

# **Changing Usage and Access to Common Property Resources (CPRs) in a Peri-urbanContext**

## **Internship Report**

Sumit Vij  
MA (Sustainable Development  
Practice)  
TERI University

March, 2013



## **Internship supported by:**

South Asian Consortium for Inter-Disciplinary Water Resources  
Studies, Hyderabad as part of the IDRC supported project on Water  
Security in peri-urban South Asia

## Introduction

This study aims to examine the changing use and access to common property resources in two peri-urban villages, namely, Budheda and Sadhrana, in the Gurgaon district of Haryana. It focuses on the factors behind the diminishing access to common property land and water resources in these villages and its implications for those who have conventionally depended on them for their sustenance.

In order to capture the process dimensions of the research, specifically the changing dynamics of the common property resources as highlighted above, a qualitative research design was used. The research follows the case study method. Yin (1984) defines the case study research method “*as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident; and in which multiple sources of evidence are used. It is a unique way of observing any natural phenomenon which exists in a set of data*”. The qualitative study is aimed at understanding the behaviour from the perspective of the respondents, and to capture social reality through fieldwork in natural settings.

Although, with limited time for the internship, my research involved many interactions with the people in both the villages, the case-study method allowed me to spend enough time with the respondents. The information was acquired over a period of 32 field visits. During the field work I interviewed 18 people from the two villages and spent approximately 73 hours with the respondents. I have chosen my respondents based on the principle of methodological pragmatism. Johnson and Onwuegbuzie (2004) theorize pragmatism as a research methodology that offers a practical and outcome oriented method of inquiry that is based on the action and the elimination of doubt. They further characterise that pragmatism recognizes the existence and importance of the natural and physical world as well as the emergent social and psychological world that includes language, culture, institutions and subjective thought. It offers a method for selecting methodological mixes that can help researchers better answer many of their research questions.

For example, in my study I gave special emphasis on interviewing elderly persons of the two villages, which helped me understand various past and present changes related to common property resources. Other key informants were interviewed in order to gauge information on crucial aspects of the village profile and transition of CPRs. I have also interacted with the individuals associated with different village institutions and tried to understand their perspective on the changing socio-economic environment and its impact on the common property resources. Key actors like village

elders, Sarpanch (village headman), and one official of the Public Health Engineering Department of Gurgaon were also included as my key informants.

The field work was completed in three phases: the first phase of broad orientation and getting to know the villages and their people; the second phase focused on the aspects of land use like grazing land and water sources in village for irrigation purposes, in order to learn more about their common property access and its changing usage; and the last phase concentrated on data triangulation and filling of information gaps.

### **Findings: Common Property Resources**

The major focus of my research was to inquire about the factors responsible for degradation of common property resources. The field work helped in building my understanding of the various factors behind declined dependence on and changing usage of the Common Property Resources (CPRs). Factors like amplified real estate prices and reduced rainfall have impacted the land use pattern, while social challenges include factors like inflated inflow of cash due to land sales, illegal encroachment of agriculture and Panchayat land, elite domination, and better utility services.

### **Urban Expansion: Bearing the ecological foot-print of the city**

Gurgaon is the largest city in the district and is the sixth largest city in Haryana. It is urbanizing rapidly and the 2011 census showed an increase of the population of Gurgaon district of 73.9% compared to 2001. Gurgaon's population in 2011 stands at 1.5 million against 0.8 million in 2001 and it had showed an increase of 73.9% in a decade (census 2001 & 2011). This increase in population has created a demand for better utility services. The peri-urban settlements are at the receiving end and government institutions are using their resources to meet these demands. Moreover, the industrial conglomerates are attempting to set up large industrial zones to use the cheap skilled labor in the region.

Acquisition of private agriculture land as well as common property grazing lands took place in Budheda for the installation of the water treatment plant (WTP) to provide drinking water for Gurgaon city. A respondent in an interview mentioned that 230 acres of land was acquired in the first phase for the construction of a WTP. There is a plan to acquire an additional 140 acres of land for the expansion of the plant. On the other hand, Reliance, an industrial conglomerate had a plan to procure 25,000 acres of land to set-up a Special Economic Zone (SEZ). They have procured around 1400 acres of land from villages Sadhrana, Budheda, Jhanjrola, Sultanpur, GarhiHarasru, Chandu, Omnagar, & Sadhrana ki Dhani. However, this project is hurdled by the strict norms of the Supreme Court in 2006 for protecting the

Sultanpur National Park.

There is a sharp decline in the livestock as both the grazing and private agriculture land is declining. Most of the green fodder for livestock is procured from the agriculture fields. Rich elite who still own agriculture land can get green fodder and do not share with the small and marginal farmers due to scarce availability. In fact, people from *Chamar* and *Bhangi* (SC) caste do not own agriculture land in both the villages. *Brahmins* and *Yadavs* own major portions of agriculture land in the two villages. The acquisition of land to meet the demand for the urban citizens has affected the livelihood of small and landless farmers of the two villages.

The Significant factors which have influenced the shift of occupation from animal husbandry to other employment opportunities, are as follows:

(a) Maintenance cost of livestock has increased as fodder prices have sharply increased in the last two decades and communities do not find it lucrative to keep livestock. The table below shows the input cost for feeding a single cattle unit. While raising an animal (cattle or buffalo), more than 70 per cent of expenditure is incurred on feed and fodder (NDDDB 2009). The community from higher caste who owns the land can save some proportion of this expenditure, while lower caste communities who do not own land have to pay higher input cost.

**Table 1: Per day expenditure for cattle unit**

<b>Per day expenditure for cattle unit</b>		
<b>Sr. No.</b>	<b>Fodder Inputs</b>	<b>Amount (Rs.)</b>
<b>1</b>	Mustard/ Wheat (green fodder)	40
<b>2</b>	Jaggery (2 Kg)	80
<b>3</b>	Vegetables (carrots, ridge court, & gourd)	30
<b>4</b>	Dry Fodder (6 times/ day)	150
<b>5</b>	Wheat (1 Kg)	30
<b>6</b>	Binola (2 Kg)	100
<b>Total</b>		<b>430</b>

**Source:**Primary data (respondent from Budheda village)

A respondent in Budheda mentioned that this additional input cost on cattle and buffalo feeding is a factor responsible for community shifting from animal husbandry to unskilled jobs in urban centres like Sohna and Gurgaon.

(b) Emergence of buffalo larceny gangs has caused a decline in the livestock population in the village. These gangs are from Mewat. Almost 4-5 buffaloes have been stolen in the past one year. Tau (a respondent from Sadhrana) shared an experience of a villager who had lost a buffalo recently. He has since started sleeping along with the buffaloes in his fields as he is scared that other animals may also get stolen. These gangs either sell productive animals to other farmers and if found unproductive, they are sold to slaughter houses.

(c) The labour to manage livestock has also declined. Earlier joint families had more human resources who could take care of livestock. This has changed with nuclear families and a lack of interest among the youth and children to engage with agriculture and allied activities. The risk involved in agriculture and allied sectors has increased with this social change.

### **Changes in irrigation & Agriculture**

Small and marginal farmers find the cost of installing a tube well to be very high. They have to either buy water from the neighbouring farmer with a tube well facility or have to spend on diesel pumps to fetch water from the waste water canal. A marginal farmer during the interview said "*Uttam Kheti madhyam Baan Adham Chaakri Bheekh Nidhan*" (for livelihood, best profession is farming, trading is mediocre, employment is lowest & begging is wretched) does not hold good anymore due to high cost involved for irrigation and fertilizers.

There has been a change in agriculture pattern in Budheda and Sadhrana. Budheda was very famous for *kharbuja* (Musk Melon) and a lot of marriage proposals used to come to the village due to availability of sweet water and musk melons. Now, due to saline water and depleting water levels the cultivation of musk melon has completely ceased. In Sadhrana, Black gram was grown in the past but due to saline water, it has been discontinued. Farmers have started cultivating Wheat and mustard in the *Rabi* season. Saline water does not have impact on the wheat and mustard crops and thus they have become universal crops. The three major reasons for change in agriculture pattern in the two villages are (a) decline in rainfall since the 1980s (b) drying of open-wells used for agriculture (c) water in the tube well becoming saline due to the decline in ground water table.

There is a strong linkage observed between drying of Johads and wells located in Sadhrana. Technically *Johad* feeds water to the well and also maintains the ground water table in the surrounding area. However, with drying of Johads and with emergence of a large number of tube-wells and submersible pump sets, sweet water open-wells have dried. These sweet water open-wells were used for filling *khed* (common drinking spots for the livestock) and agriculture purposes.

The alternative source of irrigation is the waste water canal which is used for agriculture purposes by small and marginal farmers (as they do not own a tube-well on their agriculture fields). This 8 km canal is maintained by the Irrigation Department; however the water is released by the sewage treatment plant in *Barhampur* and *Dhanwapur* owned and managed by HUDA(Haryana Urban Development Authority). An STP managed by Municipal Corporation of Gurgaon also drains out the treated water in the canal. Both farmers and STP mention that the quality of the water seems to be appropriate for irrigation purposes. The table below shows the water quality parameters.

**Table 2: Water quality data for waste water canal**

Date	Before treatment						After treatment					
	BOD	COD	TSS	VSS	Temp	pH	BOD	COD	TSS	VSS	Temp	pH
01-12-12	278	465	376	205	20	7.01	29	88	47	14	19	7.82
15-12-12	280	490	400	190	21	7.08	28	100	46	17	18	7.84
31-12-12	298	510	390	195	17	7.04	26	84	48	20	19	7.90

**Source:**Data collected from *Dhanwapur* STP

**BOD:** Biological Oxygen demand

**COD:** Chemical Oxygen demand

**TSS:** Total suspended solids

**VSS:** Volatile suspended particle

The parameters mentioned in the above table are compared with the water quality standards provided by the Central Pollution Control Board (CPCB) and irrigation water standards of Bureau of Indian Standards (BIS 1998). These standards are compared to the column stating data on water after treatment.

The limit of pH value for irrigation water is specified by BIS (1998) as 6.5 to 8.5. The value of pH is within the desirable limit. The limit of BOD value for irrigation water is specified (BIS limits 1998) as (30 mg/l). The observations show that the BOD is within the permissible range . The limit of COD value for irrigation water is specified (BIS limits 1998) as (250 mg/l). The

observation shows that the COD is within the permissible range as prescribed by BIS limits (1998). The last parameter on which data could be retrieved was on temperature of the water. The temperature for irrigation water specified under BIS limits (1998) is of 40 degrees Celsius. All the three samples were within desirable limit as prescribed for irrigation water standards.

The farmers have to pay Rs 50/ annum to *Lambardar*(village level officer to supervise the collection of revenue) in the village for one *Kila*<sup>1</sup>of land. This revenue is paid to the Haryana Irrigation department in Delhi. On one of my visits to the canal I could observe that it was dry on one side and on the other water was pumped out using diesel pumps for agriculture fields. Authorities at the Irrigation Department have claimed that the construction work of closed canal at AIIMS site near *Jhajjar* was the reason for controlled release of water in the canal during the current season.



Figure 1: Diesel Pump used for Irrigation

A respondent in Budheda village helped me understand the economics of irrigation from the waste water canal. There is a requirement of six litres of diesel to pump out water for one *Kila* (~ one acre) of land for wheat cultivation. It approximately takes 6-8 hours to irrigate 1 *Kila* of land.

Average expenditure of one time irrigation for 1 *Kila* of land is Rs. 250. Other neighbouring small and marginal landowners, who do not own diesel pumps, have to pay Rs. 250 as a rent. This makes Rs. 500 for irrigating 1 *Kila* of land. The waste water canal has been provided with the provision of water outlets to the water channels.



Figure 2: Water outlet closed

Figure 2 shows the water outlets being unused. Farmers feel that these outlets are not effective due to less water and it takes a longer time to irrigate the fields. Thus, they prefer using the diesel pumps. The cost for using diesel pumps is very high as compared to rainfall. However, this year there was record rainfall during the *kharif* crop season which has reduced the input cost burden for irrigation.

<sup>1</sup>Kila is a unit of land measurement. According of Department of Land Resources in Haryana one Kila is equal to four Biga. Further, four Biga is equal to one acre, thus we can infer that one Kila is equal to one acre in the state of Haryana.

## Land Encroachment and Elite Domination

In Sadhrana, subtle domination from the higher castes has reduced the accessibility of common property resources for the lower caste communities. During *Chakbandi* (Land consolidation) in 1982, the influential *Pundit* and *Yadav communities* scattered and distributed the Panchayat grazing land adjacent to their own or within their private land. Even now, dominant classes use the cloistered Panchayat land for personal agricultural purposes. Moreover, the influential castes during land consolidation also acquired land from the small and marginal landowners by bribing the *Patwari*. In return, *Patwari* has lowered the prices of the neighboring small landowners compared to large landowner's land of *Pundit* and *Yadav* communities. With this effect, when reallocation of land after consolidation took place, the large and influential landowners were compensated according to their higher priced land. This resulted in acquisition of more amount of land as compared to their previous ownership. Currently, the large landholders do not let livestock graze or women to collect fodder from these Panchayat lands as they use these pieces of land for their own agriculture purposes.

One of the respondents in Budheda mentioned, ".....*their parents were aware of this duplicitous act of large landowners but during that time the suppression of higher caste was very prominent in the village and thus they could not even protect their land.*" The respondent further emphasized that many people still practice discrimination based on social identity. Every day during her visits to the hand pump located near the canal, she can observe that women from higher caste wash the hand pump before using it. She needs to face this discrimination every day, as drinking water facility is scarce in Budheda.

Usage of Common property resources like *Johads* has changed over the period. Budheda has a 150-year-old functional *Johad*, used earlier for bathing purposes of the community; however, it is now exclusively used for livestock's drinking and bathing. The Panchayat has extensive rights and it used to take care of *Johad* mostly under NREGA/ MNREGA activities. The major source of water for this *Johad* is from rainfall and Gurgaon water supply channel. In 2010, the *Johad* in Budheda was leased out on a legal contract to a private contractor from *Nuh* (Mewat district) for 7 years (2010-2017) for fishing activities. Communities claim that there was no democratic process followed for the auction of the *Johad*. However, under the contract the maintenance is the contractor's responsibility. The other conditions attached to the use of the *Johad* are : (i) any villager can use the *Johad* without seeking prior of permission from the contractor; (b) the contractor cannot add any medicines as *Johad* is used for drinking and bathing of



livestock and; (c) water recharging and filling of water from the nearby canal is the contractor's responsibility.

The Panchayat without following the democratic process of auction and discussing in the Gram Sabha transferred usage rights to an external party. The other influencing factor was that the Sarpanch was a Pundit (Higher caste) and he used his unrestricted power to decide about the usage of the *Johad*. Moreover, the private contractor makes huge profits from the fishing activities, but has paid a relatively meager amount (Rs. 45,000/ for seven years) to the Panchayat. A respondent mentioned that in a single catch during the season the contractor makes a profit of around Rs. 40,000 from the *Johad*. Subtle mention of the under table relationship between the private contractor and the previous Sarpanch establishes a glimpse of unaccountability. A key respondent explained about a recent auction of 22 trees on the *Johad's* bund. The Panchayat received an amount of Rs 1, 04,000 from this auction. He also explained the process of auction followed by the Panchayat. A single auction for trees realized more cash than the *Johad's* auction to a contractor for fishing. This clear difference in the auction amount raises a question on the functioning of Panchayat in terms of financial transparency during auctions related to common property resources.

### Changing Culture & Gender Roles

Due to depleting grazing and Panchayat land, there is also a steep decline in the availability of fuel wood. The depleting commons are pushing to such an extent that even socio-cultural behavior is affected. Instead of fuel wood, cow/ buffalo dung cakes are now used for cooking, bonfire, and even for funeral rituals among economically weaker sections (especially SC communities). These instances clearly point to linkages between issues of social identity and depletion of common property resources. Due to depletion of grazing land, the work burden on women has increased. Socio-culturally, grazing of livestock has been the domain of men within households. However, with the diminished access to grazing land stall-feeding has emerged as an alternative, which is the responsibility of women. During an interview with a *Tai* (elderly women, respondent), she mentioned that men claim that they do not know how to cut the fodder. *Birbani* (wife) is responsible for green fodder collection from the agriculture fields and preparation of cow dung cakes. Even after fodder is collected, women help men to cut the collected fodder and prepare the



Figure 3: Women collecting fodder

mixture for feeding the livestock.

### **Better Utility Services**

With the advent of household drinking water supply, communities started using tap water to meet the bathing and drinking needs of livestock. Livestock holders used to spend time going together while visiting the *Johad* (for livestock bathing and drinking) and grazing animals. However, with the advent of better water, utility services and decreasing grazing land communities' dependence decreased and the time spent together declined.

Besides, earlier *Johads* were responsible for maintaining the water table in and around village. These earthen water structures in the village used to recharge the ground water table for sufficient water in the wells. There are three *Johads* (*Pachpir, Mansa, and Chamara*) in Sadhrana and they have only single source of water, that is, rainfall. At present, all the three *Johads* in Sadhrana are dry and are approximately 150 years old.

As the name suggests *Chamara Johad* was solely for the SC communities in the village. However, over the period the caste system was diluted, other communities used the *Johads* also.



In Budheda *Johad's* were earlier used for bathing purposes by the village community; however, it is now exclusively used for livestock purposes, mainly drinking and bathing. Moreover, with the advent of tube wells in the agriculture fields and submersibles for individual households, the water table has declined rapidly. Ten wells dried in the past 20 years in Budheda. Even the use of *khed* (drinking water facility for livestock) was discontinued with the drying of open wells.

These changes clearly demonstrate that earlier there was a single source of water usage and dependence of the community on the resource was very high. Communities also felt the need to manage the resource. Conversely, with the advent of better utility services multiple sources have emerged which have played a crucial role in weakening social bonding and reduced dependence on common property. Individual houses have drinking water supply; communities use tap water to meet the bathing and drinking needs of livestock. The common property has been depleting and the solidarity in terms of bonding and time spent together as a community is also affected.

### **Conclusion**

There are several factors shaping the change in usage of common property

resources in Budheda and Sadhrana. There are specific factors which have played a crucial role in reducing the access for small and marginal farmers to common property which are: (a) Urban expansion (b) Illegal encroachment (c) Elite domination (d) Better utility services. In a peri-urban context, the environment is changing fast, with consequences for common property access and acquisition. With an expanding and encroaching Gurgaon's continuing need for resources, Budheda and Sadhrana are bound to feel the effects of urbanization to a larger extent in the coming future. In case of these two villages communities who have assets such as land will be able to get hold of opportunities and cope with threats of urbanization; however the vulnerable poor might face more teething troubles in the future. Coping with new livelihood opportunities and losing access to common property might become a costly affair for these vulnerable communities.

### References

- Yin, R.K., (1984), Case Study Research: Design and Methods. Beverly Hills, California: Sage Publications.
- Johnson, R & Onwuegbuzie, A J (2004). Mixed Methods Research: A Research Paradigm Whose Time Has Come, American Educational Research Association, Vol. 33, No. 7 (Oct., 2004), pp. 14-26, retrieved on 1 March 2013 from <http://www.jstor.org/stable/3700093>
- Central Groundwater Board (2012), Groundwater Yearbook India 2011 - 2012. CGWB, Ministry of Water Resources, Government of India, Faridabad, retrieved on 5 March 2012 from <http://cgwb.gov.in/documents/Ground%20Water%20Year%20Book%20-%202011-12.pdf>
- Verma O. P., Khanan B., & Shukla S., Determination of physico-chemical characteristics of four canals of Allahabad region and its suitability for irrigation, Pelagia Research Library, Advances in Applied Science Research, 2012, 3 (3):1531-1537