Himmatpuri
 14. Pandaw Nagar
 15. Shahpur Jat
 16. Turkman Gate
 17. Avintaka
 18. Panjabi Bagh
 19. N.C.Road
 20. Sashtri Bagh
 21. Priya Darshini Vihar
 22. Pirah Garhi
 23. Raghbir Nagar
 24. Mangala Puri
 25. Anand Vihar
 26. Tigri
 27. Khirki
 28. Mathura Badarpur Road
 29. Todapur Dashghara
 30. Lado Sarai
 31. Chilla
 32. Bhai Nagar Coloney
 33. Bastsal
 34. Poasangipur
 35. Sarai Phase
 36. Chasi
-

Table:17.2

REGIONS WITH L.Q. = 0

1. Munirka
 2. Sunlight Colony
 3. Ragher Pura
 4. Prasad Nagar
 5. Ber Sarai
 6. Tamoor Nagar
 7. Panchseel Marg
 8. Masjid Moth
 9. Vill. Ram Pura
 10. Mayur Vihar
 11. Gulabhi Bagh
 12. Sarai Juliana
 13. Motia Khan
 14. Mansorvar Bagh
 15. Nirman Vihar
 16. Kirokari
 17. Niti Bagh
 18. Houz Khas
 19. Basant Enclave
 20. Yusuf Sarai
 21. Siddhartha Extention
 22. Greater Kailash
 23. Yamuna Apartment
 24. Basant Vihar
 25. Siddhartha Enclave
 26. Alaknanda
 27. Sukhdev Viahir
 28. Kishan Garh
 29. Gautam Nagar
 30. Mall Road
 31. Saket
 32. Mandakini Enclave
 33. Jaidev Park
 34. East of Loni Road
 35. Saidulajab
-

TABLE : 18 LIG & EWS HOUSING BY DDA - 1966-67 to 1988-89

	LIG	EWS - Janata
1966-67	55%	-
1967-68	-	-
1968-69	23%	-
1969-70	58.72	27.75
1970-71	47.27	-
1971-72	53.52	19.13
1972-73	-	7.03
1973-74	37.71	43.1
1974-75	48.04	25.12
1975-76	55.37	30.15
1976-77	19.8	37.27
1977-78	9.6	72.42
1978-79	32.9	55.30
1979-80	22.1	19.30
1980-81	23.21	53.06
1981-82	19.65	(414 slum) 23.98
1982-83	29.15	24.0
1983-84	27.7	33.83
1984-85	32.3	7.0
1985-86	17.56	19.26
1986-87	41.3	29.93
1987-88	12.17	21.06
1988-89	29.23	20.02

SOURCE : HOUSING WING, DDA.

Table: 19 YEAR WISE BREAKUP OF HOUSES CONSTRUCTED BY THE D. D. A.

YEAR	JANATA EWS/ESP	LIG	MIG	SFS	OTHERS	TOTAL
1966-67	-	88	72	-	-	160
1967-68	-	-	16	-	-	16
1968-69	-	260	878	-	-	1138
1969-70	975	2063	475	-	-	3513
1970-71	-	364	414	-	-	778
1971-72	1645	4602	2352	-	-	8599
1972-73	252	-	3331	-	-	3583
1973-74	2894	2488	1216	-	-	6598
1974-75	600	1152	646	-	-	2398
1975-76	379	696	182	-	-	1257
1976-77	1669	889	1920	-	-	4478
1977-78	2284	302	568	-	-	3154
1978-79	5108	3039	1009	-	-	9236
1979-80	246	756	2012	-	414	3428
1980-81	9040	3977	3260	720	135	17132
1981-82	5823	5804	3823	2925	2121	20496
1982-83	1592	1934	1368	1532	208	6634
1983-84	4305	3526	2849	2046	-	12726
1984-85	511	2364	1452	2968	-	7295
1985-86	3182	2900	5670	4767	-	16519
1986-87	2642	3646	2060	480	-	8828
1987-88	3960	2282	5264	7262	-	18768
1988-89	4792	6996	3052	9091	-	23931
TOTAL	51899	50128	43889	26614	2878	180665

SOURCE: HOUSING WING, DDA.

Table : 20

Category-wise allotment of housing by
D.D.A. upto January, 1990.

<u>Category</u>	<u>Total</u>
Janta (E.W.S.)	49736
L.I.G.	48943
M.I.G.	43777
H.I.G.	18956
	<hr/>
	172645
	<hr/>

Table : 21

Government Employees Rental Housing -
Classified by Employing Agencies : 1981.

<u>Organisation</u>	<u>No. of Dwelling Units</u>	<u>% Share in Total</u>
C.P.W.D.	49385	68.48
D.D.A.	1100	1.53
M.C.D.	1454	2.02
N.D.M.C.	2324	3.22
P & T	2800	3.88
Railways	8856	12.28
Delhi Admn.	1200	1.66
Police	5000	6.93
	<u>72119</u>	<u>100.00</u>

Source : PPW, DDA.

Table:22

SPATIAL VARIATION OF LAND PRICE IN SELECTED CITIES

Name of City	1986			1987			1988		
	Co-efficient of variation	Average land price (per Sq. ft.)	percentage of Growth	Co-efficient of variation	Average Land Price (per Sq. ft.)	percentage of Growth	Co-efficient of variation	Average Land Price (per Sq. ft.)	Percentage of Growth
Pune	0.38	256		0.38	303	1.18	0.35	364	1.20
Ahmadabad	0.26	179		0.24	193	1.08	0.25	223	1.16
Madras	0.23	230		0.23	270	1.18	0.21	311	1.15
Calcutta	0.18	172		0.14	216	1.26	0.13	267	1.25
Bangalore	0.26	303		0.28	391	1.29	0.28	429	1.10
Bombay	0.52	548		0.72	852	1.55	0.66	1058	1.24

Source: HDFC (Land price per Square ft.)

Table : 22.1

Spatial Variation of Land Price in Delhi

	1970	1973	1976	1980	1985	1988
No. of Observations	10	11	9	10	10	9
Mean	134.8	276.1	309.55	1150.4	1786.3	4829
Standard Deviation	43.6	60.32	105.84	567.96	741.47	2657.7
Co-efficient of variation	0.32	0.22	0.35	0.49	0.42	0.55

Source : DDA (Land price per sq.mtr.)

Table: 23

Comparative Study of Reserve Rate of Land Prices

		<u>1981</u>	<u>1985-87</u>	<u>Growth Rate %</u>	<u>1987-89</u>	<u>Growth Rate %</u>
Area outside the extended commercial Zone- Parliament Street	Central	2000	2200	10	8000	263.64
Ajmal Khan Road	West	2000	2200	10	5000	127.27
Khan Market	South	2000	2200	10	6000	172.73
Defence Colony	South		2200		5000	127.27
Patel Nagar (E.W.S.)	West	1600	1760	10	5000	184.10
Bus Stand Area Extn.	North	800	880	10	2500	184.10
Kingsway Camp	North	800	880	10	2500	184.10
Gulabi Bagh	North	800	880	10	2500	184.10

Source : Office of the Financial Advisor: Land Department DDA.

Table: 24

TEMPORAL TREND OF COMPENSATION FOR LAND ACQUIRED IN DELHI U.T.

<u>Sl. No.</u>	<u>Time Period</u>	<u>R Squared</u>	<u>Equation.....</u>	<u>t Value</u>
1. Delhi Aggregate	1947-88	0.59	$Y = -10648.9 + 199.4t$	7.5
2. Delhi City	1948-86	0.17	$Y = -77805.4 + 502.5t$	2.8
3. Narela	1965-88	0.55	$Y = -29495.8 + 434.34t$	5.17
4. Shahdara	1951-88	0.15	$Y = -45750.3 + 303.1t$	2.49
5. Palam North	1953-88	0.32	$Y = -10471.6 + 193.9t$	3.98
6. Palam South	1955-88	0.44	$Y = -12722.2 + 214.8t$	5.03
7. Meharauli East	1951-88	0.44	$Y = -8257.21 + 155.9t$	5.34
8. Meharauli West	1957-78	0.43	$Y = -8272 + 145.7t$	3.92
	1980-88	0.29	$Y = -49375.8 + 647.4t$	1.67

Table: 25 STEP-WISE REGRESSION : EXPLAINING ACQUIRED LAND BY INFRASTRUCTURE

S.No.	VARIABLES ENTERED	MULTIPLE R	R SQUARED	ADJUSTED R SQUARED	F VALUE
1.	Non-Cultivated Area	0.55	0.31	0.30	68.71
2.	Non-Cultivated Area Density	0.59	0.35	0.34	41.81
3.	Non-Cultivated Area Density Other Amenities	0.61	0.38	0.37	31.40
4.	Non-Cultivated Area Density Other Amenities Distance	0.63	0.40	0.39	25.62
5.	Non-Cultivated Area Density Other Amenities Distance Non-Agricultural Workforce	0.64	0.41	0.39	21.35

Table: 26

EFFECT OF INFRASTRUCTURE ON LAND PRICE *
CO-RELATION MATRIX

	LANDPRIC	DENSITY	EDUCATION	MEDICARE	WATER	DISTANCE	NCAREA	NAWORKPC	OTH_EMIN
LANDPRIC	1.000								
DENSITY	-.066	1.000							
EDUCATION	-.101	.318	1.000						
MEDICARE	-.044	.434	.454	1.000					
WATER	-.039	-.005	-.092	-.048	1.000				
DISTANCE	.089	-.194	-.060	-.171	.170	1.000			
NCAREA	-.033	.282	-.122	.261	-.012	-.020	1.000		
NAWORKPC	.083	.498	.218	.279	.073	-.140	.018	1.000	
OTH_EMIN	-.114	.108	.022	.357	-.151	-.166	.560	.075	1.000

* MARKET PRICE FOR COMPENSATION.

ANNEXURE : 1

Fixation of the disposal cost of the Flats/Dwelling Units

1) The following elements are taken into account for fixing the disposal cost of the flats/dwelling units:-

- | | |
|--------------------------|---|
| i) Cost of Construction | Cost of Construction including undischarged liabilities, if any. |
| ii) Overheads | |
| i) Departmental Charges | 10% for MIG/LIG.
6.5% for Janta/EWS.
No charges for CSP. |
| iii) Interest Charges | MIG-9% p.a. for a period of nine months.

LIG-7½% p.a. for a period of nine months.

Janta/EWS-6% p.a. for a period of nine months.

No interest charges for CSP. |
| iv) Admn. Charges | MIG/LIG-1% p.a. for a period of one year.

No charges for Janta/EWS/CSP categories. |
| v) Cost of Land | Cost of land at the rate of Rs. 62/- per sq. Mtrs. (pre-determined rate) of the gross area under Group Housing Pocket. |
| vi) Community Facilities | MIG/LIG-Rs.1/- per sq.ft. of the plinth area subject to a maximum of Rs.500/- for LIG and Rs.750/- for MIG. |

- | | |
|--------------------------------|---|
| vii) Service Charges | 2½% p.a. of the amount of premium of land will be recovered annually till the services are handed over to the MCD. |
| viii) Inter-Category-Subsidies | 5½% of the total cost of Dwelling units/Flats to be recovered from the allottees of Dwelling Units/Flats in SFS, MIG & LIG categories on ground floor to be deposited in a separate fund for the benefit of EWS Housing Schemes. |
| ix) Equalisation Charges | These are added to the cost of land at the following rates:- <ol style="list-style-type: none"> i) South and Central Delhi areas @ Rs. 100/- per sq.mtr. of plinth area. ii) North and West Delhi areas @ Rs. 50/- per sq.mtr. of plinth area. iii) East Delhi and other far-flung areas like Bodella, Rohini etc. No Charges. |

Note: (1) For Self Financing Schemes elements relation to MIG Categories are to be taken into account except for items (iii) & (v). No interest charges are added as the flats are constructed with the financial participation of the beneficiaries. As regards land with effect from 23.1.85, cost of land from the allottees of Dwelling Units under Self Financing Scheme is to be charged at the rates fixed for the allotment of land to Co-operative Group Housing Societies in the various areas from time to time as indicated in Annexure-VIII.

Payment of Ground Rent

The ground rent from the allottees of the flats/houses is recovered at Rs.1/- per annum for the first two years and thereafter @ 2½% per annum for/premium of land as shown in the disposal price

of the flats/houses. Out of this recovery of 2½%, the DDA keeps 1% to cover administrative charges incurred by the Authority in the maintenance of the accounts & effecting recovery of ground rent on behalf of the Delhi Admn. and 1½% is credited quarterly to the Revolving Fund.

Other Charges

The Departmental, Administrative and interest charges which are taken into account for working out the disposal cost of dwelling units are as under:-

<u>Category of the Dwelling Units</u>	<u>Departmental Charges</u>	<u>Administrative Charges</u>	<u>Interest on Capital</u>
M.I.G.	10%	1%	9%) (for a
L.I.G.	10%	1%	7½%) period
EWS/Janta	6.5%	Nil	6%) of nine
C.S.P.	Nil	Nil	Nil) months)

Maintenance Charges

Allottees of the Dwelling Units are required to pay 2½% per annum of the cost of land for the maintenance of the services till they are transferred to the MCD/NDMC.

Inter Category Subsidies to the Allottees of Flats/Dwelling Units

The allottees of Flats/Dwelling Units on ground floor flats in SFS, MIG & LIG categories are charges 5½% of the total cost of the Dwelling Units extra. This is a sort of consideration for the extra benefits they get in having the allotment on ground floor. The amount so received is transferred to EWS fund and is used to subsidise the cost of the Dwelling Units under EWS and CSP categories by Rs.2000/- each. This subsidy in addition to about Rs 1200/- that is given to the EWS and CSP categories through lesser charge on account of

departmental, administrative and interest charges.

The following elements are added for calculation of revised cost:-

- a) Equalisation Charges: At the rate of Rs. 100/- per sq. mtr. of plinth area rounded to next 100 rupee in the case of flats in South Delhi and Central Delhi and @ Rs.50/- sq. mtr. of plinth area rounded to the next hundred rupee in the case of flats located in North and West Delhi. No such charges will be levied in the case of trans-yamuna area, other far flung area like Bodella & Rohini. In the case of flats under Janta category, Charge on this account is recovered @ 50% of the above said rates. These rates were approved by Housing Committee in Resolution No. 447 dated 24.10.1980 and are presently being added in fixing disposal cost of the built up flats. Where these charges are already included in the old cost, these are not added again.
- b) Service Charges: At the rate of 2½% per annum of premium for land. This rate has been approved by the Housing Committee in its Resolution No. 429 dated 28.8.1978.
- c) Maintenance Charges: At the rate of 2½% per annum of the cost of construction only. This rate is the approved rate of CPWD for annual maintenance.

Contd....

- d) Interest on Capital: At the rate of 7½% per annum of of the cost of flats Minus.
- e) Depreciation Charges: At the rate of 2½% per annum of the cost of construction only is allowed for old/left out flats.
- f) Property Tax: The matter regarding provision of property tax in the case of reallocated flats be examined jointly by the DDA and the MCD. The Chairman, DDA has to take a decision as to whether it should be included in the cost of these flats.

ANNEXURE : 2
Pre-determined Rates

(Rate in 1969)

Statement Showing the Prices in Various Residential Schemes

Name of the Scheme	Reserve rate (Rs.)	Rate for LIG (Rs.)	Rate for MIG (Rs.)	Alternative allotment (Rs.)
Naraina	55.20	-	-	55.20 to 57.00
Wazirpur Ph.I	57.60	28.80	45.60	57.60 to 59.40
Jhilmil Tahirpur Ph.I	46.80	40.00	46.80	46.80 to 48.60
Jhilmil Tahirpur Ph.II	52.80	-	-	-
Malviya Nagar	72.00	48.00	72.00	72.00 to 73.80
Pankha Road	55.20	36.00	43.00	55.20 to 57.00
Safdarjung	68.40	46.80	-	68.40 to 70.20
Friends Colony	76.80	-	-	76.80 to 78.60
East of Kailash	66.00	-	-	66.00 to 67.80
Masjid Moth	68.40	31.20	49.20	68.40 to 70.20
Tagore Garden	45.60	40.00	50.00	-
Punjabi Bagh	60.00	42.00	60.00	-
Shalimar Bagh	-	-	-	-
Rajouri Garden (Group Housing Chunk)	-	-	-	-
Paschimpuri	-	-	-	-
Bodela	-	-	-	-
Gonda	-	-	-	-

Predetermined rates for Residential Plots
effective from 1.4.1981 to 31.3.1985

(per sq. mtr.)

Sl. No.	Name of Scheme	L.I.G. (Rs.)	M.I.G. (Rs.)	For alternative plots measuring upto 200 sq. yds. (167 sq. mts.) (Rs.)
1.	Safdarjung	360-00	418-00	418-00
2.	East of Kailash	360-00	418.00	418-00
3.	Masjid Moth	360-00	418-00	418-00
4.	Malviya Nagar	360-00	414-00	414-00
5.	Pitampura	310-00	358-00	358-00
6.	Shalimar	310-00	358-00	358-00
7.	Vikaspuri	310-00	358-00	358-00
8.	Pankha Road	310-00	358-00	358-00
9.	Paschimpuri	310-00	358-00	358-00
10.	Hyderpuri (Prashant Vihar)	310-00	358-00	358-00
11.	Jhilmil Phase-I	260-00	304-00	304-00
12.	Jhilmil Phase-II	260-00	304-00	304-00
13.	Gonda (Yamuna Puri)	260-00	304-00	304-00
14.	Naraina	310-00	354-00	354-00
15.	Tagore Garden	310-00	358-00	358-00
16.	Bodela (Vikaspuri)	310-00	358-00	358-00
17.	Friends Colony	360-00	418-00	418-00
18.	Wazirpur (Ph.I, II & III)	310-00	358-00	358-00
19.	Rajouri Garden	310-00	354-00	354-00

Predetermined rates in respect of residential plots in different areas of Delhi/New Delhi w.e.f.1.4.85 to 31.3.87.

Sl. No.	Name of Scheme	L.I.G. per sq. mtr.	M.I.G. per sq. mtr.	Allotment of alternative plot measuring upto 167 sq. mtrs.
1.	Safdarjung	423-00	474-00	474-00
2.	East of Kailash	423-00	474-00	474-00
3.	Masjid Moth	423-00	474-00	474-00
4.	Malviya Nagar (Saket)	421-00	472-00	472-00
5.	Pitampura	368-00	419-00	419-00
6.	Shalimar	368-00	419-00	419-00
7.	Vikasपुरी	368-00	419-00	419-00
8.	Paschimpuri	368-00	419-00	419-00
9.	Pankha Road	368-00	419-00	419-00
10.	Hyderपुरी (Prashant Vihar)	368-00	419-00	419-00
11.	Naraina	368-00	419-00	419-00
12.	Jhilmil Phase-I	316-00	367-00	367-00
13.	Jhilmil Phase-II	316-00	367-00	367-00
14.	Gonda (Yamunapuri)	316-00	367-00	367-00

ANNEXURE : 3

WEIGHTAGE OF INFRASTRUCTURE

EDUCATION

P	Primary	3
M	Middle or Junior Secondary	4
H	Matriculation or Secondary	5
PUC	HS/Intermediate/Pre-University or Junior College	6
AC	Adult Literacy Class/Centre	4
I	Industrial School	6
C	College, Any College (Graduate level or above) like Arts, Science, Commerce, etc.	7
Tr	Training School	1

DRINKING WATER

T	Tapwater	10
W	Well Water	1
TK	Tank Water	2
HP	Hand Pump	1
TW	Tubewell Water	1
C	Canal	2
N	Nallah	1
R	River Water	2
F	Fountain	1
S	Spring	1
L	Lake	2

MEDICAL

RP	Registered Private Practitioner	2
D	Dispensary	3
PHC	Primary Health Centre	3
PHS	Primary Health Sub-centre	2
MCW	Maternity and Child Welfare Centre	2
H	Hospital	4
CHW	Community Health Worker	1
CWC	Child Welfare Centre	1
HC	Health Centre	1
SMP	Subsidised Medical Practitioner	2
NH	Maternity Home	1
FPC	Family Planning Centre	1

IRRIGATION BY SOURCE

TWE	Tubewell with Electricity	3
TW	Tubewell without Electricity	1
GC	Government Canal	3
WE	Well With Electricity	2
W	Well Without Electricity	1
TK	Tank	2
O	Others	1

OTHERS

N	Newspaper	4
M	Motorcycle/Scooter	2
C	Car/Jeep	3
T	Tractors	1

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