Private Provision of Public Services in Unauthorised Colonies

A Case Study of Sangam Vihar

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The provision of public services such as electricity, water, health, sanitation and schooling has traditionally been the domain of government and administrative bodies. The Delhi Vidyut Board (DVB), Municipal Corporation of Delhi (MCD), New Delhi Municipal Council (NDMC), Delhi Development Authority (DDA) and Delhi Jal Board (DJB) are just some examples of bodies engaged in making these services available to the residents of the National Capital Territory of Delhi (NCT). However, the ground reality is that there exist a number of low-income colonies and slums across the NCT wherein; private players provide for the basic public services. Many of these colonies are classified as 'unauthorized' and are therefore denied the above-mentioned services by the bodies that administer their provision in other parts of the city. These bodies are in no way obligated to cater to the residents and they in turn pay none of the taxes or levy that residents in other colonies are required to.

This paper is an investigation into the provision of public services by private entrepreneurs and through community management. Our study, which concentrates wholly on Sangam Vihar, a low-income unauthorized colony situated in South Delhi, seeks to identify the mechanisms that are in place for the provision of basic public services. Hence, our aim is to investigate the state of governance in Sangam Vihar. For the purpose of our study, we have limited ourselves to water and electricity, two potential indicators of governance.

Markets are considered incapable of providing civic amenities due to market failures and restrictive trade policies (monopolies). We wish to examine if the existing system is in fact efficient and viable.
We hope to find the answers to the following questions

- Has the failure of the administrative set-up and subsequent entry of private players improved the state of governance or has it in fact, led to its decline?

The answer to the above question can then help us take our research to the next level and help evaluate the following question,

- Could the market mechanism represent an efficient replacement to public provision or is government intervention, but inevitable?

The structure of the paper is as follows: section 1 outlines the methodology adopted by us for the purpose of our research and challenges we faced. Next we have attempted to give a brief outline of the community and history of Sangam Vihar in sections 2 and 3 respectively. Section 4 goes on to explain the scenario of electricity provision in the colony and section 5, that of water. Section 6 aims to highlight the implications of ground water abstraction. It is our opinion that the provision of water is an activity that the community should jointly participate and our recommendations toward doing the same are listed in section 7.

1. Methodology

The first step towards our goal of arriving at a meaningful result to the questions posed above was to identify the relevant players. These include residents of the 'unauthorized' colony. In the course of our fieldwork we have endeavoured to interact with a broad spectrum of people including residents whose stay in the colony has been of a considerable duration and others who have just recently made it their home, both old and young. The purpose of these interactions was to find out what their water and power requirements are and how they meet these requirements especially, during the summer months.

Next are the private players providing the public services (water and electricity). Again we have attempted to: speak with, as many different kinds of players as possible, be they individual large and small players or groups of individuals who have collectively pooled in resources and identify their motives for providing these services and challenges faced by them. Do they have to deal with interference of government and other law enforcing bodies? This section of our research proved to be the most challenging as many entrepreneurs are engaged in activities deemed illegal. We have endeavoured to circumvent their understandable reticence and arrive at an accurate assessment of their modes of functioning, motives and profits. Our research would have been incomplete without incorporating the views of government, administrative and civic bodies. To this effect we have tried to ascertain the views of officials belonging to the MCD, DJB, DDA and even the BSES. Sangam Vihar has also been identified by various NGOs and civil society organizations as a sensitive area and many are making contributions in the field of health, education and providing livelihood options. CASP-Plan and Vidhya are two such organizations that provided us with information and guidance. In order to examine the broader theoretical perspective we have tried to study literature on urban poverty, slums and community management. One disadvantage we faced was the absence of any micro-level data concerning Sangam Vihar. Thus most of the information gathered by us was bu means of field research.

2. How Sangam Vihar Came into Existence

Before we delve into the observations and analyse the prevailing situation, it is necessary to provide a brief historical account of the colony itself and a profile of the colony as it is today. Sangam Vihar forms the periphery or the boundary between Delhi and Haryana. It lies in the foothills of the Aravalli belt. The ownership of land in Sangam Vihar still remains ambiguous. As per the Delhi Master plan for the year 2001, the area falls under the 'green belt' which comprises agricultural and forest land. Interviews with the old residents, party-workers of the area MLA revealed that the land in and around Sangam Vihar was initially agricultural land, which was later sold by the landowners. The land is said to have been originally owned by a community called the '*Gujjars'*. The State Government in return for a monetary compensation took up land from them. Having received this compensation the *gujjars* illegally sold off their land to people migrating from nearby villages and urban areas cutting out plots in their land haphazardly[1]. Most of these plots were transferred by means of a 'power of attorney'.

Preliminary field studies and interviews with people residing in Sangam Vihar and Community Aid and Sponsorship Program - Plan (a Delhi based NGO operating in the area) revealed that the Sangam Vihar settlement dates back to 1979. It started with migration of people traveling from nearby states and villages in search for better employment and livelihood options in Delhi. With the advent of the Asian Games in Delhi in 1982, a lot of labour from Uttar Pradesh, Haryana, Bihar and Madhya Pradesh migrated to Delhi with the construction boom and mainly worked as construction workers in South Delhi and set up temporary shelters at Sangam Vihar.[2] These temporary shelters over time became permanent houses made of brick and mortar, and the first roots of the Sangam Vihar colony were planted. This information largely concurs with the findings of Trond Vedeld and Abhay Siddham. [3] They have identified the following historical events as instrumental in the creation of Sangam Vihar. As a consequence of the Partition in 1947, many well-off Muslim families residing in the area fled to Pakistan leaving behind vast

[1] Residents of G block. 2005. Interview by authors. Verbal Interview. Residence of interviewee Sangam Vihar, 10 June.

[2] Tiwari, Alok. 2005. Interview by authors. Verbal interview. CASP-Plan office Tughlakabad institutional area, 25 May. Mr Alok Tiwari is the Program Co-ordinator, CASP-Plan Delhi

[3] Vedeld, Trond, and Abhay Siddham. 2002. *Livelihoods and collective action among city dwellers in a mega-city (New Delhi).*

tracts of vacant land. Subsequently people displaced by the Partition came to occupy this land, laying the foundations of the largest unauthorized colony in Delhi. Developments such as the Asian Games in 1982 and the establishment of new industrial zones such as the Okhla Industrial Area during the 1980s and 1990s created a demand for new housing, sports complexes and infrastructure to facilitate transport and communication and hence created a market for unskilled labourers.

The last survey conducted by CASP-Plan revealed that by the year 2000, there were more than 2 lakh people residing within Sangam Vihar over a spread of 150 acres of encroached land[4]. One study (Vedeld and Siddham 2002) describes Sangam Vihar as an "unauthorized settlement with about 400000 people located close to the ruins of the old city of Tughlaqabad".[5] The actual figure may be hard to obtain as people are constantly migrating in and out of the colony. We can obtain some idea of the scale by examining block D, just one of the 30 or so blocks of Sangam Vihar. Block D has 9 polling stations and each polling station corresponds to 1000 registered voters. This means that block D has 9000 registered voters alone.[6]

While studying Sangam Vihar, one should keep in mind, the distinction between a slum and JJ colony on one hand and an unauthorized colony on the other. A slum may be defined as dwelling structures that occupy public land. Unauthorized colonies are established when there is an illegal transfer of land from one party to the other[7]. It is interesting to note that Sangam Vihar, when it came into being was a small settlement of *kuccha* houses but, that have over time evolved into permanent structures and does not conform to the definitions of a slum. Hence, it is important to carry out the research keeping in mind the true identity of the colony. There are a large variety of dwelling structures in the area. While some residents live in temporary accommodation characterized by use of wood and plastic sheets for protection, the well of live in palatial houses comparable to any recognized colony. The majority live in brick houses with an average size of 50 square feet. Sangam Vihar does have some *jhuggi* clusters but these are limited to small tracts of land.

The Department of Urban Development, Delhi, has in its charter identified 1071 such unauthorized colonies[8]. For the purpose of initiating the process of regularization of these colonies, the department asks for applications from the 'Resident Welfare Associations' (RWAs) of such colonies with regards to area, population density etc. and then, on the basis of such information and predetermined criterion, the department appeals for the regularization of such colonies. The Delhi Development Authority in an effort towards regularization, invited applications from unauthorized colonies, in existence as on 31st march 2002[9]. In case of Sangam Vihar too, RWAs of various blocks in the area, applied for regularization of their blocks. On the basis of applications sent in by 46 associations the population of Sangam Vihar has been estimated at 6.3 lakhs[10]. Sangam Vihar, a colony spanning over 600 hectares, is divided into two parts; one half comes under Saket Vidhan Sabha and is a part of Devli village. The other half comes under Tughlakabad constituency (MLA Sajjan Kumar). There is a settlement of Rajasthani migrants referred to as the 'Rajasthani Camp'. This is a JJ colony of roughly 1000 people located in nearby Tigri Village. Sangam Vihar is divided into a number of blocks. This is

[4] AFORD.2004. *Final Report:CPME Baseline-II to CASP-Plan*. Delhi.
[5] -do-
[6] Mahesh. 2005. Interview by author. Verbal interview. MLA office, Block D Sangam Vihar, 28 May. Mahesh is a party worker for te area MLA, Ramesh Bhiduri.
[7] Kundu, Amitabh. 2005. Interview by authors. Verbal Interview. Jawaharlal Nehru University, 11 May. Dr. Kundu is a proffesor at the Centre for Regional Development Studies, JNU
[8] Department of Urban Development, New Delhi.1999.Citizens Charter, Delhi.
[9] Delhi Development Authority. 2004. *Revised guidelines for regularisation of unauthorised colonies in Delhi.* Delhi
[10] Raj, Kuldeep. 2005. Interview by author. Verbal interview. DDA building, 29 June.

largely an informal division into blocks by the service providers '*Thekedars*' (contractors). The blocks include A, B, C, D, E, F1, F2, G, H, K1, K2, I1, I2, J1, J2, J3, L, L1, L2, M1, M2, Devli Pahari, Bir bazaar, Shani Bazaar, Gupta Colony etc.

A reconnaissance visit to the area proved to be an eye opener and the problems plaguing Sangam Vihar became apparent at first glance. One of the most glaring problems identified. by us was the absence of a *pukka* road. The road leading inside Sangam Vihar (*Ratiya Marg*) is dotted with potholes making the roads uneven and extremely hazardous especially in the monsoon months. Even the narrow by lanes leading out from the main road are very difficult to navigate. Garbage and sewage is strewn all across the road making it filthy and hazardous for pedestrians and any kind of traffic. Unfortunately, NGOs have not been able to come up with any solution to this problem, as it requires huge expenditures especially for laying a road. Thus, government and local body (MCD) intervention in this area become imperative.

The second problem that immediately came into view was the lack of sanitation facilities and any form of proper waste disposal systems. The abysmal condition of the roads and the by-lanes, is further worsened by the indiscriminate littering (plastics, vegetal waste and animal dung) of the streets. On questioning residents we found that there were no attempts by the MCD towards improving the sanitation in the area. After navigating through the narrow by-lanes, the blatant stealing of electricity/ power became evident with power cables being highjacked using power lines supplying electricity to various households and shops.

One persistent problem that has been plaguing Sangam Vihar ever since it came into existence was the lack of water in the area with the absence of supply by the Delhi Jal Board. Local residents of the area informed us of the presence of a multitude of private operators across the colony that were responsible for providing water to the residents at discriminating prices. The residents too revealed that private contractors provided electricity to them.

The postal system is inoperative in the area thereby, denying the residents of Sangam Vihar, one of the most basic and essential services.

Health is major issue in Sangam Vihar where the government needs to intervene. Even though there have been efforts by NGOs like CASP, Samadhan, Mamta etc., they cannot reach out to the entire area across Sangam Vihar. Moreover, people living there belong to a low-income strata and hence, cannot afford private doctors and clinics. A number of unrecognized clinics and dispensaries run by self-proclaimed doctors have mushroomed and quacks running their businesses at the expense of the ignorance of the local population is a common phenomena.

3. Community Profile

During the course of our two months of research we came across people engaged in a wide spectrum of activities. Men of the community were found to be the main breadwinners of the family. The majority were found to be unskilled workers including construction workers, masons and labourers. We also came across cases of bus drivers, vegetable vendors and street hawkers. A large number of people have opened small convenience stores teashops and ration shops, selling food, stationary, toys and other goods for daily use. Contrary to the commonly held perception of a low income colony, Sangam Vihar is home to a large number of electronic goods stores, clothing and footwear stores, cable operators, stores selling pipes and building material etc. Many entrepreneurs are engaged in the supply of water, electricity while some have set up private schools, the majority of which are unrecognised.

The bulk of the residents of Sangam Vihar are migrants from Uttar Pradesh, Rajasthan, Bihar, Madhya Pradesh and Uttaranchal or offspring of migrants. A survey of 200 heads of households

conducted by Vedeld and Siddham in 2001[11] found that 83 percent of the respondents' decision to move to the colony was motivated by an opportunity to improve income identifying it as the main 'pull factor', while 93 percent identified deteriorating income at native place as the main 'push factor' governing there decision to relocate. Low property prices and low housing rents were found to be the factors that made them choose in favour of Sangam Vihar over other parts of Delhi (59 and 29 percent of the respondents respectively). The majority of householders arrived in Sangam Vihar when it resembled the commonly accepted definition of a slum characterized by ramshackle dwellings and rudimentary infrastructure. The transfer of land was carried out by the exchange of the 'power of attorney'. Over time with increased security of stay migrants invested more into the development of their homes and more permanent structures evolved. Vedeld and Siddham see this as evidence of a 'long term economic strategy' on the part of migrants. Interaction with the residents of the colony revealed that the incentive to live in the colony was more than a purely monetary one. Many claim that life in the city provides access to a whole lot of amenities that are ordinarily out of their reach in a village such as electricity, health facilities and schooling for their children. Their lives are now indelibly linked to the city and Sangam Vihar since their families are settled there (in many cases in excess of 10 years) and their children engaged in various activities, be it employment or academics. As opposed to a rural set-up and the limited opportunities it holds for lifestyle as well as livelihood, the city has a plethora of choices.

4. Private Provision of Electricity

In the year 1997 the Delhi Government proposed a scheme to bring electricity within the reach of residents of unauthorized colonies. Before this policy was initiated, residents either resorted to stealing power from nearby sources such as Batra Hospital or by running there own generators. During that period, there was blatant stealing of electricity from DESU (Delhi Electricity Supply Undertaking) poles. In the absence of the DESU or any other regulatory body, private operators operated big generators (15-50 Kva) and provided electricity to residents of the colony at exorbitant prices.

The proposed scheme, also known as the 'Single Point Delivery System' was to be run as follows. Power would be supplied in bulk to transformers located within the unauthorized colony by the Delhi Vidyut Board (DVB) through an 11kVa high-tension line, which would be further distributed to residents by private contractors. The construction of the entire infrastructure for this distribution of power such as lines, poles and installation of meters etc. was the responsibility of the private contractor. The 'motoring arrangement for measurement of bulk energy to be delivered to the Agency for distribution' was to be provided by the DVB as mentioned in the DVB's scope of work[12]. The contractor is required to "lay insulated low voltage wires on poles for distribution of electricity taking into account the safety aspects as per Indian Electricity Rules 1956". These contractors were awarded contracts for the purpose of revenue realization and were referred to as an 'agency'. The agreement states that " (the) DVB is desirous of getting the job of revenue realization from persons using electricity from its sources in the designated J.J. Basti to be defined hereinafter, carried out through an Agency".[13] In return for his services the DVB would permit the contractor to retain 25% (15% in 1998) of the monthly bill, which was due to be paid to the DVB. The contracts were of different durations varying from 1 year to 7 years. Any interested party was required to furnish the following documents in order to secure the contract.

[11] Vedeld, Trond and Abhay Siddham. 2002. *Livelihoods and collective action among slum dwellers in a mega city (New Delhi).*

[12] Single point delivery system contract agreement as on 9 Aug 2001. Signatories were the DVB and Noor Mohammad, private contractor.

[13] Ibid.

1. Letter of recommendation from the 'Pradhan' of the association.
2. Papers verifying ownership of land (each contractor must operate from his own premises).
3. Letter of recommendation from the area MLA.
4. An estimate of the number of houses to which electricity would be extended and a map of the area. The scope work of the agency as per the agreement was to "prepare a statement of all the hutments of the area, name and address of the head of the head of the family drawing electricity."[14]

The contractors were also required to deposit with the DVB an amount equivalent to the assessed two months receivable from the residents of the block. Each household was required to pay a minimum of Rs. 600 as security charges.

When the scheme was launched initially, those who had sufficient muscle power and money applied for the SPDS contract and started the business. The initial investment is roughly Rs 35-40 lacs. There are currently 22 private contractors operating in the area with number of households served by each ranging from 600 to 1800. [15]
When the DESU was 'unbundled' in 2002 and replaced by Reliance owned BSES (Bombay Suburban Electric Supply Limited) these contracts remained in force. The rates under which the electricity is provided are identical to rates charged by BSES throughout the city. The following are the slabs under which electricity is available.[16]

1-200 units: Rs 2.20
200-400 units: Rs 3.60
> 400 units: Rs 4.10
+ 5% electricity tax charges

In theory, the provision of electricity by private contractors of the DVB is superior to the pre-existing system in the following ways.

- The measures were seen as a way of bringing down incidences of power theft. Theft of power has gone down since: private operators have their own vested interests (profitability) to oversee operations. Moreover, unlike the DVB, private contractors have the requisite manpower and resources to overlook operations. Many have employees whose duties are exclusively related to preventing theft. As per the agreement, "the Agency shall maintain supervisory and other personnel to efficient management"[17]
- The private providers charge at the rates specified by the BSES, hence, cannot make monopoly profits. Contrasted with arrangements in slum areas such as Trilokpuri where private providers charge a flat rate from each household (such as Rs 100 per month)[18], here the electricity use is measured by meters.
- The private contractors provide street lighting which is socially desirable, at nominal cost. An example being block C where private provider Atul Pundhir charges Rs 10 per household per month for the provision of streetlights[19]. The agreement signed by Noor Mohammad, Rajendra Kumar Sharma, Mahendra Kumar Sharma and Ram Avtar of the agency in block G and the DVB contains the following provision-

[14] SPDS Agreement ibid. , Pg 6
[15] Source: Rajeev Bilaiya, SPD Connections in Sangam Vihar Area
[16] Electricity Bills of Mr. Bhupinder, resident Block G, Sangam Vihar, New Delhi.
[17] SPDS Agreement ibid. , Pg 6
[18] Kundu, Amitabh. 2005. Interview by author. Verbal interview. Jawaharlal Nehru University, 11 May.
[19] Pundhir, Atul. 2005.Interview by author. Verbal interview. Sangam Vihar, 28 May 2005. Mr. Atul Pundhir is the Private Contractor (Electricity), Block C, Sangam Vihar.

"The street lighting in the G block, Sangam Vihar has been or shall be provided by the Slum Wing of the Municipal Corporation of Delhi and shall be maintained by the Agency"[20]

- The billing procedure would be more systematic and formal with providers or 'thekedars' as they are commonly known, issuing proper bills.

However, our attempts to gauge the opinions of residents have yielded mixed results. Overall, people seem to be happy with the provision of electricity. Many feel fortunate to have access to electricity at all. However, there does exist a feeling of discontent among some residents. Some residents of block G claim that a lot of money was collected as security without issuing any bills or receipts. On closer examination of electricity bills issued by one of the providers in the same block shows a consistent discrepancy of Rs 50-60 on the amount payable as per the above-mentioned slabs and the amount actually charged[21]. The private contractors claim the difference between the meter costs and the actual amount charged accounts for service charges: which includes maintenance costs, fixed charges and street light charges. While some specify these on their bills, others do not. This absence of accountability has understandably been a cause for dissatisfaction in some quarters.

Interaction with some private contractors helped throw light on the problems faced by them, which often tend to be ignored. The following information was provided to us by Mr. Ramnivas Bhadana, President of the RWA of block H that provides electricity to 1800 homes.[22] (1100 registered users[23])

1. Transmission losses including payment defaulters and power thefts are to the tune of 1 lac units per month. The mechanism they use to calculate these losses is to crosscheck their meter readings with the meter readings of their consumers. There is no clause in the contractual agreement that covers transmission losses. Therefore the commission of 25% is effectively much less.
2. A lot the customers have not paid their arrears. These defaulters add to the providers' losses. The extent of due payments in the case of this agency is estimated at Rs 4 lacs.
3. Power theft is another cause for concern. He lamented the absence of any redress mechanism for contractors. There is no way by which an individual provider can take a defaulter to court in order to bring him to book. In such a situation contractors have to rely on the services of their staff to settle such issues often resulting in violence. Bhadana claimed that as a contractor he tries his best to avoid such situations. He claimed that since most contractors have built up a rapport with their customers they try to work things out amicably. The consumer on the other hand is encouraged to lodge a complaint against errant contractors.
4. Apart from these problems, the contractors have also faced harassment from the BSES. According to pre-existing contracts the bill that was due to be paid was excluding the 25% commission that accrued to the contractor e.g., If your payable bill was Rs 4 lacs, the contractor was issued a bill of Rs. 3 lacs and allowed to retain 1 lacs as commission. However when BSES took over the provision through SPD they added this entire deficit as arrears claiming that the contractors were liable to pay debts to the tune of Rs 10-15 lacs that included a late payment surcharge of 1.5% per month. Further, any requests for increase in load have been repeatedly denied.

[20] SPDS Agreement, DVB, Delhi.
[21] Consumer's Electricity Bills, Block C
[22] Bhadana, Ramniwas. 2005. Interview by authors. Verbal interview. Sangam Vihar, 7 June. He is the President, Resident Welfare Association, Block H, Sangam Vihar
[23] Source: Bilaiya, Rajeev. Assistant Manager, Key Consumer Cell, BSES-Rajdhani, 10 June 2005.

5. Even though the transformers are initially provided to the contractor by the BSES (after depositing the requisite security charges), the costs of repair or replacement is borne by the private contractor. Purchase of a new transformer involves expenditure of up to 4-5 lacs.

Bhadana also claimed that the Singe point Delivery system had failed to live up to its promise due to infrastructural shortages. When the SPD scheme was first introduced, it was assessed by the DVB that each household would require 1kVa of power. Therefore, each transformer of about 630kVa is enough to meet the needs of about 600 households[24]. Each transformer is sufficient to supply electricity within an area of 8 acres. Anything in excess of 8 acres results in heavy transmission losses. However the ground reality is that he is providing electricity to 1800 houses with two transformers of capacity 630KVA each and each transformer operates in area of radius 10-15 km. This excess utilization results in losses and is also responsible for inconsistencies in supply. There is just not enough to go around and this makes the provision inefficient and electricity supply erratic.

The Resident Welfare Association of block H proved to be an interesting case study. The electricity bills issued to residents are done so in the name of the RWA. They specifically mention that the customer is being charged fixed charges of Rs. 20, service charges of Rs. 25 and a further Rs. 30 for provision and maintenance of streetlights[25]. We also had the opportunity to examine the accounts of the agency, which were surprisingly systematic. Each bill is assigned a bill number and each consumer is assigned a consumer number. Details are maintained on the account sheets including the address of the consumer, details of his connection (domestic or commercial), his arrears if any and whether or not he has submitted development charges. Those who have failed to deposit development charges (many of whom were recommended to the contractor by friends or existing consumers) are classified as 'W.D.C' or without development charges. The billing office was equipped with a register in which complaints and requests for repair could be recorded. During one of our visits we actually saw customers coming to the billing office to pay their bills, which were duly stamped by an employee of the RWA, and we witnessed a complaint being lodged.

Two private contractors who succeeded in duping the DVB out of sums to the tune of Rs 35 lacs and 84 lacs respectively preceded the RWA in block H. The last contractor: one Sharafat Hussain's bills show that he failed to deposit Rs 82,20,670 with the DVB on the due date of 29 September 2002, following which the supply of electricity to his consumers was suspended by the DVB. The Resident Welfare Association filed a writ petition in the Delhi High court seeking the restoration of electricity supply. The DVB was ordered to restore power subject to payment of Rs. 900 by members of the RWA (the residents of block H).[26] The RWA was registered under the Societies Registration Act XXI of 1860 on the February 10, 2003.[27] The matter was dealt with quickly since discontinuation of electricity supply meant that residents would have no way to pump water for domestic use from bore wells which are the mainstay of their water supply.

It is hard to say if all 22 private contractors operate in as systematic and transparent manner as the RWA of block H. However most of our findings were confirmed in interviews with other contractors. Both Noor Mohammad (contractor, block G) and Atul Pundhir (contractor, block C) confirmed that they charged nominal amounts as maintenance charges and for provision of streetlights. When we attempted to interview Mr. Kamesh Aggarwal (contractor, block H) we found he was away supervising some repair work which shows that these entrepreneurs are

[24] Source: Rajeev Bilaiya ibid., Pg 8
[25] Consumer's electricity bills issued by RWA of Block H dated 01-06-2005
[26] *Resident Welfare Association vs State &ORS.* CW 6219/2002
[27] Certificate of Registration Registration No.S/ 45377 issued by Registrar of Societies, Government of NCT of Delhi

responding to complaints from there customers. However, we also came across cases where the offices were closed and the contractors and their staff out of reach in the event of a power failure.

BSES is slowly trying to roll back the system of private contractors in the area. In an effort to cut out the middleman and prevent instances of default, the BSES has adopted an alternative system called the 'High Voltage Distribution System'. This involves fitting individual drum transformers that serve about 10 households each in every colony. It has already implemented such schemes in few of the blocks and is also in the process of installing a service and a bill collection center inside Sangam Vihar. For the purpose of starting operation in these areas they are charging a fee of Rs. 7500, which includes a security of Rs. 4000, Rs. 2000 for installation of service lines and meters and Rs. 1250 as an advance.[28] The scheme may prove to be expensive in the short run but its long run advantages far outweigh the initial cost involved. The prescribed slabs for development charges are as follows,

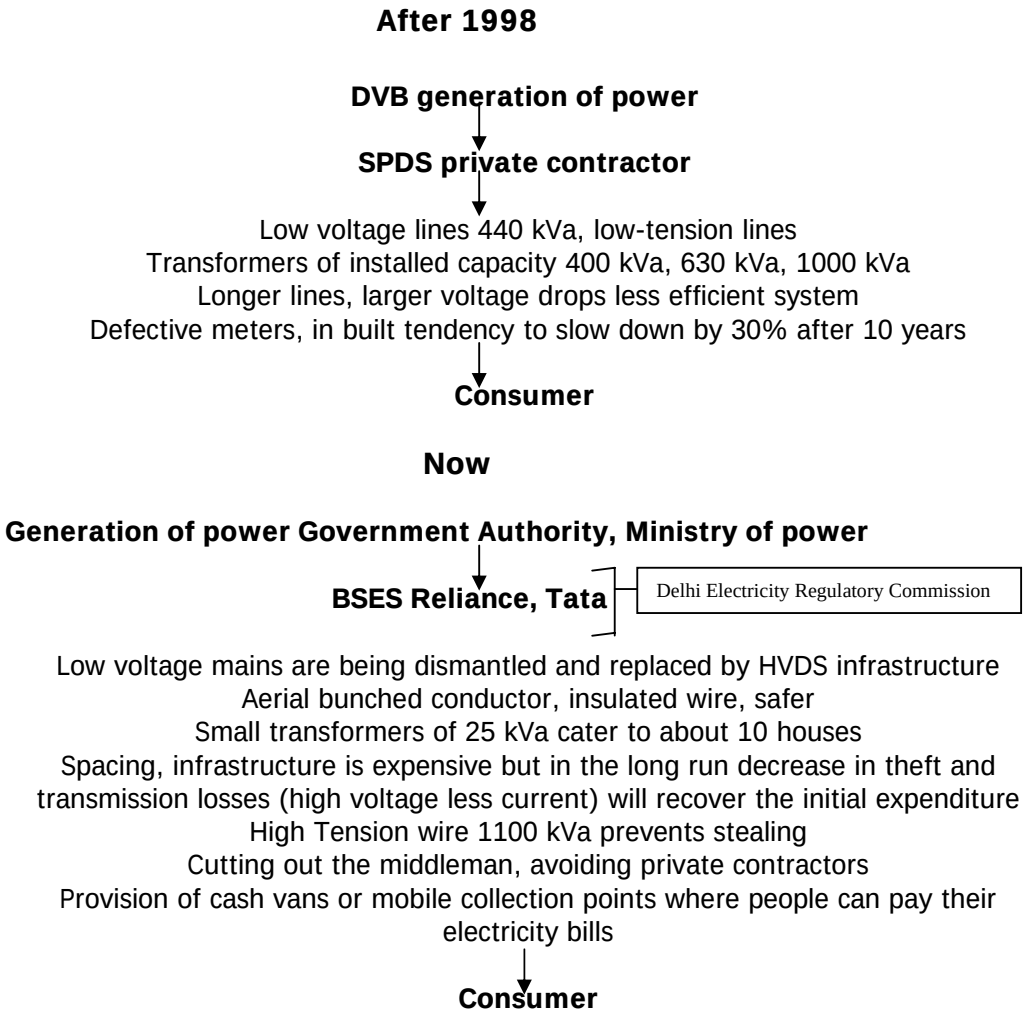
1-100 sq. yard=Rs. 4000
100-200 sq.yard=Rs. 10,000.

This alternative scheme is said to be superior to the SPDS. The BSES specifies the following merits as rationale behind the HVDS,

- It drastically cuts down on transmission losses, which could be as much as 25-30% in the existing SPDS. [29]
- The 11kVa line will act as a deterrent to anyone attempting to indulge in theft of power.
- Stable Voltage.
- Un-interrupted power supply.
- Minimal consumers affected by a breakdown, since a single transformer will cater to only 10 consumers.
- Quicker rectification incase of breakdown in the distribution system.
- The 3 phase connections are still operational in the HVDS system, the only difference being that unlike the LVDS system, all the phases are bundled into the single HVDS cable. This infact, saves space, is much safer and mitigates several operational difficulties, which arise during installation of the HVDS infrastructure.

[28] Source: Rajeev Bilaiya ibid. , Pg 6
[29] -do-

A diagrammatic representation of the different mechanisms for provision of electricity follows-



Before 1997 Generators, Stealing of power

Sangam Vihar is not the only low-income colony where BSES is undertaking provision of electricity using the HVDS. They are allocating Rs. 700 crore for building up infrastructure for provision of electricity in unauthorized colonies. It further plans to invest an additional Rs. 1000 crore. The DDA is developing a resettlement colony in Hasthsal, West Delhi and has worked out an agreement whereby it pays 50% of the expenses to be incurred in the provision of electricity and BSES invests the remainder. This is an example of cooperation between the two.

The implementation of the HVDS, however, appears to be an uphill task and the economic viability of doing so may be questioned due to the following,

- Installation of new meters in each house in Sangam Vihar means additional costs both on part of the residents and BSES.
- Sangam Vihar stretches over a vast area covering more than 2 lakh households. Efficient distribution can only be ensured if there is adequate supervision and

maintenance. This will require vast manpower resources, which may prove to be challenging.

- Inconvenience caused to the consumers is also an important consideration. In the existing decentralized system residents of the colony could easily report any faults or disruption in service at their local *thekedar's* office. Now they will have to do so at the Khanpur office of the BSES, which is further away.
- Many residents of the colony are daily wageworkers. Previously they had the luxury of depositing their bills at any time, as contractors work hours are flexible. However, under the new system they might have to dedicate the better part of their day to the practice of paying the bill, something many can ill afford.

At the end of the day private contractors are most often residents of Sangam Vihar. They know many of their consumers and above all it is in their best interest to be well versed in the ins and outs of the locality itself. Their knowledge of the grass root situation is unrivalled and will be difficult to duplicate by a single provider.

The BSES argues that being a private enterprise and one that aims to maximize profits and minimize losses, it is in its best interest to cut down on instances of theft, default and also to minimize line losses. Improvements in technology and introduction of the HVDS may facilitate a more efficient system of distributing power and one that is less susceptible to theft. Even the BSES officials claimed that with regards to unauthorized colonies, no fixed plan of action could be employed due to the unplanned nature of the colony. While, installing the HVDS system in Sangam Vihar, BSES ran into several technical difficulties while setting up the infrastructure as some of the bye-lanes were not wide enough to accommodate poles and HVDS transformers. As such, BSES had to improvise and resort to alternative techniques to overcome these difficulties.[30]

How capable the BSES is in coming good on all its promises is something only time will tell. Any distribution that curtails losses, both inevitable and unaccounted for is appealing. However, its efficiency can only be gauged by its impact on the lives of the consumers. We came across households in block B where the HVDS system was to be in operation where electricity supply had remained absent for three days and people did not know where to register their complaints. These may just be teething troubles that can be solved if there is a willingness to innovate. The SPDS system though flawed did have certain attributes that made it an attractive albeit transitory one. The cases of default notwithstanding, the decentralized revenue realization has proved to be successful in most parts of Sangam Vihar. And in the event of default the example of block H illustrates how adversity forces individuals to take control of the situation. The BSES would do well to employ the services of local residents when it comes to revenue realization and set up as many collection and complaint centers as possible. There also needs to be a mechanism by which residents can address their complaints to the DERC or the monitoring body so as to increase BSES's accountability. Local resident welfare organizations can play a pivotal role in the smooth functioning of this mechanism of redress.

5. Private Provision of Water

Private players dominate the provision of water for Sangam Vihar. Private players can be broadly classified under three categories. First, private entrepreneurs who have dug their own bore wells and sell water to a large number of households of Sangam Vihar. We have

[30] Sahni, Narendra. 2005. Interview by author. Verbal interview. BSES-Rajdhani office Adhchini, 23 July. He is the Additional General Manager (previously known as Chief Engineer).

encountered very few instances where private entrepreneurs provide water on a large scale and it is quite likely that these suppliers are in a minority.

The majority of the water providers are smaller players who may individually invest their resources into digging of private bore wells or collectively pool in money to fund the initial expenditure. They further supply water to other houses in the neighbourhood at fixed monthly rates. Many claim to have dug these bore wells due to sheer necessity and that they extend their services only to the residing tenants, the cost of water being inclusive in the monthly rent.

The third kind of player is the '*tanker walla*' or those who supply water by delivering it in tankers.

The provision of water is dominated by the second kind with as many as three or four bore wells in one '*gali'* or by-lane, making their number next to impossible to ascertain. The most prevalent way in which water is supplied is through privately owned bore wells. These bore wells are dug to a depth 350-400 feet. Pipes leading out from the source (2 inch thick pipe) are connected to pipes of thickness ½ -1 inch. These subsidiary pipes are finally connected to the individual tanks of the houses. Water is provided once or twice a day depending on the requirement of individual households. The main source is switched on for about an hour, and once the tank is full, the capillary pipes are sealed using washer taps (acts the same way as circuit breakers). The cost of laying down the main network of pipes is borne by the private provider for which he charges an initial development charge of about Rs 500. The consumer incurs a further charge for the installation of a network of pipes within his house.

The monthly rates charged by private bore owners vary between Rs 250-400. In the absence of any regulatory body, the water provider is free to charge discriminatory rates. Some in fact claim to charge less from people who they consider to be economically backward. A minor survey conducted by us revealed that different households availing of the services of one water supplier were in fact paying different rates.

One of the most interesting findings of our research was that we came across very few cases where an individual provides water to over 100 houses. Furthermore in the two such cases that we had the opportunity to interact with the entrepreneurs in question, both turned out to be engaged in the provision of electricity as well. These were the contractors of block C, Atul Pundhir and the President of the RWA of block H, Ramnivas Bhadana. While most water providers are reluctant to spell out their motives for undertaking these activities both Pundhir and Bhadana were quite candid in their admission of profit as an incentive and the estimates of initial investment and running costs they provided were are largely similar. The initial outlay for a major player is in the vicinity of Rs 40-50 lacs. This is required to cover the cost of digging a tube-well, laying down pipes across the colony, manpower, electricity charges and other miscellaneous expenditure. Moreover, maintenance costs of upkeep of the water lines, servicing of the pumps and the bores, salary of workers etc. are incurred each month to the tune of Rs 20,000-30,000[31]. The cost of digging a new bore well is estimated at Rs 2.5-3 lacs. The following information regarding costs of drilling and maintenance of bore wells (all figures in rupees lacs)[32]

- Digging of tube wells 3.476
- Operating costs 1.573
- Maintenance 1.025

[31] Source: Atul Pundhir ibid., Pg 7
[32] Center for Science and Environment, New Delhi, India.

Bhadana informed us that the cost of digging a bore well is roughly Rs 3-4 lacs. The abstraction of water from the ground is carried out using submersible pumps. The cost of operating bore well using submersible pumps (cost of electricity) depends on the installed capacity of the pump. To operate the submersible pump required to provide water to 10 households costs roughly Rs 2,000-5,000 per month. As the capacity of the pump increases so does the electricity load required to operate it and consequently the costs of operation may range from anywhere between Rs 10000-15000 per month to Rs 20000-25000 per month.[33]

When asked if private water providers were forced to pay any bribes to officials of administrative bodies such as the officers of the Sub Divisional Magistrate (SHO) and law enforcing authorities, we were informed that such under the table transactions do take place but only in the initial stages. Each official, be it officers of the SDM, Station House Officer (SHO) and local beat policemen demands a cut when the bore well is being dug. Subsequently officials tend not to bother the provider, as he is likely to face opposition from the local residents. Water being a basic requirement is an understandably sensitive subject for local residents. Any interference on the part of officials is not likely to go down well with the residents and officials avoid tackling the opposition. Bhadana went, as far as to say that anyone creating trouble for the water providers would be beaten up mercilessly.

Even after two months of fieldwork in Sangam Vihar we have not come across a homogeneous picture as far as provision of water goes. There is no one model that can claim to be representative of the colony. Our interaction with residents has yielded widely varying results. A brief survey of about 25 households in close vicinity of one another also brought out starkly different accounts. We found that in most cases new entrants into the colony are approached by various water providers who vie for their attention.[34] Some private providers approached consumers exercising salesmanship at its best. These providers managed to win over many consumers who had existing supplies of water. These cases are a true testament to ingenuity of businessmen. To have identified that water, being a basic need is a commodity, which can be sold.

Initially residents are somewhat independent to choose which provider's services they will avail of. However, once the pipes are laid down a consumer has little option but to continue with the existing provision. The option of switching to another bore well owner can only be exercised by those who are willing to incur the cost of laying down a new distribution network. Even if water supply remains suspended for prolonged periods they are required to pay the full amount as specified. In cases of extreme shortage they can take their buckets and utensils over to an operational tap and pay for water. These payments may be to the tune of Rs 20-30. When water supply remains suspended for days on end residents have to resort to ordering water by tankers and pay about Rs 500 per tanker of water.

In an attempt to gauge the level of satisfaction of residents with the water supply we once again encountered diametrically opposite experiences and viewpoints. Some residents informed us that they were living in rented accommodation and that their rent was inclusive of water charges. One individual claimed that he was very satisfied with his water provider stating that in the event of a suspension of water supply the bore well owner would order in a tanker of water for all his customers. Most people however, had a grouse with the water provision claiming that the unreliability of timings posed various hindrances in their day-to-day lives. Perhaps the only redeeming factor was reports they had heard from nearby recognized and so called upper income colonies, which are grappling to come to terms with a similar water shortage.

[33] Source: Ramnivas Bhadana ibid., Pg 7
[34] Residents of Sangam Vihar. 2005. Interview by authors. Verbal interview. Sangam Vihar, 24 July

The limitations can be attributed to several disadvantages faced by water providers themselves. As mentioned before, water supply from bore wells can only be established if it can be pumped using submersible motors. During the summer months power cuts are commonplace creating problems for water supply. Another reason may be that there is just not enough water to go around. Water providers claim that a bore with a capacity to provide uninterrupted or at least regular supply of water to 10 households may often be used by many more. Even if residents had more choices and alternatives the situation would not improve since all water providers are facing a similar crunch. Perhaps the problem is not so much one of distribution of water but one of availability.

We have also come across some instances of community management of a bore well. D block for example houses one of the few legal bore wells in the colony, which was reportedly dug using the MLA's funds. The residents of this block contributed money to purchase a motor to operate the bore well that was constructed. This bore well is pumping water, using funds collectively pooled by the residents. However the residents of other blocks were unable to arrive at any similar agreement and had to make do with private contractors with bore wells in their houses.

The owners of 'Kumar Cable Services' in block G for instance are running a private primary school. A bore well was dug on its premises for the purpose of providing water to the students. Thereafter the owners started selling water to residents of the locality. He had no estimate of the number of houses he is providing water to. The system involves no formal contracts, agreements and billing. He said the supply of water was very irregular. If a certain provider is unable to provide water on a given day the resident can avail of the services of an alternative provider. There is no systematic way of collecting dues and rates vary from Rs 200-300. [35]

One interesting case was in block F where residents, dissatisfied with provision of water by a private bore owner decided to take matters into their own hands. They pooled in money (Rs. 1000, Rs. 2000, Rs. 3000) from each house in the colony and collectively manage the bore well. Residents of this locality seemed fairly pleased with the system. However they appeared to be far better off in terms of income as could be gauged by the nature of there houses and the fact that some even owned vehicles. Residents in nearby houses expressed dissatisfaction that such an arrangement was beyond their humble means. In fact they claim to have offered to pay for water provided by the community managed bore well and been denied the same.

Another case of community management was observed in block G, where six or seven individuals pooled in the funds (Rs 2.5-3 lacs) for digging of the bore wells (300-350 ft. deep) and laying down the lines of supply. The bore was initially dug to meet the needs of self-consumption and sale of water was started only later so as to cover initial costs.

All the providers we interacted with are aware that their activities are illegal and this proved to be a major hurdle in communicating with them. Last year, 4 tube wells in G block of Sangam Vihar were sealed by the SDM, Kalkaji. When asked why this extreme action was taken the SDM replied that it was his duty to prevent the digging and use of bore wells that are illegal. [36] However, in spite of regulatory bodies and legislations, illegal bore wells and tube wells continue to provide water to the residents.

Another concern the residents expressed was the quality of the water they were consuming. There are no effective measures to check the purity of the water supplied. Mr. R. K.

[35] Residents of Sangam Vihar. 2005. Interview by author. Verbal interview. Sangam Vihar, 24 June
[36] Prasad, Rajendra. 2005. Interview by author. Verbal interview. Tughlakabad, 1 June. He is the SDM of Kalkaji.

Sreenivasan of the Centre for Science and Environment (CSE) informed us that water obtained from bore-wells in Sangam Vihar is unfit for consumption. As a result of the absence of sewerage systems and lack of sanitation in the area, dirty water accumulates on the *kuccha* path and percolates underground, contaminating the existing water. Further, groundwater levels in south district are declining at the rate of 3-12 ft. annually[37]. We have seen first hand evidence of this degradation, as hand pumps, which once drew water from 250 ft. below the surface, have been rendered useless.

While conducting a case study for water provision within Sangam Vihar, one could loosely characterise the prevailing model for water provision as being oligopolistic in nature. The territories of these providers have been informally marked out and as per mutual agreement one water provider does not encroach upon another's territory. However, disputes and clashes between these providers have been reported when such territorial disputes occur. However, there still is a provision whereby, a household can change his water provider subject to the fact that there is in fact another water provider within the vicinity ready to provide water and the entire cost of changing pipe networks and other additional costs have to be bourn by the households themselves. As such, this possibility of a change only exists with households with adequate resources which as far and few in number. The majority is stuck with the same water provider.

Private water tanker suppliers also cater to Sangam Vihar's water needs. Most residents identify tankers as a supplementary source of water, which could be ordered if the available supply from private bore wells is found to be insufficient under special circumstances such as marriage or construction. Though tankers traversing the narrow by-lanes is a common sight in the early hours of the morning, how many of these actually cater to residents of Sangam Vihar is a question that requires further investigation. The proprietor of Choudhary Water Suppliers, Choudhary Sukuram Singh claims that seven years ago, he was the only major private provider for water in Sangam Vihar and this number has grown to 75. Due to competition, profitability has suffered. But the private suppliers' loss was the consumers' gain as residents of Sangam Vihar are the main beneficiaries in the existing price competition. The business is no longer profitable as diesel prices are rising, water is becoming scarcer and most importantly the number of players has increased drastically[38]

Sukuram Singh owns his own bore well in Faridabad. Others such as Yadav water suppliers have their tankers filled up in Faridabad, Shahadpur Village in Haryana (near Meethapur) or fill water at a nominal cost from adjoining areas (Rs 100-250). Each tanker of water is sold at Rs 550-600 making a profit between Rs 100-150 per tanker of water after taking into account the costs incurred such as diesel costs, salary of workers, maintenance charges etc.

The following is the cost structure for a private enterprise that owns 10 tankers[39]

- Initial Investment: cost of a tanker = Rs. 20,000-30,000 for a second hand tanker and if you order a new one it is likely to cost Rs. 60,000
- His initial investment was to the tune of Rs. 3,00,000
- Capacity of tankers varies from 500 litres, 800 litres, 1000 litres etc.
- Cost for filling one tanker (500 l) is Rs. 100 (paid to owner of bore well)
- Diesel costs per trip Rs. 100-150
- Driver's Pay (per trip) Rs. 150

[37] Source: Times of India, 2002

[38] Singh, Sukuram. 2005. Interview by authors. Verbal interview. Sangam Vihar, 1 July. He is the proprietor of Chaudhary Water Suppliers

[39] Yadav. 2005. Interview by authors. Verbal interview. Sangam Vihar, 5 May. He is the proprietor, Yadav Water Suppliers.

- Tankers make about 3 trips per day (may make more as per demand 4-5).

The bore well at Shahadpur is 3-4 inches wide and provides water readily. A tanker of capacity 500 litres can be filled in a matter of minutes. But this area is far away and therefore diesel costs are high. Whereas in other areas which are close by bore wells of width 1.5-2 inches takes up to two hours to fill a tanker. This disrupts the schedule of the water provider.

- Roughly the cost of supplying one tanker full of water is Rs 400.
- Profits are about Rs 100 per tanker.
- Maintenance costs not specified.
- Above and beyond this they are also made to pay bribes of Rs 100-200 etc.

Being a resident of Sangam Vihar himself, he claimed that there were no cases where people with private bore wells within Sangam Vihar were supplying water through tankers. According to him these resident suppliers only supply water to neighboring households and people living in accommodation rented out by them. The practice of supplying water by tankers is not prevalent. However, on one of our initial field trips we noticed something quite the contrary. In one of the *galis* leading out from *Ratiya Marg* a tanker was being filled with water from a private bore well. The householder claimed the water was being provided to their tenants living in another part of Sangam Vihar.

Mr. Narendra Tomar, Executive Engineer of the Delhi Jal Board's South West Zone claimed that DJB tankers were being sent to unauthorized colonies to meet the water needs of people residing there[40]. He informed us that this was just a temporary measure, which would continue till proper lines could be laid down. This infrastructure is to be built by collecting 'development charges' from residents of the unauthorized colony in question. However, throughout the duration of our fieldwork we did not see a single DJB water tanker and neither did we come across any individuals who are supplied water by them. A telephonic conversation with an official of the DJB with blocks A to G under his control informed us that the DJB had 7 deep bore wells operating in the area, 200 hand pumps and that the board provisioned for 15-20 trips of DJB water tankers on a daily basis.[41] Having spent a fair amount of time in Sangam Vihar particularly in the vicinity of the above-mentioned blocks we feel that we are in a position to state with some certainty that there is no provision of water by the DJB. Not once did we see DJB tankers in the area.

6. Ground Water- A Vanishing Resource

In response to a judgment by the Supreme Court, the Central Ground Water Board was established in 1997.

The Central Ground Water Board in its report has expressed concern about the indiscriminate use of ground water and the subsequent depletion of the water table, lowering of ground water levels and depleted ground water yields. Local groundwater depressions have been created due to excessive ground water pumpage like in the Chattarpur basin, Cantonment area and South Delhi. The excessive ground water pumping in fresh ground water areas has resulted in the upcoming of saline groundwater saline and unusable.[42]

[40] Tomar, Narendra.2005. Interview with author. Verbal interview. Jal Vihar, 18 june. He is the Executive engineer (South II), Delhi Jal Board.
[41] Telephonic Conversation with Mr. Manchanda, Executive Engineer Delhi Jal Board, South Zone.
[42] Central Ground Water Board. 1996. *Development and augmentation of ground water resources in National CapitalTerritory of Delhi.* Delhi

The hydro geological situation in a territory determines the ground water availability. Sangam Vihar falls under the NNE-SSW trending Quartzitic Ridge and consists of quartzite rocks. These hard rock formations provide fresh water but have an inherently low capacity to yield water. The quartzitic formation offers high runoff and less scope for rainwater infiltration. In such a situation recharge of aquifer appears to be a difficult task. The augmentation of hard rock aquifers though may not result in large-scale additionality for further development but may provide sustainability to over developed hard rock aquifers. The Mehrauli block of which Sangam Vihar is a part has seen the ground water levels decline drastically. During 1977, the water table was by and large within 6 meters below ground level (mbgl) and was 23 m. bgl in some parts. In 1983 the depth to water level declined to 10 m. bgl in major parts. By 1995 the deepest water level in the block was about 35 m. bgl. This largely confirms the picture in Sangam Vihar where hand pumps dug to a depth of 200 meters are no longer operational.

To this effect the CGWA issued a notification as per its mandate, declaring all bore wells in 'notified areas' illegal.

> "Whereas the Central Ground Water Authority, has been constituted under sub-section (3) of the section 3 of the Environment (Protection) Act, 1986, vide notification no. S.O. 38 (E) dated 14.01.97 for the purposes of regulation and control of ground water development and management.
>
> Whereas Authority is in exercise of its powers and functions as provided in clause (v) of sub section (2) of section 3 of the Environment (Protection) Act, 1986, has declared Najafgarh block, Mehrauli block and Vasant Vihar and Vasant Kunj areas of NCT, Delhi as 'Notified Area' on block/area wise basis vide public noted dated 1.4.98, 24.12.99 and 25.4.99 respectively in view of depletion in ground water resources due to its over development/incidence of upcoming of saline water.
>
> However due to administrative exigencies, the notified areas have been re-organized on district basis. Now therefore in exercise of the aforesaid powers and in partial modification of the earlier notices, the Authority after considering the need for protecting the ground water resources and to ensure further development activities in consistent with protection and preservation of ground water resources, hereby declares whole of south and south-west districts of NCT Delhi as 'Notified Areas and imposes prohibition and restriction in these districts on the construction and installation of any new structure for extraction of ground water resources, to avoid further depletion and deterioration in water quality in the said districts.
>
> Further, henceforth, no person/organization/agency (Government or Non Government) shall undertake any scheme/project of ground water development and management in the in the above said districts without prior permission of the Authority. Any contravention of the above notice shall be dealt with in accordance with the provisions of Environment (Protection) Act, 1986.
>
> Chairman"

The Authority has a mandate to regulate the usage of ground water and prevent excessive use of this resource. As per its mandate it discourages all appeals that come to it. Exceptions are usually made in the case of hospitals, dispensaries, ladies hostels, schools etc. The CGWA's tough stance is understandable as it is purely fulfilling the mandate dictated to it by the Supreme Court. However, the ground reality remains that the bulk of privately owned bore wells are illegal

Under special circumstances the CGWA extends permission to communities, which have no alternative sources of water, to dig a bore well and manage it collectively. However the procedure for applying for permission is cumbersome and time consuming and has to be

cleared by a number of authorities. The procedure is highly complicated. Permission is only granted under the following conditions and the following terms are dictated.[43]

1. It must be ensured that the area has no official supply by the Delhi Jal Board or any access to an alternative source of water.
2. The permit is non-transferable
3. The drilling of the bore well must be carried out by a registered drilling agency
4. The bore width must not exceed 100 mm
5. The permission has a lapse period of 2 months after which the permission expires.
6. The individual or community that has been granted permission to construct a bore well must practice Rainwater harvesting mandatorily. The deadline for implementing the rainwater harvesting was the 30th of June 2005.
7. The water from the bore well is to be used purely for domestic purposes not commercial, agricultural or industrial purposes.
8. The individual is required by a clause in the agreement, to furnish abstraction details in order to regulate the amount of water that is being pumped out.
9. The permission also includes a 'discontinuation clause', which states that if the DJB starts providing water to these localities, abstraction from the bore well must be discontinued.

The regulation and monitoring of these bore wells is the responsibility of local authorities such as the District Commissioner and Sub Divisional Magistrate. There have been cases in Sangam Vihar, where the SDM sealed bore wells in response to complaints by residents that bore wells were being used to fill tankers and supply water to areas outside Sangam Vihar. This public censure notwithstanding we have witnessed scenes in block G where tankers were being filled and driven out of the colony.

The procedure for applying for this permission is as follows. The party that requires permission must approach the Central Ground Water Authority with its appeal. The CGWA then forwards this appeal to the Delhi Jal Board in order to determine if the colony is indeed in need of water in the absence of any alternative source. The DJB then recommends whether or not permission should be granted. Appeals may come from a local resident associations or the area Minister of Legislative Assembly. Under these circumstances the Authority remains one purely in name with continued exploitation of ground water in an indiscriminate manner.

7. A possible solution- towards effective management of water resources

One of the most pressing problems that can be foreseen is the long-term availability of ground water. The water table has already subsided from 150 feet to about 350 feet and in some cases, upto 450 feet. Hence, the primary issue to be addressed here is not pertaining to the distribution of water but its very availability. It is our opinion that bore wells and tube wells are not a sustainable source of water and their use should be discontinued. The data cited above also speaks in favour of finding an alternate source of water provision. However, given that the people of Sangam Vihar have no alternative source of water this has to be done in a phased manner.

Keeping in mind the difficulties that may possibly arise in an unplanned and unauthorised colony such as Sangam Vihar, we recommend the following model:

[43] Vardhan, V. 2005. Interview by author. Verbal interview. CGWA, 6 June. He is the Administrator of the CGWA.

- What we envision is a delivery mechanism that makes the most of the existing network of pipes. The DJB, after collecting developmental charges should aim to construct a main 'header' line connected to the municipal water supply. It should delegate the distribution of water into the hands of the Resident Welfare Associations (RWA). The RWAs in turn, can either subcontract distribution of water to individual private contractors or undertake distribution themselves. Private contractors being seasoned professionals will know how best to use the existing infrastructure to their advantage. The benefits of centralized ownership of water and decentralized distribution are that the DJB eliminates regional disparities in the amount of water supplied by bridging the gap between areas of surplus and deficit. This would eliminate price differentials. Further, since most residents seem disillusioned by the existing water provision mechanism a scheme backed by the government holds more of a promise of reliability. Thus the incentive to switch over to this alternative source exists.

- The RWA can throw open the field to any interested parties and invite contract proposals. Chances are that the bulk of applicants will be existing water providers. However the presence of a the RWA as a regulatory body may prove to be a step towards ensuring that the residents have more bargaining power when it comes to fixing prices. The RWA is then free to award the contract to the entrepreneur, who's proposed rate structure it finds most appealing. While the metered cost of water must be as per DJB prescribed slabs, miscellaneous charges such as maintenance and service costs will be a reflection of local conditions such as topography. The RWA can also retain the right to determine the incentive offered to prospective entrepreneurs and are free to determine whether these are monetary or otherwise. It would be in the RWA's best interest to closely monitor the activities of the water providers and the entrepreneur would have an incentive to cut down on possibilities of theft or wastages. It might be advisable to make it binding on the RWA to arrive at a way in which residents below a certain income level can receive water on somewhat less stringent terms and perhaps in instalments.

- It is also crucial that water use by residents be metered. Installation of meters would mean that rather than the flat rates people pay for water provision, their payment would be proportional to the amount of water they consume. This may act as a disincentive for excessive use. Meters must be installed in each household and also at points where the main header line is segregated into pipe-lines managed by the private contractors. This would provide a means of cross-checking meter readings.

- The proposed model is quite similar to the pre-existing SPD system for providing electricity. However the SPD system as characterised by a number of faults that the proposed model may rectify. The most important step in this system is to constitute a body that is representative of the interests of the people themselves. All RWA's to this effect must be registered bodies, that must claim to represent a minimum number of residents in one block. To make the system viable it is advisable to allot each RWA a legal entitlement of water proportionate to the number of households it represents. A set of legislations need to be incorporated to make the system viable. For example, an autonomous body like a " Delhi Water Supply Regulatory Board" could be set up to monitor and tackle problems at both ends, that is, ensure accountability of the DJB and that of the RWAs with respect to distribution.

- However, this proposed model can only be successful if the DJB ensures proper availability and flow of water to Sangam Vihar else, the whole system will collapse and

consumers will revert back to using ground water as their main resource even if it means paying more for it.

This is not a novel idea but one that is in line with the DDA's proposed strategy for regularisation and projects it plans to implement in all unauthorized colonies. As per their guidelines, 'Since the development work is to be carried out by the societies themselves, therefore no developmental charges will be deposited to the concerned local body, however, peripheral charges (external development charges) for various trunk services like water supply, sewerage, electricity etc. shall be payable to the concerned agency. The processing fees for regularization of the layout plan will be charged as decided by the concerned local body/DDA.'[44]

The idea we propose is analogous to the pre-existing SPD system. However the solution lies in installation of meters and also in making the Resident Welfare Associations more proactive. They must all be registered bodies thus adding a degree of democratisation to the process of setting them up and also increasing accountability. Whereas the SPD system absolved the DVB of any responsibility towards residents, leaving both the DVB itself and the customer vulnerable to possibilities of fraud; the proposed system by empowering the people through decentralised governance mechanisms-the RWA and a proposed regulatory body may prevent such mishaps from occurring. The RWA being a local body constituted of residents of the colony itself will be the best judge of the needs of its members and will have a far greater stake in judicious use of water than any administrative body.

If the rates of water decline under the proposed system as we expect them to it might actually lead to an increase in per capita usage of water. This would serve to hasten the end of indiscriminate use of ground water. What we hope to see emerge is a competitive market where bore wells, municipal supply of water and private tankers participate competitively. Private players themselves may try to innovate and find alternate means of supplying water such as, streamlining their own operations (i.e. cutting down on wastages) or hiring tankers themselves, perhaps in bulk at a discount and then distributing water.

Regarding direct intervention of government/administrative bodies, there have been several instances that illustrate that these bodies are working at cross-purposes to schemes, which they themselves envisage. The DDA has undertaken schemes, which are in violation of its own master plan. Those who argue for government intervention must realize that government bodies have time and again proved themselves to be incapable of administering these services effectively. Not because of incompetence but the fact that the task at hand is just too large. What can be done is to have a regulatory body something along the lines of the DERC to regulate prices and ensure that consumers are not being duped (stands confirmed by Indian express article).

Government bodies can however play a crucial role in dissemination of information. It has at its disposal resources to identify ground water levels. Perhaps if such information were released on it would lead to better resource management leaving room for entrepreneurs to decide how best to allocate the resource. Most people are aware of the problem, too many of them just choose to remain indifferent or ignorant. People who have been residing in Sangam Vihar for in excess of 10 years would have noticed a visible decline in groundwater levels. Awareness programs carried out in association with civil society players may provide the little push in the right direction.

Some may contend that community management would only be a viable solution if residents of the area had a permanent interest in the area. Most of the population in sangam vihar migrated

[44] Revised Guidelines for Regularisation of unauthorised colonies in delhi, DDA. Dated Feb 2004

into the area due to low property prices. If the cost of living becomes too large it is conceivable that they will move on to another area. Therefore their long-term interest therefore, is limited. When resources run dry… will they not move on?

The survey of 200 households reveals that the average number of years spent in Sangam Vihar for household heads was 14 years in the year 2001. This figure more or less corresponds with a minor survey conducted by us in which we visited 25 households. Not only are the heads of these households firmly entrenched in the colony but so are their children, many of whom are now working in the city. To answer the question posed above one needs to delve further into peoples' motives to relocate to Sangam Vihar in the first place. Low housing and property prices and rentals may have been identified as the main pull factor but there are many more factors at play. In conversations with residents we have found that city life provides them with more choices, alternatives, options when it comes to livelihood, education and in life in general. Therefore the motivation to stay put is often more than just a monetary one.

8. Conclusion

On the basis of two months spent by us researching the conclusion we reached is that even if the government decided to intervene in the provision of these services it would be a gargantuan task and an ill advised step. The only reason the residents have access to water is because private players exist and we have not come across any cases of severely restrictive monopolies. The rates charged for the services are roughly the same and in some cases actually suggest the existence of discriminating monopolies where the poor are given a rebate. As far as electricity goes, the provision of power for Sangam Vihar is undoubtedly a boon, which was facilitated by contractual agreements with private contractors.

At the very outset of this paper we attempted to ask two questions. The first as to whether the failure of the administrative set-up and subsequent entry of private players improved the state of governance or has it in fact, led to its decline? In the absence of private players Sangam Vihar would have no access to water and electricity and thus their contribution in extending these amenities to residents is creditable. The existing mechanisms though imperfect are a testament to the ingenuity of entrepreneurs and must be lauded for provision of services, which are traditionally beyond the scope of private entrepreneurs.

Could the market mechanism represent an efficient replacement to public provision or is government intervention, but inevitable? In answer to this question we would contend that the solution to the problems of Sangam Vihar lies in intervention by private players regulated by bodies geared toward the task of community management. The proposed model allows for the people to retain a right to their entitlement while the private entrepreneurs act as a mechanism to facilitate this provision.

Once these community management systems are in place it might encourage residents to decrease their degree of dependence on government and administrative bodies to initiate programs of up gradation. The model RWA can be one, which goes on to collect funds from its members for developmental work such as provision of roads, facilities for health and sanitation and schooling. One recommendation for the area is to examine the feasibility of installation of bio-gas power plants to decrease reliance on conventional sources of energy.

Slums and unauthorised colonies are very often considered a burden on the city. Perhaps a step toward community management will ensure that this widely held opinion undergoes a sea change. Sangam Vihar can serve as a suitable model of how to tackle problems of resource

distribution, one that may bring with it lessons for development of urban areas in other parts of the city and the country as a whole.

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