

# Appendix I

## ***Public land and property development and cross-subsidisation for low-income housing in Delhi***

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## Public Land and Property Development and Cross-Subsidisation for Low-income Housing in Delhi

K. Srirangan<sup>1</sup>

### Introduction

Delhi's public land, property development and cross-subsidisation for low and middle-income housing is unique in India.

In accordance with the Delhi Master Plan the Delhi Development Authority (DDA) was provided with statutory powers to acquire land at 'off market' rates, maintain a land bank for future development and auction land for non-residential uses. The policy was aimed at facilitating self-sufficiency in land development and sales. Profits drawn from the sale of this land are placed in a revolving fund, which is used to cross subsidise the DDA's low income housing programme. In contrast, other cities like Bombay, Madras and Calcutta depend on an urban land ceiling and cross subsidies provided by World Bank and other development agencies to fund their low income housing programmes.

Although Delhi's public land development and cross-subsidisation for housing is appreciated as a new model for land development in poor countries, it is widely argued that the Delhi's public land development and cross-subsidisation provides evidence for its inefficiency and failure to provide adequate housing for low income groups. It is stated that the ambitious attempt to develop a large number of commercial and industrial lands that provided larger profits than the non-productive residential use has created artificial scarcity of land for formal housing and increased the waiting period of beneficiaries. Apparently, this slow development of land and long delay in supply of formal land have become primary factors that encouraged unauthorised land developments and squatters.

This paper analyses the situation of public land and property development and the effects of cross-subsidisation for housing through public land development and allocation. The situation of public land and property development in Delhi is discussed in three subsections. The first section reviews the theoretical perspectives on cross-subsidisation for low income housing and conceptualises theoretical understanding of Delhi's cross-subsidisation through large-scale public land and property development. The second section discusses the situation of public land development and cross-subsidisation in Delhi. The third section discusses major effects of Delhi's cross-subsidisation for low income housing and assesses its success and failure in the provision of appropriate housing.

### 1.0 Theoretical perspectives on cross-subsidisation for low-income housing

The technique of providing housing subsidy through public land banking and public land development has been practised in many countries. A public development called the public Swedish municipal leasehold system has existed since 1924 (UNCHS, 1983:45), and Delhi's large-scale public land acquisition, development and disposal has existed since 1961 (Maitra, 1991). Similarly, public developments are practised in the Netherlands, Singapore, USA and Poland. However, the cross-subsidisation element is dominant in the case of Delhi where profits from public land and property development were utilised for housing for low-income households. It is also interesting to note that the sale of sites for private development in Singapore provides a unique experience in regard to successful public urban development and redevelopment of the city.

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Public land development (often called land banking) and cross-subsidisation is recommended by many expert committees as a viable tool for ensuring planned development, providing access to land for housing to all and especially to economically disadvantaged households (Habitat-II Delhi, 1996; UNCHS, 1983; Flatt et al., 1982; UNCHS, 1976). The literature suggests that public development has not yielded the desired effects in many countries. Ratzka (1981) after analysing public land banking and development in Stockholm and residential leasehold allocations as a public finance and housing subsidy instrument inferred that the inefficiency of subsidising through below-market fees has not in fact benefited many of the targeted low income groups. Rather it mostly benefited the middle and upper income brackets. However, Carr and Smith (1975) in their theoretical analysis of public land banking and the price of land concluded that the introduction of public banking will be able to reduce the price by reducing the level of speculation, allowing cheaper land assembly, and enabling lower carrying and servicing costs.

Hannah, Kim and Mills (1993) in their study on land use controls and housing prices in Korea identified that a substantial part of the rise in house prices has resulted from the government's tendency to under-allocate land to urban residential use, although part of government's surplus is used to subsidise low income housing within the same projects. This under-supply would make it possible for development projects to finance infrastructure investment through prices of land sold to developers, to pay the subsidies to low income rental housing in development projects, and to make government profit from urban development.

Therefore, in addition to the prime arguments over whether cross-subsidisation can be successful or not, and who (among private and public developers) can be efficient developers, it seems that the methods and means of cross-subsidisation can play a crucial role in achieving the objective of providing housing for low income households. The following section discusses the theoretical understanding of different methods and means of subsidisation for low-income households.

### 1.1 Different methods and means of cross-subsidisation for low-income housing

The literature widely recognises the need for cross-subsidisation for low-income groups. Hogan (1981) states that cross-subsidisation for low-income households also includes payment of money as an income supplement. Willis and Cameron (1993) observed that subsidies form a major element in housing and most subsidies are borne by the government. Furthermore, Willis and Cameron (1993) segregate subsidies into financial and economic subsidies. Financial subsidies are largely concerned with public exchequer payments to, or the absence of tax on, housing. Whereas economic subsidies are not concerned with cash flows from government to households nor tax losses as such, but with the more general concept of whether any difference exists between the market value of a house (its economic value or opportunity cost) and the amount actually paid or cost incurred by the household in its occupation of the property.

As noted by UNCHS (1984), whether it is a provision of direct subsidy in the form of a plot of land or building materials sold at below market prices; or indirect subsidies; or housing loans provided for low income groups through cross-subsidised interest rates, it seems to be difficult for most governments to provide subsidisation for housing due to lack of financial resources. This means that only a few housing projects can be implemented by the government and consequently fewer people can be reached with the limited available funds. However, UNCHS (1984) supports the idea that cross-subsidies from the sale of valuable plots at market prices can be expected to reduce the price of plots for low-income groups. Whichever the method of subsidisation, in developing countries where low income households outnumber others, local authorities need to be strengthened in their capacity to provide low-cost housing, and the private sector should be encouraged to play an important role considering the financial burdens faced by the governments. UNCHS

(1984) also states that a revolving fund is the only way to ensure continuity in housing programmes.

However, Varghese (1980) suggests that government subsidy provisions for slum improvement and re-housing families living in slums through slum clearance schemes were not successful in India. The lengthy and time-consuming procedures of acquisition of slum areas; the non-availability and high cost of alternative sites near places of work; and the reluctance or unwillingness of slum dwellers to move from the areas selected for clearance seems to have hampered the progress of these schemes. The research community widely criticises the resettlement of low-income households (often inner city squatters) to newly developed areas located on suburban Delhi. It is argued that reasons such as no-employment opportunities in these newly developed areas and high transport cost associated with travelling to the central city or other places of employment have encouraged a large number of resettled low-income households to move out of their subsidised suburban housing areas back to the central city or nearer to places of employment. This situation is observed in Delhi along with the allocation of cheap housing land to low income households through government cross-subsidisation and squatter resettlement schemes.

Furthermore, it is also observed in Delhi that the subsidised housing land allocations to low and middle income households under a regulated public land delivery mechanism has encouraged informal transactions and resales of subsidised land on the informal open market well above the subsidised values. The situation in Delhi indicates that the public land allocation conditions, such as, for instance, the compulsory period of about 10 years residency in Delhi; the necessity of filling in application forms; and the possession of and having to provide supporting documents, have disabled large numbers of low income households from the benefits of subsidised housing. As a result they are encouraged to move to informal land developments such as squatters and unauthorised colonies. It is also noticed that the public land and property development, and the regulated allocation and management carried out by DDA was inefficient, time consuming and it created long waiting lists of registrants.

Thus the reality of the situation of Delhi raises fundamental new questions such as:

- can a scarce resource be subsidised?
- how can any cross-subsidisation of a scarce resource be regulated to the permanent benefit of the targeted groups?
- how can the subsidised scarce resource be distributed so it can fully benefit the low income group who have tended in the past to be adversely affected by employment location, transport cost and higher household expenses than expected?
- how can any subsequent pressure from higher income groups for the resale of allocations to lower income groups be dealt with which, after all, bring a benefit to the lower income groups even if only short-term? and
- how can the dangers be avoided which any such system has of creating a black-market and an atmosphere of socially and economically divisive underhand activities?

It is noted that the distribution of cross-subsidies to low-income group housing can be done through individual allocations or through co-operative group housing. The former obviously protects the individual rights and the latter is a pulling together of many families under one group. Although housing co-operatives can be of paramount importance to the low income households, they seem to be facing several hitches in the way of house-building due to the need to raise large sums of capital and at the same time incur the liability to pay interest on borrowed capital (Varghese, 1980).

## 1.2 Delhi's theoretical conception of cross-subsidisation through large-scale public land and property development

Delhi's public land and property development with its high element of cross-subsidisation was aimed to solve problems common to poor countries around the world (Howland,

1977; Pugh, 1991; Srirangan, 1997). In practice, this policy combined together instruments such as public land acquisition and banking by expropriation, large-scale public development of residential as well as non-residential properties and leasehold public land allocation. This was believed to be the best way to supply sufficient land for all planned urban uses and provide housing to residents who were perceived to be incapable of affording shelter without these interventions. The policy thereby aimed to provide the required land for planned urban development and provide housing to low income groups (Srirangan, 1997) by:

- acquiring green field sites at 'off-market/below market' prices by advanced acquisition and expropriation;
- arresting land speculation and controlling increase in land prices through regulated priority allocations;
- capturing subsequent unearned increments from resales; and
- allocating housing land at subsidised prices for selected groups who may not be able to afford it otherwise.

The policy also aimed in theory to protect the interests of low-income groups and economically disadvantaged households by allocation of the right land to the right person at the right time and to prevent ownership of land falling into the hands of a few private individuals or companies. The policy also aimed, in practice, to check a speculative rise of land values and simultaneously to promote the ability to afford housing among economically and socially disadvantaged households through a cross-subsidised pricing system.

Delhi's land development practice followed many concepts such as public land banking, public development and ownership, cross-subsidisation and revolving fund (Chart 1). The concept of advance public land banking was conceived as possible only through public acquisition so that all land is put into right use as envisaged in the Master Plan. This concept facilitated notification and acquisition of the entire land within the urbanisable area proposed in the Master Plan.

In order to provide affordable housing land, a considerable amount of land was auctioned for commercial, industrial and high income residential uses. The profits earned from auctions facilitated the subsidised land allocation to low income groups. Under this method, land was allocated on pre-determined (reduced) rates to land owners whose land was acquired; industrialists who were being asked to remove their factories from their present locations; co-operative housing societies of low and middle income groups; and other categories as approved by the government from time to time. The revenue accruing from these auctions was used to finance city development projects and further acquisition of land for the land bank.

The first Master Plan for Delhi (approved in 1962) and the large-scale public land development policy are virtually inseparable for Delhi. The Master Plan proposed large-scale public land acquisition, development and disposal in order to control land prices and curb speculation; in turn, the large-scale public land development policy was conceived to facilitate the implementation of the Master Plan by securing a high degree of public control of land (Ribeiro, 1992; Srirangan, 1997). Therefore, the operation of this land development policy depended upon the Master Plan which: (i) identified land for current use zones; (ii) prescribed appropriate norms, standards, subdivision regulations, and development controls for different uses; and (iii) devised specific building regulations and bye-laws that could control the standards of construction activity. The Master Plan proposals were translated on the ground into Zonal Plans which act as the link between the Layout Plans and the Master Plan.

## Finance mobilisation for the operation of large-scale public land and property development and cross-subsidisation

Delhi's large-scale public land development shows that it was successfully financed through cross-subsidisation. This is ascribed to expropriation of land below market prices and its later auction to the highest bidder for higher income group residential, commercial and industrial uses. The land development and disposal operation is financed through a system of revolving and development funds raised from

- i) a central government loan of initial capital for the revolving fund,
- ii) loans from public finance institutions such as the Housing and Urban Development Corporation (HUDCO) and the Life Insurance Corporation (LIC), and
- iii) loans from Commercial Banks.
- iv) Theoretically this is justified as allowing the subsidisation of low income households and development of land for social infrastructure and recreational use, but criticised in operation for being 'nothing short of looting' (Sarin, 1983; Pugh, 1991).

DDA records show that the revolving fund was indeed used mostly for land acquisition. The Central Government provided a seed capital of Rs. 50 million, later augmented to Rs.123.1 million (Jha, 1984). The expenditure incurred by DDA on land development was met from the proceeds of the sale of industrial, commercial, and residential plots, with the surplus credited periodically to the revolving fund to acquire new lands or to meet the liabilities of old land. The revolving fund maintained a single account of land development, with sales proceeds ploughed back to the fund for financing new acquisition and development. It was stipulated that the surplus from the disposal of developed land would also be credited to the revolving fund. The fund is deposited with the Delhi Administration, the revenue and administrative body of Delhi, and DDA pays for land acquisition every year out of its revenues.

DDA annual reports state that loans for large-scale land development and disposal of developed land were also obtained from the Government of India (Rs.28 million repayable by instalments during 1961-62) over and above the seed capital provided for the revolving fund mentioned in the previous paragraph. The DDA has also obtained loans from LIC (Rs.10 millions each in 1968 and 1969) for constructing low and middle income group houses. DDA's annual reports state that fresh loans were taken from banks every financial year and sinking funds created with the Punjab National Bank and the State Bank of India, whose repayment the DDA met by floating debentures. This indicates that DDA's access to financial support from central government and public institutions has been a firm source for the capitalisation of successful land and property development and cross-subsidisation for low-income housing.

Jha (1984) defines the revolving fund as a method of revolving initial working capital in such a way that it yields a handsome return on investment, which along with the principal is ploughed back. The seed capital could be increased from land auction for high income residential, commercial and industrial use (Misra, 1986, 1990; Pugh, 1991), as well as revenues earned from higher income group self-financed housing (Maitra, 1991). In fact, any revolving fund surplus derived from sales income over purchase out goings is not profit: it is the money reserved for future land acquisitions.

Although accumulation to the revolving fund from the surpluses generated by auctions alone does not indicate the success of cross-subsidisation for low income group, DDA's claim seems to be valid that without the surplus from auctions it would have been impossible to raise funds for large scale low income housing. Therefore, the technique of the revolving fund and 'profitable' land sales indicate the potential viability for low income housing.

The applicability of a similar technique involving private developers in the core and sub-core areas seems to be a new dimension of research into financial management to achieve a social goal.

**Chart 1 Conceptual framework of regulatory mechanism of large-scale public land development and cross-subsidisation in Delhi**

<b>Concepts</b>	<b>Instruments</b>	<b>Policy objectives</b>	<b>Subsidy technique</b>
Large-scale public land acquisition	compulsory public acquisition applying development controls and expropriation	greater public control over land price rise, speculation/investment unplanned development and land acquisitions	subsidised land acquisition through advanced public land acquisition and expropriation
Large-scale public land development	land development through master plan and development plans	planned development through land use controls, appropriate & affordable standards of development, provision of essential public services, and squatter resettlement and environmental improvement	low cost and planned land developments
Public ownership and leasehold disposal	regulate ownership status through leasehold allocation and public ownership	discourage profiteering from resales, speculation and investment, and overall control of land price increase, and land use	profits from unearned increments of resells
Public revolving fund	cross-subsidisation for low and middle income housing through a revolving fund built from the profits of public land sales (i.e. HIG housing, commercial and industrial land)	public investment, financial autonomy over land acquisition, development and disposal, subsidy provisions to unaffordable groups, development of public utilities and community facilities, capture betterment and earn revenue from land transactions	cross-subsidisation from the profits of higher income and non-residential land sales (auctions)





## **2.0 Aftermath of Delhi's cross-subsidisation through large-scale public land and property development**

The Delhi Development Authority (DDA) claims that over the years it has created a long list of achievements through its public land development and cross-subsidisation programme (DDA annual report 1992-93; Srirangan, 1997). DDA annual reports state that it has generated over a million dwelling units, resettled and/or relocated more than a quarter of a million slum/squatter dwellers (the highest in the world), and developed public infrastructure in the form of inter-state bus termini, sports complexes, green areas and institutional and commercial facilities. It confirms that this kind of achievement could not have happened without the large-scale public land acquisition, development and disposal since these developments were financed mostly from the surplus revenues achieved by public land sales for which the central government provided initial the capital to set up a revolving fund for land acquisition by the Delhi Administration (within the policies set by the DDA), and further supplemented by public financiers and loans provided by commercial banks..

The success of this large-scale public land development and cross-subsidisation is observed from the rise of the revolving fund capital from Rs.123 million to over Rs. 2 billion in 1980-81 (Pugh, 1991; Misra, 1986; Srirangan, 1997) as well as supplying housing land to low and middle income households at low prices (Mitra, 1990). Maitra (1991) believes that a large number of a lower income range of households would have otherwise been driven out of urban Delhi, with no means to enter the formal housing market operated by private developers.

On the other hand, the large-scale public land development and cross-subsidisation of the DDA have been regarded as a failure since they contributed to large-scale illegal developments of unauthorised housing and squatter areas through their restrictive practices and inability to keep up with demand (Pugh, 1991; Sarin, 1983; Srirangan, 1997). Researchers observe that in the operation of public land supply, DDA was forced to make huge surpluses in the name of cross-subsidisation and abandon its public welfare objective of allocation of sufficient subsidised land for low income housing for various reasons (Buch, 1984; Mattingly, 1993; Sarin, 1983). It is believed that it did not supply adequate quantities of land for low and middle income group applicants and it did not ensure the availability of formal housing land at the right prices, when, and where needed. Therefore, it could not prevent land price inflation through illegal transfer of subsidised plots, and as a result priced out a large number of households who opted for informal land developments (Misra, 1990; Mitra and Nientied, 1989; Acharya, 1988; Howland, 1977; Srirangan, 1997).

The research community (Acharya, 1988; Misra, 1990; Pugh, 1991; Srirangan, 1997) also believes that the way the public land delivery system was operated has mostly benefited higher income businessmen, politicians and public servants, and favoured the rich at the cost of the poor. However, the contribution of this policy remains as one of the few substantial land management episodes that demonstrate a comparatively competent intervention and manipulation of urban land and property markets (Mattingly, 1993:109; Srirangan, 1997), especially in developing countries where the poor outnumber the rich, and most of the public policy operations lack dedication and determination. The overall objective of DDAs public land and property development policy was an attempt to control and keep supply ahead of demand in order to keep land prices stable, and to make housing land affordable by every party including low income households (Maitra, 1991; Sarin, 1983; Srirangan, 1997). This required the direct intervention of government and stringent controls on land transactions, development, disposal and resales in order to match the supply with demand.

In practice, the Delhi Development Authority, a single high-powered public authority, was given the entire responsibility of planning, large-scale advanced land acquisition,

development and disposal in order to keep the supply ahead of demand. It has invoked compulsory land acquisition laws, which include effective tools such as expropriation, price-freezing and advance public acquisition to assemble land at cheap prices. DDA developed most of the land on its own and restricted private development to certain activities.

DDA records indicate that it developed over 47,000 acres by the end of 1983 (i.e. the first Master Plan period 1961-81) and a total of almost 60,000 acres by the end of 1993. Its announced aim is for a planned and balanced development in totality, developing land for all uses including recreation. Its target is for 40% of space to be built-up, and the remaining 60% to be used for essential amenities and public services, such as roads, parks, playgrounds, dispensaries, educational institutions, shopping facilities, milk booths and recreational centres.

As a result of central government assigning to DDA additional functions and various national projects and programmes which were financially non-productive and were expected to be financed from the DDA own funds. Major examples of this were the construction of all facilities for the international ASIAD games in the beginning of 1980s, the special drive to resettle squatters and regularise unauthorised colonies.

DDA's commitment to land development with a potential for high returns such as for commerce, industry and higher income residential areas have resulted in shortage of housing land (Ribeiro, 1992:41 and Acharya, 1987). However, these were not as remunerative as expected because a large number of commercial units were not sold immediately. The Times of India (12.11.1994) reported that about 5630 commercial structures (over 4000 shops) developed by DDA were lying unsold. DDA then began to auction commercial plots rather than construct structures themselves in order to beat the spiralling cost of their dead investment.

DDA has developed almost all the land acquired and transferred by the Delhi Administration and the land use distribution is closer to Master Plan proposals envisaged for urban extension (Government, 1990:121). Table 1 shows that the additional land development progress was not as rapid as it might have been. Between 1983 and 1994, DDA had developed only 26% more land than developed during the first Master Plan period. This could be due to DDA's concentration on construction activity rather than land development during the second phase of development (1983-994). This supports the argument that DDA's involvement in large-scale construction of commercial, industrial and office complexes has slowed the development of land already acquired for public housing and as a result reduced the number of houses that could have been built up for low-income groups.

## 2.1 Situation of formal land and property development

DDA is certainly the prime developer of green field land Delhi. DDA has developed both residential and non-residential land. Table 1 shows that about 38177 acres of land had been developed by August 1994. This took the form of specific housing ("residential") schemes executed by DDA and housing developments executed as part of integrated development schemes ("sub-city projects" or "integrated developments"), commercial and industrial complexes/estates, and green areas. The DDA's land and property developments can be broadly categorised into two groups such as residential and non-residential. Those two types are explained below.

**Table 1. Land developed and disposed (in acres) by DDA**

Use	Land Developed Upto 1983	% To Total Land Developed	Land Developed Upto 1994	% To Total Land Developed
Residential	23422.6	50	38177.2	65
(i) Plots/flats	13298.9	(57)	26495.0	(69)
(ii) Cooperative group housing	4563.9	(19)	5806.1	(15)
(iii) Slum and squatter relocations	5559.7	(24)	5876.0	(16)
Commercial & institutions	8616.3	18	10048.7	17
Industrial	2693.3	6	2790.8	5
Horticulture & green	7230.1	15	8289.6	14
Balance/vacant	5404.0	11	217.2	0.4
Total	47366.6	-	59523.6	26*

Data in the brackets shows the percentage to total residential land developed.

\* Percentage of additional land developed since 1983.

Source: Compiled from DDA records and adopted from Srirangan (1997).

### Residential land developments

DDA developed green field land for residential use as per the Master Plan for Delhi<sup>2</sup>. It developed land for all income groups including low-income groups. In order to cater for the affordability and preference of households, DDA has followed various methods in the supply of housing land. It initially developed and allocated serviced land in the form of plots to registered individuals and government institutions requested for their staff. In 1965-1967, it changed its approach from selling serviced plots to the provision of constructed houses/flats (both cash down and hire purchase). During 1975-77, it resumed delivery of serviced plots as well in order to meet the rising demand. On the directions of government, it undertook for an increase in the housing stock the resettlement of squatter families and regularisation of unauthorised colonies.

<sup>2</sup> DDA acquired green field land and then developed it as per Master Plan guidelines and allocated to various uses through a public regulated land allotment system. DDA developed land include the ones transferred/bought from government departments who ceased land development function soon after the creation of DDA and land acquired for development through Delhi Administration. In addition to DDA's new developments land and property developments were carried out by individuals and public/private bodies on the land that was urbanised in prior to the existence of DDA. However, these developments are regulated by the Master Plan controls. But there are cases of informal land developments occurred against Master Plan regulations in many ways.

During 1980-84, DDA conceived the Rohini sub-city residential township to accommodate a large number of households who had been registered and were waiting for housing land allocation from DDA. This approach looked ideal in accommodating demand for serviced land and promoting planned development as per Master Plan. The emphasis has changed from small area development (200,000 population) to sub-city development (about one million population). Table 2 shows the total amount of housing land delivered by DDA by October 1994.

DDA has undertaken various schemes of housing land supply catering to the purchasing capacity of different strata of society. It supplied housing land through allocating built flats, and providing developed plots for construction to individuals, and to co-operative house building and group housing societies.

**Table 2 Number of dwelling units supplied by DDA up to October 1994.**

Category	Dwelling Units (Millions)
Flats/houses constructed by DDA	0.24
Dwelling units on squatter resettlements plots	0.24
Dwelling units on plots provided to co-operative societies	0.195
Dwelling units on plots provided at Rohini township area	0.085
Dwelling units on plots developed by DDA in various parts	0.25
Total	1.00

Source: Compiled from DDA office records and adapted from Srirangan (1997).

### Supply of serviced plots for individual and multi-family house construction

DDA's land development programmes, started in 1962, supplied serviced plots to individuals as housing land allotment to registered low and middle income groups and persons whose land was acquired. Allocations were also made by auction to un-registered higher income households who could afford higher prices. DDA also supplied plots to co-operative societies. In the 60s and early 70s, the option was in favour of layout development with serviced plots ranging from 25 to 500 square metres each. Realising that large plots were an unaffordable luxury due to increasing pressure on land and transportation facilities, DDA introduced group housing schemes for both co-operative societies and registered individuals.

Later, in 1970, DDA introduced the concept of co-operative group housing societies in which individuals were encouraged to form societies and build their flats in the form of multi-family group housing. DDA's main function then was to allot serviced land and recover ground rent from them. Plot owners sought mortgages from commercial banks who were reluctant to grant mortgages on the 99 year leases granted by DDA which resulted in DDA formulating a policy to guarantee mortgages for construction. These flats were then allocated among their registered members and managed by their society association with the advice of DDA. Although this method seems to be an ideal way to provide quick housing options and regulate speculation in housing land, Ribeiro (1992) suggests it as an unsuccessful way of promoting quick affordable housing stock and fulfilling residential need. He observed that in 1985, of 29,412 plots allotted to various societies, about 11,995 plots (40%) lay vacant for one reason or another.

## Supply of multi-family built flats

The DDA policy of concentrating its efforts on providing serviced plots as a means of ensuring housing to the lower income groups was being frustrated by the fact that many allotted plots were not being developed by the allottees and were lying vacant awaiting potential sale at 'scarcity value' or suffering from frustrating through lack of financial arrangements to start construction.

From DDA's point of view this had three consequences, first, funds were being expended on the infrastructure which was not being fully utilised, second, housing was not being provided to the allottees which meant that they were still occupying space elsewhere, and third, a frustrated demand was being created.

DDA shifted the emphasis of their investment policies from serviced plots to providing built-flats for multi-family occupancy to allottees in the lower income groups thus ensuring improved shelter to those most in need. In order to accelerate the pace of construction of flats/houses under this approach, an independent construction cell was created in DDA in November 1967. It was believed this change in direction would, amongst other things, relieve the pressure of demand and reduce the opportunities for speculation on the vacant plots and hopefully bring them into development by their owners.

In the end DDA had to revert to funding serviced plots since there was still felt to be a genuine demand for serviced plots for immediate development in spite of DDA's efforts in constructing multi-family built-flats.

DDA had provided about 244,036 dwelling units to registered households in the form of multifamily group housing buildings by August 1994. Of these, 32% were allotted to Economically Weaker Section households, 29% to Low Income Group households, 22% to Middle Income Group households, and about 16% to Higher Income Group households through self financing schemes. DDA records show that some of these flats were allotted on hire-purchase basis (cost repayment on instalment basis) to ease the affordability of poor. Although hire-purchase schemes required payment of house cost over period of 10-15 years and charged nominal interest rate researchers believe that they were still unaffordable to low income groups for various reasons. However, it is noted from the literature that hire-purchase schemes were found to be unsuccessful due to lack of cost recovery in spite of DDA's best administrative efforts to recover payment of cost.

## Supply of plots for squatter relocations

As early as 1950, a scheme, called Jhuggie-Jhonpri (huts, lean-tos) removal and resettlement of inhabitants, was initiated by the Central Government and entrusted to the Municipal Corporation of Delhi (MCD) for implementation. Under this scheme, 19,999 squatter families from 19 settlements were relocated by MCD up to March 1968 when DDA took over. DDA relocated a further 57,368 squatter families on to individual plots and tenements by 1975. During the political emergency period (1975-77), 16 new colonies covering an area of 987 hectares, with a total of 148,262 plots were developed by DDA. These squatter relocation schemes originally provided 67 square metre leasehold plots but after 1962 they were reduced to 21 square metre. However, this Jhuggie-Jhonpri method of residential land allocation for low income groups was regarded as unsuccessful by DDA because a large number of these plots had been resold in 'benami' (power of attorney) names and they did not reduce the number of squatters. It is believed that most of these squatters returned back to the place where they lived before or moved to another squatter area.

As the number of squatters further increased, some were resettled on the peripheries of Delhi with basic amenities to a lower standard than DDA had provided previously. In these settlements, plots were also allotted to private organisations for organising cultural and social activities and DDA supplied water through sink tube wells in the absence of municipal supply. By 1981, 44 resettlement colonies covering 8,649 acres of land with adequate care to their needs for employment, and physical and social amenities had been developed by DDA. A heavy expenditure was incurred on these resettlements and their redevelopment by DDA. Similarly, it is also noted that DDA contributed to the development of civic amenities in regularised colonies and urban villages from its land development fund.

## Housing through slum re-housing and supply of residential flats

The Slum Wing DDA has cleared certain old buildings declared dangerous under Delhi Slum Improvement and Clearance Act and resettled the inhabitants in other places. This scheme was operational until the end of the 6th five-year plan and 20,185 flats of 23 square metres each had been constructed under this scheme. Later, in 1985, the Housing Scheme for slum dwellers and others who do not own a residential unit in Delhi but live in slums, was launched. The slum and squatter families affected by the clearance of dangerous and dilapidated buildings, have been allotted 20,030 flats (DDA, 1987-88). These flats were provided by DDA on a licence fee basis and later converted into leasehold ownership. The shelter needs of the poor are also met through self-help: about 50,000 serviced plots have been provided to the urban poor for incremental housing.

The Slum Wing has also been involved in improving the environment in declared slum areas making provision for essential services in declared slum areas. It has taken up slum katra (old traditional houses) repair and a renewal programme for the maintenance of dilapidated buildings, and provided 83 multi-purpose community facility complexes for socio-cultural facilities in various congested slum areas. The Slum Wing has provided accommodation facilities to the absolutely homeless migrant population in 16 night shelters.

## Supply of residential land (plots/flats) through sub-city development projects

Since 1981, DDA has planned for and developed new residential projects as part of subcity township developments. DDA refers to these sub-city developments as comprehensive multi-purpose townships comprising homes, work centres and recreational centres conveniently located with parks, playgrounds and facilities for health, education, social and cultural activities. Such sub-cities are developments similar to new towns and are planned in Rohini to the north-west, Narela in the west and Dwaraka to the south west.

Rohini sub-city development scheme with a planned population of one million is spread over 6,170 acres in 19 sub sectors, each covering 247 acres and each providing 5700 plots. As a measure of equity and social justice, at Rohini, 97% of these plots were provided to Economically Weaker Section, low and middle income groups. In this scheme, land was also developed for 148 co-operative group housing societies providing flats for about 23,000 families. Land was developed for a large number of low-income group households and heavily subsidised to enable them to own a house of their own.

#### Non-residential land developments

In addition to residential land development, DDA has also been directly involved in serviced land development for non-residential uses such as commercial, industrial, institutional and recreational activities. In fact, DDA's most renowned function seems to be the commercial and industrial developments that fetched surpluses from auction sales and the fact that these were used for cross-subsidisation to housing and infrastructure development. DDA developed all land for these uses and undertook most of the construction works but in some cases it sold land for private development/construction. DDA's non-residential developments can be categorised into four groups: commercial, industrial, institutional and recreational. The nature of these developments and their details are explained below.

#### Commercial land development

As part of its planned development and auction policy, DDA has developed land for commercial use in the form of plots and estates/complexes. DDA has dispensed commercial activities all over Delhi and these developments are defined as:

1. convenient shopping;
2. local shopping;
3. community centres; and
4. district centres.

The convenient shopping adjoins residential developments, while local shopping complexes serve neighbourhood areas. Community centres cater for much larger sections. District centres cover commercial and institutional facilities (DDA, undated). DDA developed about 405 convenient shopping complexes, 93 local shopping complexes, 25 community centres and 5 district centres by 1993. The plots/shops developed in these centres were auctioned except for some allotments on pre-determined subsidised rates for special categories. DDA has also demonstrated its ability in developing and disposing of commercial plots for hotel sites and other commercial uses. DDA's annual reports state that since 1987-88, the Slum Wing of DDA has also started auctioning its built up commercial units in the same way as DDA in order to augment its financial resources.

#### Industrial land development

By the end of 1992, DDA had developed 22 industrial areas/estates comprising 11,881 plots (of which 5 have been allotted to co-operative industrial estates and rest are maintained by DDA). About 7740 plots were proposed for allotment on predetermined rates to industries shifting from non-conforming areas, industrial societies, and unemployed engineers and military officers. A limited number of plots (3876) are disposed through auction and the rest are allocated at subsidised prices.

## Institutional land development

Plots have been provided to departments of states/central governments, registered societies, and social, cultural, educational and religious institutions. Plots are also allotted for colleges, schools, hospitals, court buildings, milk booths, various infrastructural facilities, and residences of government employees. DDA had allotted about 1800 plots (3554 acres) of varying sizes to these institutions by the end of 1992.

## Recreational and open space development

As part of planned development and land management, DDA develops and maintains green areas in Delhi. In 1991 it had developed a total green area of about 18,184 acres (DDA Vikas Varta, 1991). Of these about 8289 acres of land from newly acquired and developed green belts was developed into different kinds of greens, parks and gardens by August 1994. They were developed in the form of green buffers (16), playing fields (10), district parks (850), city forests/woodlands (56), sports complexes (8), lakes (16) and picnic spots (8). DDA has planned and developed sports complexes to provide sports facilities to people who cannot join prestigious social clubs in the city. It also fosters and encourages young talent for participation in national and international sports activities (DDA, undated). DDA has developed seven sports complexes with various indoor and outdoor games, and developed children's parks and fitness trails with required equipment and track. In 1990, it had developed two divisional level sports centres, six district level centres and many small play centres.

## Summary

The previous sections have generally supported the efforts of DDA in promoting planned development and providing cross-subsidies to low-income housing through non-residential property developments. However much literature states that the DDA policies were not successful in achieving their objectives. In regard to formal low-income housing in Delhi, it has been observed that most of the land allocated to low-income groups' relocation colonies were away from employment sources as they were all located in peripheral areas of Delhi (Baken and Linden, 1992:63; McAuslan, 1985:88; Mitra, 1990:216; Acharya, 1988:1428). Their isolation from central city areas where employment opportunities for low income groups are ample seems contrary to Master Plan recommendations to provide low-income housing close to or around the places of employment.

Thus, researchers believe that the over-riding advantage for them to live near employment encourages low-income groups to revert to their most suitable options, which are informal or squatter settlements rather than plots on formal developments on the periphery however well subsidised (Sarin, 1983:242; Acharya, 1988:1428). Furthermore, it is believed that DDA's insistence on high development standards and their locational disadvantages have, paradoxically, served to encourage illegal transfers of designated low income plots/houses to higher income groups, lowering even further the 'de facto' supply to low-income households (Baken and Linden, 1992:64; Mitra, 1990:216).



## 2.2 Situation of informal land and property development

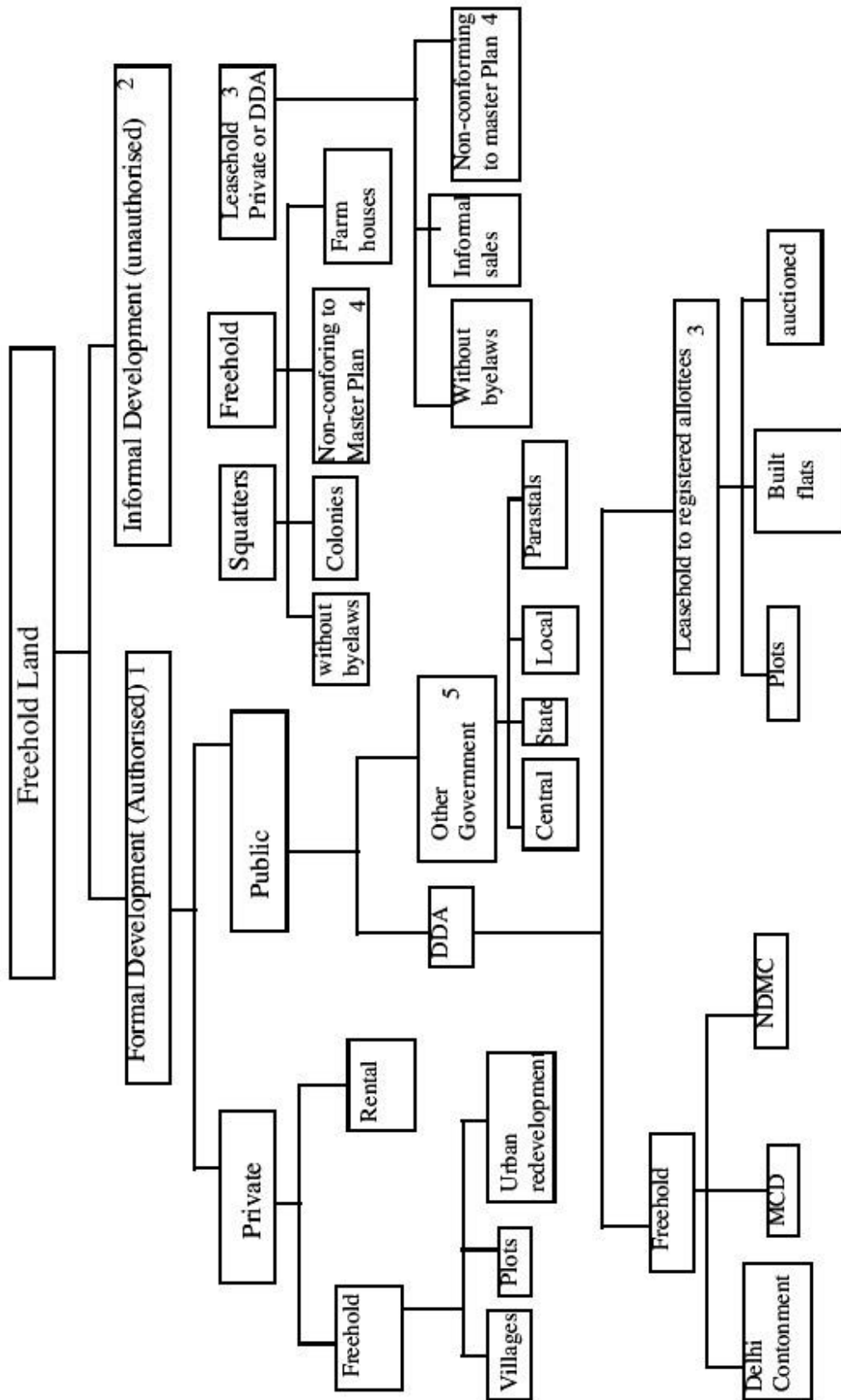
Although, DDA records show that DDA has provided a considerable amount of housing to low income groups through its cross-subsidisation policy, it is observed that the DDA's direct intervention has created many other segments of housing land markets in Delhi (Chart 2). These can be broadly categorised into two: formal and informal. These market segments can be further subcategorised depending upon their legal status, plot standards, house structures and land prices prevailing in them. The peculiarity of Delhi's land and property market is that many forms of illegal transactions have grown up around the various official land development policies. Literature shows that the large-scale public land development and allocation has not only created formal and informal segments but also encouraged illegal resales of formal land sales/allocations, and resulted in a variety of illegal categories such as squatters on public land, benami sales/transfers of unauthorised lands, and transactions of unauthorised housing lands.

### **Informal land and property developments in Delhi**

Informal land and property developments are defined as land that has been developed, sold, resold, obtained, and/or encroached upon without the authorised permission of the owner and/or the concerned city development authority and/or municipal corporations functioning under statutory parliamentary acts. The term informal is context specific and includes unauthorised, illegal and squatter settlements.

These encroachments and subdivisions are not legally accepted because the large-scale public land policy of Delhi regulates land planning through public land supply, land use planning and zoning and building by-laws. Only the operators (i.e. Delhi Development Authority, Municipal Corporation of Delhi, New Delhi Municipal Committee, and Delhi Cantonment Board) of large-scale land policies are allowed to subdivide, develop and allocate land for any purpose in Delhi. Every development is supposed to be undertaken only with the permission.

Chart 2 Land Tenure, Development Status and Agencies in Delhi National Capital Territory



**Note:**

1. Formal development has received authorisation from appropriate authority
2. Informal development has not received authorisation from appropriate authority
3. Illegal sale of leases resulting in informal development
4. Land uses other than housing
5. Leases from these authorities can also be sold illegally resulting in informal development

The informal settlements of Delhi are developed in many ways such as:

- encroachment on to government and private land;
- subdivision of fresh farm land (acquired, notified for purchase or likely to be notified) in and around the city limits; and
- unauthorised constructions against building bye-laws applicable at the time of construction.

### Types of informal land developments in Delhi

There are two major informal settlement types in Delhi:

- A. squatter settlements (Juggi Jhonpris' clusters); and
- B. unauthorised colonies (unauthorised land subdivisions/developments and housing).

#### A. Squatter Settlements

These squatters can occupy/encroach on any land regardless of ownership that is normally considered unsuitable for development - flood land, steep slopes, areas of erosion, polluted land and any other vacant developable land in private or government or disputed ownership that for one reason or another is lying vacant.

Major characteristics of squatters include:

1. a squatter occupies a piece of land not in his formal ownership;
2. constructs a shelter out of materials in his possession;
3. uses that shelter for his own/family use/occupancy; and
4. can rent out part or all of that shelter to others.

Squatters are viewed as families unable to afford housing through rent or ownership in the private formal housing market or through the housing development agencies as per their preferred location (Sundaram and Gambhir, 1991), and they seem to be individuals or families who can usually only afford to own/rent rooms and shacks that are very cheap (Angel et al., 1983).

The total estimated population of these squatters in Delhi was 566,930 persons in 1983. By 1991 about 1.3 million persons were living in 929 Jhuggie clusters (DDA, 1983; SPA, 1994). Table 1 shows the number of clusters, *Jhuggies* (squatter units), number of clusters and their population by zone. These squatter clusters have grown from 928 clusters in 1991 to 1276 clusters in 1994. Given that an average squatter settlement size was 1400 persons in 1991 (ibid), then there is likely to have been a squatter population in 1994 of 1.8 million persons or more.

**Table 1 Spatial distribution of squatter settlements (Jhuggie clusters) in Delhi**

<b>Zone</b>	<b>Number of clusters in 1990-1991</b>	<b>Number of Jhuggies in 1990-91</b>	<b>Squatter Population in 1990-91</b>	<b>Number of clusters in 1994</b>
<b>East Zone</b>	123	41958	209790	190
<b>Central Zone</b>	92	21877	109385	127
<b>North Zone</b>	227	65901	329505	300
<b>West Zone</b>	204	42573	212865	270
<b>South Zone</b>	282	87035	435175	389
<b>Total</b>	928	259344	1296720	1276

Source: Adapted from Srirangan (1997).

### Location and typology of squatter settlements

Unlike the usual location of squatter settlements (such as hillsides around Rio de Janeiro and Lima; marshy and malarial valleys around Bahia; and canals, lagoons and rivers in Saigon, Hong Kong, the Philippines, Bangkok), most squatter clusters in Delhi are observed to be located on plain areas owned by the government, and vacant private lands (Basu, 1988; Srirangan, 1997). They are *“spread over the length and breadth of the city staring the conscientious urban planners in the face”* (Ali, 1990:15). Large concentrations of squatters are seen in Trans Yamuna/East Delhi and South Delhi.

In Delhi, squatters' areas are usually found located on:

- public lands (Sundaram and Gambhir, 1991; Benjamin, 1991:3);
- gardens, open spaces near railway tracks, beneath bridges and planned public housing sites (Benjamin, 1991:3);
- amidst surrounding residential areas (Misra and Gupta, 1981);
- near old and new industrial and commercial complexes, fruit and vegetable markets, within unauthorised colonies, and resettlement colonies (DDA, 1983); and
- open spaces left out in resettlement colonies where previous squatter households had been rehabilitated and who even complain that the basic services made available to them are inadequate (Ali, 1990).

These squatter settlements are mostly made of huts constructed out of mud, brick, straw, bamboo, wood and such other sundry materials (Misra and Gupta, 1981). However, some well-established squatter units are made out of improvised materials without any infrastructure provisions (Sundaram and Gambhir, 1991). About 80% of them are of 10-15 square metre area, and 88% seem to be single room units (Basu, 1988:138).

Squatters are mostly engaged in manual labour in the industrial areas, in domestic work and in construction, and factors such as distance of workplace and transportation costs encourage them to stay in these settlements which are centrally located (Srirangan, 1997). It is believed that some of them are doing petty trading and also engaged in self-

employed home hawker trades. Researchers observed that most squatters are rural migrants of utterly poor and poverty-stricken labour class households who move to the city in search of better wages (DDA, 1983; Basu, 1988:138; Srirangan, 1997). Their household income seems to be very low and it is observed that they do not manage to save anything from their daily wages (SPA, 1994).

### Reasons for squatter settlements

Many reasons have been suggested as having encouraged squatter settlements in spite of the operation of large-scale public land allocation and housing in Delhi to provide cross-subsidised low income housing opportunities (Basu, 1988; Sundaram and Gambhir, 1991; Parashar, 1994; Payne, 1977; DDA, 1983; Ali, 1990; SPA, 1994; Srirangan, 1997):

- (1) un-affordable standards of government-built legal housing ;
- (2) acute housing shortage for low and lowest income groups who are mostly in-migrants who are not eligible for public land allocation (10 year residency requirements) and/or find it difficult to afford the costs of public housing;
- (3) inability of government to allocate adequate land and housing for poor and to check the resale of resettlement plots that have encouraged re-squatting;
- (4) resettlement of squatter families on legal plots located on peripheral locations seems to driven them to illegally sell their land and move nearer to their places of employment ;
- (5) lack of opportunities to build a home progressively according to their own values of space and amenity, and thus regulate housing/shelter expenditure within their limit ; and
- (6) political patronage that considered to be motivating a large number of squatting.

### B. Unauthorised colonies (unauthorised land subdivisions/developments and housing)

Researchers suggest that unauthorised land developments and housing have been growing steadily in Delhi (Mitra, 1987; Basu, 1988; Payne, 1988; Hardoy and Satterthwaite, 1989; Ali, 1990, 1995; Srirangan, 1997). These colonies grew from 110 in 1961 (before the enforcement of large-scale public land development and allocation) to 471 in 1975, to 750 in 1983 and about 900 in 1994. Table 2 shows the spatial and time series growth of unauthorised colonies in Delhi since 1961. It is noted from the literature that unauthorised colonies were present in East Delhi (Shahadra), West Delhi and North Delhi before the enforcement of large-scale public land development and allocation. It is recently observed that they have mushroomed all around peripheries of Delhi Capital Territory after the commencement of public land development.

Interestingly, Srirangan (1997) observed from a systematic field study that the majority of households (more than 55%) living in unauthorised colonies belong to low-income groups. This indicates that in spite of large-scale public land development and cross-subsidisation for low-income groups still a large number still find shelter in unauthorised land developments and housing areas. This situation is against the conception of the large-scale public land development proposed by the Master Plan for Delhi 1962. Sweden, the Netherlands and other countries that have operated similar land development and allocation policies have not experienced this situation (ibid).

**Table 2 Growth of unauthorised colonies in Delhi**

Year/ period	Number Colonies	Number Units	Families (Million)	Population (Million)	Prime Locations	Area (acres)
1961(Prior to large-scale public land development) policy)	110	-	-	0.2	Shahadra, West Delhi, North Delhi	
1974-75 (after large-scale, public land development)	471	142,000	0.15	0.8	Shahadra, West Delhi	7,413
1978	-	-	-	0.6	-	7,500
1983	750	-	-	1.2	-	11,120
1994	847	-	-	1.4	-	-

Source: Adapted from Srirangan (1997)

Blank cells indicate the non-availability of reliable data

### **3.0 Major effects of Delhi's cross-subsidisation on large scale low-income housing (assessment of its success and failure in the provision of appropriate housing)**

DDA claims to have supplied a large amount of land for residential use through its regulated land delivery: over a million dwelling units were made available by the end of 1994, and a large number were provided to low income groups at subsidised prices.

Yet the DDA has been faulted: its selection criteria, compulsory residency requirement and other regulatory allocation controls seem to have blocked the access of households who could not afford to register with DDA and left them unfortunates in some way. Furthermore, DDA's promotion of flats for higher income households under the Self Financing Scheme in order to prevent "downward filtration" benefited upper income groups and provided to those lucky to be selected better accommodation than is available in the private sector (Maitra, 1991; Srirangan, 1997).

DDA's regulatory allocation policies are also said to have failed to provide LIG housing as per Master Plan targets (Payne, 1988:43; Jerry, 1991). Daily newspapers note that besides individual registrants, there are numerous co-operative group housing societies (912 societies with around 0.11 million members) registered with the registrar of co-operative societies that have waited for housing land since 1983. These figures were never lower because Howland (1977:73) estimated in 1970s that this public land development and allocation has accomplished only a little more than a free market might have done in Delhi.

It is also argued that the supply shortages, high standards and subsidies promoted by large-scale public land development and allocation policy have encouraged the commercialised recycling of the state-run formal housing system and encouraged a proliferation of illegal property dealers in all DDA built areas (Payne, 1988; Srirangan,

1997). This encouraged a large number of re-sales of DDA plot/flats in the form of a “downward raiding” a process, in which upper income group households have a tendency to buy out the land supplied to low income groups (Thirkell, 1995; Srirangan, 1997). This commercialisation of DDA subsidised flats/plots, unauthorised constructions and encroachments of open spaces has been seen in large number in the DDA developed formal colonies such as the sub-city of Rohini (Indian Express, 92; Srirangan, 1997).

It is also noted that some of the public land allocation lease conditions have attracted illegal sales of DDA subsidised land and in turn attracted the selling households to move to unauthorised colonies or obtain illegal land (Srirangan, 1997). This supports a suggestion that the very high cost of legal development effectively excludes many private sector developers who turn to unauthorised development outside the urban regulations with the most minimal services and environmental protection.

Srirangan (1997) noted that despite the existence of legal provisions against misuse and unauthorised construction, there is general misuse of residential space for non-residential use, and a large number of residential buildings are partly or fully converted into commercial shops. The reasons could be what Jerry (1991) noted as ineffective land allocation and management, and ample corruption in the civic administration and enforcement of land use laws.

Srirangan (1997) found from an empirical face to face survey conducted with residents, that in the Rohini plotted sub-city scheme, most of the formally allocated plots were resold to middle and higher income households. Of 366 households contacted, only 24% admitted being the original allottees. Interviewees also reported that a large number of plots were resold repeatedly, as many as 83% of resale purchasers had procured their plots through property dealers. It was also noticed that DDA’s decision to withdraw the 10-year restriction on flat resales has increased the number of sales. This seems to have gradually intensified the active role played by property dealers in transacting subsidised plots allocated for LIG and EWS households. One may also argue that the resale of subsidised allocations can only affect LIG and EWS households by definition. However, it may be to their advantage since they are gaining the asset sold at minimum financial cost unless they are being exploited by middlemen property dealers.

Rohini data also reveals that the present occupiers of DDA resold plots are generally upper income groups (Srirangan, 1997). Most EWS plots are occupied by MIG households, and most LIG and MIG plots bought by HIG households. Thus public land development and subsidised allocations have contributed to the creation of “downward raiding/upward selling” affecting mostly low-income groups. Furthermore, it is noted that the lease condition of allocation of only one plot per household regardless to their family size and income earning capacity, and restricted authorised private developments leave no doubt that these households will be encouraged to move to cheaper semi-formal (regularised unauthorised plots) and/or informal land developments which in turn affect the operation of cross-subsidisation for housing.

Moreover, as part of public development and cross-subsidisation, the DDA’s practice of building self-financed flats for higher income group (in order to discourage buying land allocated to low income groups) has not reduced the practice of ‘downward filtration’. The income criteria that determined the subsidised allotments were not successful in finding the right income group of beneficiaries using the existing evidences of documents, income certificates and affidavits and that observed to be resulted in provision land to wrong persons tempted them to resell when prices boomed.



Nevertheless, it is observed from the statements of sellers of DDA allotted plots at Rohini subcity that the prime reason for resale of their subsidised plots is the higher appreciation of market terms (from Rs.100-200 per square metre allocated price in 1982 to Rs.1538-14,844 per square metre resale market price in 1992). Other major reasons for resale were: acquiring another plot through formal or other sources, closeness of work place to residence and small size of the plot provided by the DDA (Srirangan, 1997).

It is therefore concluded that Delhi's public land development and cross-subsidisation for housing and the strategy of regulated priority allocations of formal land has not made available adequate residential land for low-income groups. Either they were unable to obtain their share or they are exploited by upper-income groups due to their socio-economic disadvantage. This situation resulted in large-scale re-sales of formal plots and downward riding of upper income groups. This situation is noticed in spite of DDA's successes because DDA has been overtaken by events and the speed of population increase and real demand through economic growth which indicates the necessity of involving private developers and encouraging more choices/options in cross-subsidisation for low-income housing.

#### 4.0 Summary and conclusion

The aim of this paper has been to examine the effectiveness of the various planning approaches and administrative and financial techniques that have been taken in Delhi to resolve the rapid urbanisation of the past forty years. The relevance of this experience to the current UK Department for International Development (DFID) funded research project into Core Area Development with Delhi as a case and field study has been assessed. A review of the literature and the official plans and reports of the Delhi Development Authority (DDA) have been the basis for the critical analysis of this short paper. Local knowledge of the city and the DDA have added a personal dimension.

##### Summary

The Delhi Development Authority (DDA) has developed a large amount of land and provided low income housing using public land development and cross-subsidisation as financing tool. It has been an unusually successful government intervention in the socio-economic and political context of developing countries. Researchers appreciate DDA's contribution as a bold intervention and a model of innovative approaches in less developed countries to provide shelter to low income groups.

However, in spite of about thirty-five years of hard efforts by DDA, a large number of low-income households are still insecurely and inadequately housed. A majority of the poorest of the poor are living in temporary shelter on squatter settlements. Large numbers also live in unauthorised housing areas that are designated illegal for various reasons. DDA's land and housing development policy is facing increasingly critical evidence that it is not continuing to achieve its aims and objectives.

It is a truism to say the very poor cannot afford to invest in formal land and standard housing units due to their lack of earning capacity and savings. Nevertheless, they are present in the Delhi urban area in ever increasing numbers. They are the most vulnerable to the conflict between the location of employment opportunities, rising transport costs, opportunities to get on to the official housing allotment registers and lack of qualifying identity. They are forced into making illegal decisions to survive. They have every reason to encroach on what they see as unused land around the centre of the city or any other locations that are convenient to them for building a scrap shelter.



The number of these squatters is increasing in spite of the formal relocation of a large number of them by the local governments and the efforts taken by the Slum Clearance Wing of the DDA to include this group in the formal land allocation schemes. The constant and overwhelming growth of the economically weaker sections (EWS) and low income households (LIG) is caused principally by in-migration of the rural mass from mostly neighbouring states although natural growth plays its part. The majority of migration is motivated by the prospect of employment opportunities which are seen and believed to be better than the nothing where they come from.

The city centre where they can find daily paid jobs and self-employment in informal petty business is their natural first choice for living. Here there are no transport costs, which is a major consideration on first arrival and even later if earnings are meagre. This is in direct contravention of DDA's current policies that large scale public land development and subsidised low-income housing cannot be afforded near core areas because of both financial constraints and the necessity of allocating this central high value land for remunerative uses such as commercial, retail and high-income housing, which is an integral part of its cross-subsidisation policy. Its rigid implementation of the Master Plan provisions of one site one use classification also plays its part.

DDA's experience also indicates that the large-scale public land acquisition, development and universal allocation policy has not eliminated the growth of unauthorised housing colonies that have mushroomed along the city boundaries. This is another important zone where large numbers of low-income groups find their shelter. Interestingly, an earlier research observed that many of the residents of these colonies are low income groups who could not access or could not afford formal land and housing allocated by Delhi Development Authority for various reasons (Srirangan, 1997). The research also observed that the quantities of formal affordable housing supplied by the Delhi development Authority were insufficient compared to the demand and has encouraged the housing aspirants to opt for available options that are unauthorised and/or illegally transferred subsidised land.

Furthermore, the experience of Delhi's large scale public land acquisition, development and allocation policies indicate that DDA is confronted with stiff resistance from land owning farmers during advance land acquisition and expropriation. Their resistance not only affected the acquisition and assembly of adequate land for public development but also constrained the operation of effective public allocation and development of new green field areas. As a result, there was a growing accumulation of unsatisfied registered, as well as unregistered, demand from housing aspirants. This unsatisfied demand was later exploited by the active role played by informal developers promoting the un-serviced illegal subdivisions quickly with varying standards and flexible norms, conditions and payments (Srirangan, 1997). It ultimately affected the capacity of DDA to allocate adequate land for low-income groups through its cross-subsidisation policy.

Nevertheless, the unique situation that is peculiar to Delhi is the operation of the large-scale public land acquisition, development and allocation that gave the DDA a monopoly hold on the formal land supply and discouraged private developers. It is accepted that the three factors of first, land laws concerning public land development, second, the lack of adequate institutional capacity and, third, the constant migration adding large numbers to household demand have contributed most to the inefficiency of DDA in meeting land development and allocation. However, it is an undeniable fact that DDA policy had potential for success and it could have achieved more than what is now if it had involved private developers at an earlier stage.

The private sector can play an important role in filling the gap that, for instance, DDA on its own finds it difficult to achieve and moreover it can mobilise funds in developing countries where local municipal authorities often fail to generate their own resources for financing infrastructure and social services. It is a recent belief that private sectors are increasingly achieving a higher rate of efficiency and productivity.

## Conclusion

The implications for DDA policies need thorough examination with reference to the involvement of the private sector in low income housing through cross-subsidisation from commercial developments in core areas. It is expected that private sector involvement would be able to increase the productivity and efficiency that could not be achieved by public development alone. The involvement of the private sector will prove successful because it can:

- decentralise the mechanism for development that under DDA alone has over-grown to a huge size at the expense of efficiency;
- raise additional capital that is not accessible to the public sector and local governments;
- substitute financial options that are unavailable to the public sector and local governments;
- increase the efficiency and productivity of delivery by means of the controllable size and institutional management in the private sector; and
- provide additional options that are not provided by public development.

The role of the private sector with local government laying down conditions attached to development permissions and mixed use on one site or within one building would not only increase the supply of formal housing but also eliminate illegal channels of developments. Developments with office/workshop/retail/commercial/residential in a single commercial complex provided by private developers would be able to encourage employment and residential opportunities for low-income groups. The Brunswick Square/Centre in central London is a good example of such a mixed-use development.

It is presumed in the DFID research that private participation in land development and subsidised housing in the core areas can:

- provide employment opportunities for low income households around the place of their residence through mixed development;
- increase the supply of formal housing in core areas that usually fell short due to financial constraints, and inefficient public land development and cross-subsidisation;
- re-accommodate those that would otherwise be displaced by redevelopment; and
- reduce the number of squatters and informal land developments.

**These assumptions will need to be carefully examined by DDA in its current and changing role as primary developer in Delhi.**

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