Everyday governance of the waste waterscapes
A Foucauldian analysis in Delhi's informal settlements

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To Léon Abhimanyu, with love

- may you grow roots of happiness in this city of yours -

S<small>UMMARY</small>

Waste water governance presents a major challenge of urban governance in India's cities and megacities. High rainfall variability, partial sewer networks, and waste water discharge through often dilapidated and silted storm water drains lead to impracticalities of daily life, health hazards and environmental pollution. The vast majority of informal settlements are located in the blanks of the sewer map. Exposure to waste water therefore concerns above all inhabitants of informal settlements. As everyday lives get affected, governing the waste waterscape becomes a perpetual process in which bureaucrats, politicians and residents attempt solving problems of drainage, silting of drains, lack of cleanliness and health risks. Moreover, inhabitants of informal settlements do not necessarily conform to the modern vision of educated and prosperous citizens, 'partners in governance'. It can therefore be assumed that reforms focus specifically on these groups, and governance interventions will be more intense here.

To analyse waste water-related challenges in these areas, the notion of the *waste waterscape* is used (based on the concept of the waterscape by Swyngedouw 1999 among others). This notion designates the visible part of the earth's surface which is made up of water, and is conceptualised as a material, constructed and social space. The main research question that is addressed in this thesis is: **"How are the waste waterscapes in Delhi's informal settlements produced?"** Because governance processes have space-producing effects (Benecke et al. 2008: 17), this question is operationalised with the help of the *governance* concept (Kooiman 2003b). Insights on the "everyday state" (Fuller & Bénéï 2001) are applied to formulate a concept of *everyday governance*. To better grasp the effect of power in governance, Foucault's *governmentality* approach is introduced (Foucault 2007; 2010). With its help, practices of waste water governance are placed at the centre of analysis. Everyday waste water governance is then defined as the process of decision-making and interaction on waste water that is the outcome of everybody's governing practices which are oriented along and in turn shape governmentalities. The aim is to contribute to a better and possibly more complex understanding of governance processes in megacities of the Global South.

Research is based on literature review as well as 12 months of empirical research in Delhi. An extensive analysis of policy and legal documents as well as scientific literature has been used to analyse the **waste water-related governmentalities** in Delhi, and those governmentalities which more overarchingly guide the policy approach towards informal settlements. It turns out that waste water governance is addressed through concerns of public health, sanitation, and more

recently, water and water bodies. Especially from within the sanitation debate, waste water is governed through power-laden processes that are predicated on "Othering" groups or individuals (Spivak 1985: 252), labelled as less clean, less ritually pure, or less hygienic. In Delhi, residents of informal settlements are part of these groups, as their waste water-related practices are characterised as highly problematic and in need of change.

Waste water governance in these areas is thereby inscribed in larger processes of controlling informal settlements, constructed discursively as spaces of risk. Yet, while JJ Clusters – squatter settlements – are affected by this stigmatising discourse very strongly, Unauthorised Colonies – residential areas built in violation to the Delhi Master Plan – are seen more recently as spaces of opportunities and are in the process of getting regularised. Waste water governance therefore functions very differently in both types of settlements. To understand these processes in detail, two research areas have been chosen for empirical analysis.

In one JJ Cluster and one Unauthorised Colony qualitative interviews, ethnographic observations and methods of the Participatory Urban Appraisal tool box have allowed investigating **everyday governing practices** in the local waste waterscapes.

In the JJ Cluster, state representatives do not problematise exposure to waste water at all. This is in contrast to residents of lower lying areas. Inhabitants blame waste water stagnation most prominently on scavengers, whereas state representatives hold inhabitants' practices responsible for any possible problem. Residents therefore use complaints and voting to achieve better services; yet, these technologies are not successful for all. State representatives, in turn, convey to residents that they have the responsibility to discipline themselves in order to solve waste water-related problems. They combine technologies of agency and technologies of discipline in governing residents. Inhabitants therefore develop four strategies: some resign, others keep struggling for waste water services, a third group contests especially the knowledge of state representatives, and a fourth group decides to leave the cluster.

In the Unauthorised Colony, too, exposure to waste water is absent from state representatives accounts although most residents are confronted to it. Because a majority of streets has experienced recent infrastructural upgrading, and a higher number of sanitary staff has been allocated to the ward recently, this informal settlement is perceived by many inhabitants as a space where entitlements are not yet realised, but worth struggling for. Through delimitation processes, the municipal ward has opened up as an arena of waste water governance, and attempts at regularising Unauthorised Colonies further engages residents who are encouraged to form Resident Welfare Associations (RWAs). But not all can participate in these new

governance processes: The area has become an "unequal space of governance" (Harriss 2007: 2719). Therefore, three strategies can be identified: While some resign, others struggle for waste water services with the help of votes and complaints. A third group, finally, organises in RWAs, seeks to be recognised by the state as partners in governance, but also filed a legal case to obtain more sanitary staff. State representatives, meanwhile, request citizens' cooperation in the face of structural constraints and combine technologies of agency with technologies of citizenship.

The discussion allows comparing these results extensively while reflecting on the benefits of introducing the concept of everyday governance and of focussing on practices for the understanding of governance in megacities more generally. Differences on the side of residents appear to exist especially at the level of the role of the local elite and the relationship to the political representatives. On the side of state representatives, waste water turns out to be governed through a focus on solid waste and notions of cleanliness/dirtiness. In both settlements, processes of Othering show in state representatives' governing practices. Yet, regimes of practices differ. While JJ residents are perceived as fundamentally 'different', and are not invited to participate in governance processes, inhabitants of Unauthorised Colonies are seen as potential partners in governance that still need to learn more about their role. This shows that inclusion of residents in governance processes by local state representatives is not without pre-conditions.

When comparing practices of all actors with the waste water governmentalities that play out in informal settlements, it turns out that at all levels of state representatives, waste water is rather invisible. This points to the fact that inhabitants' capacity to participate in framing problems of urban governance is very low. The critical ways of seeing 'slums' at the administrative and political headquarters translate on the ground, as do educational programmes which aim at inducing 'behaviour change' in residents. Residents resist these discourses through accounts of inequality in the state's approach towards citizens.

Major differences exist at the level of the object of government recognised by state representatives in the wards, and official policies. Residents, again, problematise waste water based on their experiences. These gaps in perception illustrates how important it is to incorporate the "situated knowledge" (Loftus 2007: 56) of low ranking bureaucrats and residents into policy debates (Karpouzoglou & Zimmer 2012). Moreover, practices by street-level bureaucrats and politicians are informed by a plurality of rules, which affects implementation of

policies. Implementation, however, is also a result of powerful negotiation processes between ground staff and residents.

This analysis of waste water governance in Delhi's informal settlements finally allows insights into the production of space. At the level of the social space, the analysis shows that social positions in the waste waterscape are not fixed. Yet, because discourses can be very stable, residents of informal settlements, and especially JJC inhabitants, face strong pressure to subject themselves to the position of the governed. Ongoing exposure of residents and the lower ranking administrative staff, the scavengers, to waste water is moreover to be read as an assignment of a low social position within the social space of the city.

At the level of the constructed space, the waste waterscape turns out to be conceived of as something inherently 'dirty' (Douglas 1988). From the point of view of state representatives on the ground, this 'dirtiness' is discursively tied to problematic conducts of residents. For residents, waste water stagnation is associated with the neglect and disrespect of the state for the poor and uneducated. In policies, however, the waste waterscape is constructed as a model city with 100% access to the sewer network. Areas of waste water stagnation simply do not exist except as a temporal situation to be resolved through more funds, and more engineering works in the future.

At the level of the material space, infrastructure provision, the kind of waste water which is discharged, and the movement or stagnation of waste water are products of governance. Negotiations are difficult; moreover, residents' practices of building infrastructure are dismissed by state representatives as problematic or even illegal. Results point to processes that powerfully delegitimise inhabitants' production of material space. Situations within settlements are highly unequal. Drainage especially depends on day-to-day struggles. In the absence of satisfying outcomes, time inhabitants are able or willing to invest in cleaning drains by themselves are essential to secure drainage. This leads to exposure to waste water and direct contact with waste water further reinforces residents' low social position. To avoid both, residents' struggles in the waste waterscape carry on.

The conclusion summarises the main findings of the thesis and suggests further fields of enquiry.

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This thesis, although written by me, is not only my product: It is, very much like the waste waterscapes discussed in it, co-produced by many.

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TABLE OF CONTENTS

LIST OF MAPS

LIST OF FIGURES

LIST OF TABLES

LIST OF PHOTOS

LIST OF ABBREVIATIONS

ASI	Assistant Sanitary Inspector
BJP	Bharatiya Janata Party
BRICS	Brasil, Russia, India, China, South Africa Group
CBO	Community Based Organisation
CIA	Central Intelligence Agency
CPCB	Central Pollution Control Board
CSE	Centre for Science and Environment
CSH	Centre de Sciences Humaines
DDA	Delhi Development Authority
DEMS	Department of Environment Management Services
DJB	Delhi Jal Board
DUSIB	Delhi Urban Shelter Improvement Board
GNCTD	Government of National Capital Territory of Delhi
GoI	Government of India
GTZ	Gesellschaft für Technische Zusammenarbeit
IDS	Institute of Development Studies
IIT	Indian Institute of Technology
ITO	Indian Tax Office
JE	Junior Engineer
JJ	Jhuggi-jhompri → see JJC
JJC	*Jhuggi-jhompri* Cluster; designation for squatter settlements
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
MC	Municipal Councillor
MCD	Municipal Corporation of Delhi
MLA	Member of Legislative Assembly
MP	Member of Parliament
NDMC	New Delhi Municipal Council
NGO	Non-Governmental Organisation
NIUA	National Institute of Urban Affairs
NSSO	National Sample Survey Organisation

NUSP	National Urban Sanitation Policy
OBC	Other Backward Castes
PRA	Participatory Rural Appraisal
PUA	Participatory Urban Appraisal
PWD	Public Works Department
Rs	Rupees
RSS	Rashtriya Swayamsevak Sangh
RTI	Right To Information (Act)
RWA	Residents Welfare Association
TERI	The Energy Resources Institute
UAC	Unauthorised Colony
UN	United Nations
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UN ECOSOC	United Nations Economic and Social Council
UNICEF	United Nations Childrens' Fund
UNU-INWEH	United Nations University-Institute for Water, Environment and Health
UP	Uttar Pradesh
USA	United States of America
US EPA	United States Environmental Protection Agency
WASH	Water, Sanitation and Hygiene
WHO	World Health Organisation
WSSCC	Water Supply and Sanitation Collaborative Council
YAP	Yamuna Action Plan

GLOSSARY: LIST OF HINDI AND URDU TERMS

aam admi	common man/men
bare log	lit. big people
bhai chara	brotherhood
bhaia	elder brother
burqa	full body veil
challaan	fine (money)
crore	10 million
dalao	solid waste collection point
dalit	lit. broken; self designation of former 'untouchable' groups
daroga	chief officer, often of the police; here Sanitary Guide
dupatta	broad scarf
gaj	yard
gali	street
ghar	home/house
gram sabha	village assembly; gram sabha land refers to the commons of a village
jhuggi	hut
jhompri	hut
kaccha	lit. raw or unripe; also for used for all materials which are not solid
khoti/khotiyan	house(s) of several storeys
lakh	100,000
lehenga	traditional female dress consisting of a long skirt
mahaul	social environment
mazboori	powerlessness, compulsion
naali	small storm water drain
naani	maternal grandmother
namaaz	prayer
pakka	lit. boiled or ripe; also used for all solid materials
panchayat	council of elders, here elders of a caste (also elected council in

	rural areas)
pradhan	informal leader
purdah	lit. curtain; style of life where women avoid showing themselves, and particularly their hair and faces to outsiders
saree	traditional female dress made of one long piece of fabric
salwar kameez	traditional female dress consisting of loose trousers and a knee-long shirt
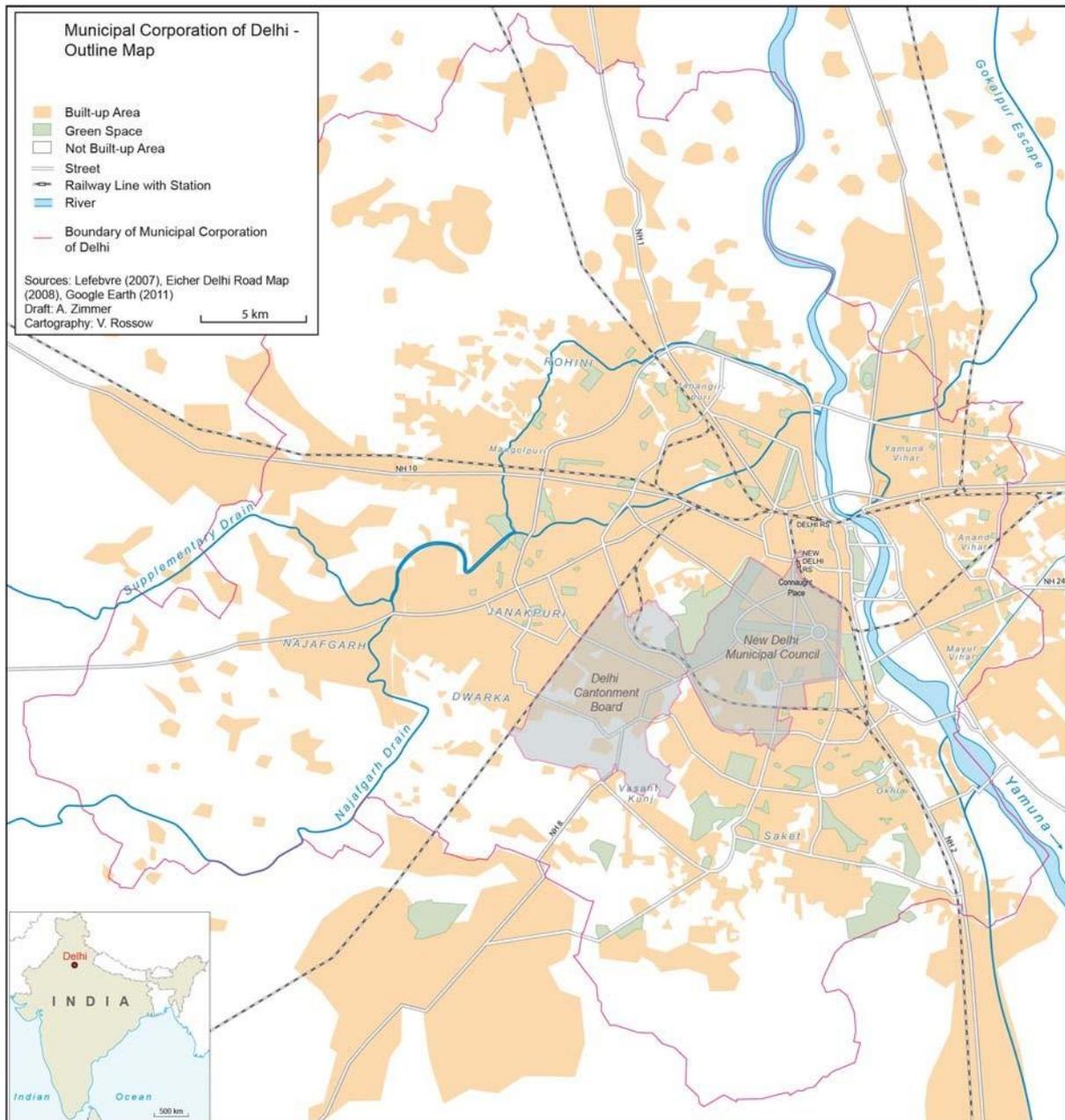
Map 1: Delhi and its three municipalities: The Municipal Corporation of Delhi, New Delhi Municipal Council and Delhi Cantonment Board.[1]

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[1] At the time of publishing this thesis, the Municipal Corporation of Delhi has been divided into three smaller Municipalities of South, North and East Delhi. For obvious reasons, the following analysis does not reflect any possible changes undertaken after this reform.

I INTRODUCTION

In the night before September 12, 2010, it rained. It rained around 2 a.m., and it rained again at 5 a.m. At 8 a.m. it had not stopped yet. In Delhi, people got up, went to the bathroom, relieved themselves, and took a bath. Women went to their kitchens, made tea, and started preparing breakfast. They cleaned the vessels. The waste water left houses and huts, and joined the underground sewer lines in better areas; in poorer settlements it joined the open storm water drains. And it continued raining. The heaviest monsoon since 1978 had brought the Yamuna river that crosses the city from North to South above the danger mark. Those living on its banks had been shifted to temporary shelters. 867 mm of rain had fallen already since the onset of the rainy season, and another 26 mm were added on that day. The drainage system was severely over capacity; drains started overflowing. In North Delhi, residents had to stay in their houses. In the Tibetan colony, the market was flooded. At the old bus terminal vehicles could be seen standing more than a meter deep in water. In my South Delhi home, however, no effect was visible.

On that day, I visited the Unauthorised Colony which I had chosen as one my research areas after a gap of eight month. Unlike on other days, I rented a taxi for the 30 km trip. "Don't come on your scooter today", one of the residents had told me on the phone. "The situation here is pretty bad." Crossing the river, we had an impressive view on the floodplain. Along the banks, tents had been erected for those whose dwellings were already under water. As we approached the area of my interest, we got stuck in a traffic jam. The left lane was under water, and vehicles trailed slowly in the right lane. In front of us, a mini bus slowed down dangerously, tilting to the left. We slowed down too much and got stuck. Helpful hands offered to push us – for a 'little reward' of 100 Rs. From below, water entered the car, bags and shoes got wet. I paid the 100 Rs, I had no other choice. At the next red light, we gave up. The car pulled by and I got down. Trousers rolled up to the knee, thankfully equipped with plastic sandals, I crossed the road by the pedestrian bridge. At the road side, an employee of the Municipal Corporation of Delhi was busy pumping water from the road into the internal drains, hoping to end the traffic jam. "The drain is totally filled", he pointed out the gutter which was regurgitating water onto the road. With his small petrol fuelled pump – and under the continuous rain – his task seemed to be a Sysiphean struggle.

I finally entered the area of informal settlements. At first, it seemed doable: water was ankle deep in the central street; lanes to both sides were dry. I advanced quickly. Crossing the bridge

over the main open drain, however, the situation got more serious. The water was deeper now. Cycle rikshaws crawled their way through; every now and then a car drove by. I walked on the elevated pedestrian sidewalk. Here and there bricks had been put on the ground to avoid stepping in the water. But the water got deeper still, and I realised too late that I was on the wrong side of the street and could not cross any more. Somewhere on my left was the open storm water drain running alongside the street – but where exactly? The waste water was all but transparent. I gave up (see Photo 1).

Photo 1: The point of return. As open storm water drains were hidden under the masses of water, wading through the street between two informal settlements after the rains had become very risky. *(Photo: A. Zimmer, September 12, 2010)*

1 Waste water: A major challenge for urban governance in Delhi

While the monsoon of 2010 was certainly an exception, and maybe an extreme event, a high variability of rainfall is characteristic for the Indian subcontinent. Delhi[2] receives a mean rainfall of 795 mm per year, mainly concentrated in the months of July and August with an average rainfall of 217 and 248 mm respectively[3] (India Meteorological Department no date). Lowest rainfall is recorded in the month of November with a mean precipitation of 6.6 mm. This

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2 I do not use the official terminology of New Delhi, as New Delhi more correctly designates the part of Delhi built by the British between 1911 and 1931.

[3] These are the data from the India Meteorological Department station at Palam.

disparity in storm water quantities poses a significant challenge for the drainage system of the city.

As a result of insufficient drainage, every year during the monsoon, newspapers report flooded areas, overflowing drains, and the inconveniences attached to these. Delhiites are congratulated on their spirit, and mourned for their lamentable leaders. What these reports hardly document is the diversity of experiences that Delhiites have. More affluent groups of residents face difficulties in commuting during the monsoon. But what about the economically weaker sections? Overflowing drains in their residential areas, and subsequent exposure to waste water, are not only more dramatic, as seen in the above account; they are also more frequent, and closer to their homes. Where sewer lines do not exist, drains carry domestic waste water and thus more pollutants, posing greater health risks. And driving through the water in a car is impossible when incomes are hardly enough to buy a bicycle. What is invisible from the press is that exposure to waste water is a highly unequal experience (Singh 2009: 261): an experience which is embedded in social relations of power.

In a neologism based on the word 'landscape', the visible part of the earth's surface which is made up of water has been termed a "waterscape" by Swyngedouw (1997; 1999: 443). Yet, this concept does not refer to the visible, material space alone: It characterises waterscapes as material, constructed as well as social spaces, produced through specific material and non-material practices that are embedded in social, cultural and political relations of power. From the point of view of geography, these spaces have been investigated most importantly for the process of their production. Drawing on works on the waterscape, I make use in this thesis of the concept of a **waste waterscape**.[4] Waste water is defined as "water that has been transformed, mostly polluted, through domestic, commercial and industrial use as well as storm water" (Leser 2001: 13). In the waste waterscape, used water and storm water are located at specific places. Particular actors are exposed to waste water more than others, and decision-making is not equitable. The waste waterscape is therefore conceptualised as a "landscape of power" (Swyngedouw 2004: 29). Waste waterscapes in Delhi are a highly localised phenomenon, as mentioned above (Zimmer 2009). They can therefore be studied here in all their diversity. In order to analyse the different waste waterscapes found in Delhi, the main research question addresses the process of their production: ***How are the waste waterscapes in Delhi produced?***

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[4] Water governance in Indian megacities received immense attention (see e.g. Zérah 2000; Caseley 2003; Coelho 2005; Maria 2006; Connors 2007; Bawa 2011; Raghupathi 2003; Huchon & Tricot 2008; Anand 2009; Selbach 2009). Waste water governance, in contrast has been rather sidelined from the academic discussion so far (with exceptions such as Singh 2009; Chaplin 2011).

I will argue in part II how this production process can be gauged through the concept of governance (Benecke et al. 2008: 17; Swyngedouw 2009: 59). Governance is understood as a process of interaction between mutually dependent actors aimed at solving societal problems, such as waste water disposal (Schimank 2007: 29). The main question of this thesis can thus be reformulated as: ***How are the waste waterscapes in Delhi governed?***

The aim of this thesis is to investigate the production of waste waterscapes through two case studies on two types of informal settlements in Delhi. But why study the production of space specifically in Delhi's informal settlements?

2 The case study: Dynamic transformations in the Indian capital city

India is in a process of rapid socio-economic transformation. Long time seen as synonymous with poverty, hunger and hellish lives that Mother Teresa had come to take care of in the name of Christian charity, the country of almost 1.2 billion inhabitants is estimated to have been the fifth fastest growing economy in the world in 2010 (CIA 2011). Leaders of industrialised countries visit one after the other, and the European Union hopes to conclude negotiations on a free trade agreement with the country in 2012. The country is already part of the 'elite' amongst developing countries, BRICS,[5] and is designated as an 'emerging economy'. Part of the international group G20, India is hopeful to obtain a permanent seat in the UN Security Council in the near future.

In this context, waste water, drainage deficiencies, water-related diseases and solid waste management have come to be newly problematised with emphasis: "Cleaner cities", the Delhi 21 Report states, "attract people and investment" (GoI Ministry of Environment & Forest & GNCTD Planning Department 2001: 49). In order to secure Foreign Direct Investment in the era of globalisation, Indian cities have to improve in terms of waste water governance and related issues. The economic goal thus gives new impetus to questions of waste water governance.

In the Indian capital city these developments are especially prominent. As the capital, Delhi is under pressure to show the new attractiveness of India, and the ability of its government. Yet, the sewer system reaches only 55-70% of the population (ibid.: 43; NIUA 2005b: 115). In the rest of the agglomeration, storm water drains are used to dispose of household waste water, leading to exposure and associated health risks (see this part, section 1). As a result, at least 1,789 million litres out of the estimated 3,049 million litres of domestic waste water which the city

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[5] Brasil, Russia, India, and China were referred to as BRIC in 2001 (O'Neill 2001: 3), South Africa officially joined the group of fast growing economies in 2011 (South African Government Information 2011).

produces every day are discharged into the Yamuna untreated[6] (CPCB 2004: 1-2). This, in the eyes of policy makers, has to change. The urban transformation is therefore in full swing. The goal for Delhi is to become a "world-class city" by 2021 (DDA 2006: i). This vision is specified as "A Well-managed, Clean & Dynamic City serving its Citizens, the Nation and the World", or, more openly oriented towards economic interests, "an internationally competitive and productive city" (GoI Ministry of Environment & Forest & GNCTD Planning Department 2001: 4; ibid. 5). Modelled on the Millennium Development Goals, Delhi has formulated Delhi Development Goals in order to make the city "worthy of being the nation's capital" (GNCTD 2006b: 1). Waste water, more specifically, is to be governed in order to achieve access to drainage and sanitation for all, reduce environmental and health impacts, achieve bathing water quality in the river Yamuna, and protect the city from flooding (GoI Ministry of Environment & Forest & GNCTD Planning Department 2001: 43). In order to achieve these goals, civil society organisations have received the status of "partners in development" in the 10th Five-Year-Plan (GoI Planning Commission 2002).

Moreover, as the capital city, Delhi is supposed to be a model for town planning. Therefore, and unlike in other Indian cities, the public sector exerts tight control over the land market (Milbert 2008: 192). Delhi has been governed with the help of a Master Plan from as early as 1957 onwards (Legg 2006). From a point of view of urban planning and governance, various voices agree that the city's development – with all its perceived shortcomings – is an expression of government and not of a lack of political will (Vidal et al. 2000: 17; Milbert 2008). These observations contrast with studies on waste water. Here, "lack of political will" is commonly used to explain the failure of sewerage systems to reach the whole city (McGranahan et al 2001: 5; Jenkins & Sugden 2006: 7; Sijbesma & Van Dijk 2006: 13; Black & Fawcett 2008: 53). These diverging interpretations are stimulating, and make studying the waste waterscapes of India's capital an especially promising case.

2.1 Recent reforms in municipal governance

The status of capital influences the governance set-up of Delhi in important ways. India is a federal republic which is made up of 28 States and seven Union Territories. The National Capital Territory of Delhi is such a Union Territory under direct administration of the National Government, also referred to as the Centre. The National Capital Territory has been granted an

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[6] Estimates of the Center for Science and Environment (2007) are of 3,000 million litres/day that are discharged untreated. Untreated waste water stems from open drains, but also from sewers, because treatment capacities are too low, and the installed capacity cannot be used fully due to technical problems (GNCTD 2006b: 47; UNDP 2006: 114; CSE 2007: 101).

elected Government (GNCTD) headed by a Chief Minister as its political body in 1992 (GoI 1991), and Delhi elects 70 Members of a Legislative Assembly. For this reason, the National Capital Territory of Delhi is also perceived to be a State, and is referred to as such in the remainder of this thesis. Nevertheless, the National Government has a significant say over the city until today, as the President nominates the Lieutenant Governor (the administrative head) (GoI 1956a, S. 17(b)). The Centre also controls the powerful Delhi Development Authority, responsible for elaborating the Delhi Master Plan and planning and executing public housing projects (GoI 1957a, Art. 3.1). The National Capital Territory of Delhi is divided into nine administrative districts. Finally, three Municipalities cover the area of Delhi: Delhi Cantonment being the smallest, military part; New Delhi Municipal Council governing the British built part, or "Lutyen's Delhi"; and the Municipal Corporation of Delhi (MCD) responsible for the vast majority of the territory (see Map 1). It is the MCD which is of interest in the context of this thesis. Its territory is divided into twelve administrative zones and 272 wards headed by elected Municipal Councillors. Fig. 1 demonstrates the different governance levels that are of importance in Delhi.

Fig. 1: The political and administrative organisation of Delhi. (Draft: A. Zimmer)

The MCD grew in importance in 1992, when urban local bodies were redefined as the third tier of government through the 74th Constitutional Amendment. This amendment provided for decentralisation and participation in terms of empowerment of municipalities and the creation of ward committees. Quotas for women, Scheduled Castes and Tribes[7] were introduced to enhance the participation of these groups in municipal decision-making (GoI 1992). However, authors agree that reforms have at best been partly successful: State governments still retain control over the municipalities to a large degree (Ghosh & Tawa Lama-Rewal 2005: 62-64). Urban local bodies continue to rely on State and central governments financially (Ghosh et al. 2009: 31: 31). In the case of Delhi, ward committees consist exclusively of elected Municipal

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[7] Scheduled Castes and Scheduled Tribes are historically deprived Castes and Tribes (GoI 1950a; b). Reservations are a means of positive discrimination aiming at increasing the share of their members in decision-making and government posts.

Councillors, and do not include members of civil society (Sivaramakrishnan 2006: 11). Ward committees in the capital moreover represent zones instead of wards, leading to an average of more than one million inhabitants per committee (Mathur et al. 2006: 27). De Wit et al. (2008: 66) emphasise that despite the "promise of improved local governance and better service delivery for millions or urbanites, both rich and poor", ward committees have been disappointing so far. For Delhi especially, Ghosh and Tawa Lama-Rewal (2005: 65) conclude that the effect of the Constitutional Amendment has been "minimal".

Despite municipal empowerment, control over the Municipal Corporation of Delhi is a recurrent theme in Delhi's politics in the last years, with the GNCTD claiming more powers (GoI Ministry of Environment & Forest & GNCTD Planning Department 2001: 11). After several powers were delegated from the Centre to the State in 2009, recent attempts at restructuring the Municipality are focused on breaking it down into three "workable units" (The Times of India 2011a).[8] The debate, centred on notions of efficiency, is fuelled further by party-political tensions between the two bodies: While the State is governed by the Congress Party since 1998, the MCD shifted from Bharatiya Janata Party (BJP) to Congress in 2002, and back to BJP in 2007 (GNCTD 1997; 2002; 2007).

2.2 Waste water governance in an urban 'mosaic'

Delhi, home to an estimated 16.7 million inhabitants (GoI Ministry of Home Affairs 2011), straddles the river Yamuna, with earlier city centres on the Western bank, and newer urban residential areas on the Eastern bank. The city has a history of settlement reaching as far back as 3000 years, and several ruins of past city foundations scatter the urban map today (Jain 1990; Dupont 2004: 158).[9] Colonial times have created New Delhi with its wide alleys, bungalows and roundabouts. Dynamics of the independent capital include large shifts in population, with in- and outflow of several hundred thousands at the time of partition in 1947 (Rao & Desai 1965 in Dupont 2004: 160). Decadal growth rates have been around 50% for much of the second half of the 20th century (Nath 2007: 239). Finally, repeated efforts of relocating illegalised populations in resettlement colonies at the periphery of the agglomeration during the Emergency,[10] or simply evicting them from the centre without alternatives, as increasingly the case in the new

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[8] This plan has been executed in the end of 2011, after finalising this thesis; elections to the three separate Municipal Corporations (South, North and East Delhi) have taken place in April 2012.

[9] Delhi has been the capital of various dynasties, including the Tomar Rajputh, Tughlak, Saiyad, Lodi, and the Mughals; it was then the capital of the British colonial regime since 1911 (Jain 1990: 39ff), and finally of independent India since 1947.

[10] The state of emergency in India lasted from 1975 to 1977, under the rule of Prime Minister Indira Gandhi (Kulke & Rothermund 2010: 405-406).

Millenium (Tarlo 2001; Dupont 2008; Bhan 2009; Ghertner 2010b; Jervis Read 2010) have reshaped the demography of the capital city.

This vertical diversity in time is matched, if not surpassed, by Delhi's horizontal diversity: The human trajectories drawn in this space, and producing this space, are highly disparate (Dupont et al. 2000; Chaturvedi 2010) and have created a "mosaic" (Dupont 2004: 158) of residential areas with extremely different standards of living and public service provision, population density, and socio-economic composition (GNCTD 2006b: 44-56). While planned colonies house around 38% the city's population, 62% live in informal settlements of some sort, understood as "i) residential areas where a group of housing units has been constructed on land to which the occupants have no legal claim, or which they occupy illegally; ii) unplanned settlements and areas where housing is not in compliance with current planning and building regulations (unauthorized housing)" (UN Department for Economic and Social Information and Policy Analysis 1997: 43; Kiwala 2004 in UN Habitat 2006: 4).[11]

The vast majority of informal settlements are located in the blanks of the sewer map. It is here that exposure to waste water is most severe, and inconveniences are most frequent. As everyday lives get affected, governing the waste waterscape becomes a perpetual process in which bureaucrats, politicians and residents attempt solving problems of drainage, silting of drains, lack of cleanliness and health risks. Contestations take place over unsatisfying outcomes. Moreover, inhabitants of informal settlements do not necessarily conform to the modern vision of educated and prosperous citizens, 'partners in governance' who increase international attractiveness of the capital. It can therefore be assumed that reforms focus specifically on these groups, and governance interventions will be more intense here. Delhi's informal settlements are therefore the areas of choice to study how waste water governance functions.

Two types of informal settlements, so-called *jhuggi-jhompri* **Clusters** (JJ Clusters) or squatter settlements (corresponding to point i) of the above definition), and **Unauthorised Colonies**, settlements which are built on non-residential land (corresponding to point ii) of the above definition), are in the focus of this study. Current estimates give the numbers of their inhabitants as 2.1 million (Dupont 2008: 83) and 8.2 million (GNCTD Department of Urban Development 2011c) respectively. Together, they thus constitute around 62% of the population. While there

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[11] In part V, I will discuss in detail the relationship between informal settlements and the notion of 'slum'. Because this notion has been framed within a depreciative discourse on housing of the urban poor (Gilbert 2007), I refrain from using it in the following, and have opted for the designation of informal housing despite criticisms that the formal/informal dualism does not reflect reality (Etzold et al. 2009: 4-5). The extremely high number of residents of informal settlements will also be discussed in detail in part V.

are plans to legalise the Unauthorized Colonies and to connect them to the sewerage system (CSE 2007: 96; The Gazette of India 2008), the vast number of JJ Clusters are threatened by eviction, and thus remain un-served, with no plans to change the situation. This differential treatment of informal settlements is intriguing. Therefore, it is the aim of this thesis to compare how governance of the waste waterscapes in these two types of settlements works.

3 Conceptual approach

The concept of governance, although helpful to frame the negotiation processes around waste water disposal, presents two main challenges for empirical research into the production of waste waterscapes.

First, a majority of governance literature adopts a "managerial perspective" (Hoff 2003: 41), unable to cope with the messiness of political processes in cities. To overcome this, I advance in this thesis the concept of **everyday governance**. This concept rests on an understanding of the state which is far from an apparatus made up of stringently planned policies and their impersonal implementation. Instead, literature on the "everyday state" (Fuller & Bénéï 2001) has shown that the state has a vibrant everyday life of its own, is made up of various actors which have their own agendas, individual practices of governing and diverse interactions with citizens. I argue that a concept of everyday governance therefore helps to address the "immense lack of knowledge of how things really work in a city" (Hust 2005: 12).

Second, governance literature fails to theorise power relations in-depth. To answer this challenge, I use the theoretical insights of Michel Foucault on *governmentality* (Foucault 2007; 2010). This concept allows both: going deeper than as well as going beyond governance. Foucault's understanding of governing exhibits four dimensions, namely ways of seeing, ways of knowing, ways of forming subjectivities, and using technologies of government which assemble in different types of regimes of practices (Dean 2010: 40-44). With the help of these dimensions and regimes, day-to-day practices of governing waste water are analysed in depth. Foucault's works elaborate on the rationality of government (the governmentality) as an overarching 'truth' which makes certain ways of governing acceptable and therefore doable. With the help of this concept, waste water governance is analysed in its historical and discursive context. On the canvas of this theoretical framework, the following research questions have been chosen to operationalise the main research question and guide the analysis of this thesis:

Main research question: *How are the waste waterscapes in Delhi governed?*

Subordinate research questions:

A) What are the waste water governmentalities currently at work in Delhi?

B) What are the practices of everyday waste water governance found in informal settlements?

C) What are the commonalities and differences in everyday practices of waste water governance in JJ Clusters and Unauthorised Colonies?

D) What is the relationship between governmentalities and everyday governing practices in informal settlements?

Through its focus on waste water, the thesis aims at producing insights that allow furthering the understanding of governance in the context of megacities more generally.

4. Structure of the thesis

The thesis is organised into nine parts. Part I is this introduction. In part II, the theoretical framework of the study will be laid out. I introduce here the concept of the waste waterscape and argue that waste waterscapes are produced through governance. Governance is discussed in three different discursive contexts. The concept is widened by insights from the literature on the everyday state to formulate a concept of everyday governance, mentioned above. Finally, the governmentality approach of Michel Foucault is introduced to address power relations in the governance of waste waterscapes. The chapter ends with a framework for the analysis of the waste waterscapes in Delhi's informal settlements and the research questions of this study.

Part III presents the methodological approach followed during research, and discusses the methods used for fieldwork. It also reflects on empirical research.

Part IV introduces the topic of waste water into the analysis. It aims at presenting the governmentality – the way waste water became an object of government over time, the way waste water is addressed in public debates – that underlies governing interventions in Delhi. To do so, this part presents a short historical review of debates in Europe and in British India. It then turns towards current ways of seeing waste water internationally as well as in Delhi. Following this, data on waste water and causes that are put forward by different actors to explain these will be presented. The last section deals with current policy interventions into the waste waterscape especially of informal settlements.

Part V turns to Delhi's informal settlements. This part introduces *jhuggi-jhompri* Clusters and Unauthorised Colonies as those two types of informal settlements investigated in this thesis. Following this, the chapter presents the way informal settlements are discussed by Delhi's policy-makers, and the interventions aimed at governing these areas. For both types of

settlements, public debates and current policy interventions are presented separately, as there are major differences in the way they are addressed.

Part VI and VII then present the results of the empirical research. Both chapters show how the environment of the respective settlement has been co-produced by inhabitants as well as public authorities. To better understand internal heterogeneity, the social structure and forms of organisation of the areas is presented. Then, the four dimensions of governing practices, ways of seeing waste water, ways of knowing waste water, ways of forming subjectivities in the waste waterscapes, and technologies of government, will be analysed for residents as well as state representatives. Preliminary conclusions are drawn to understand what kind of regimes of practices are at work.

Part VIII discusses the results of the thesis. It revisits two major questions: First, what are the conclusions that can be drawn for understanding waste water governance when comparing the *jhuggi-jhompri* Cluster and the Unauthorised Colony? Second, what is to be learned from a comparison of the governmentality presented in parts IV and V with the empirical data on governing practices in parts VI and VII? The answers to these questions refer back to the main research question: How are waste waterscapes in Delhi's informal settlements produced?

Part IX, finally, is the conclusion which allows summarising the main results as well as revisiting the theoretical approach of this thesis.

FOCUS OF THE STUDY:
Waste water governance in a megacity of the Global South

OBJECT OF THE STUDY:
Informal settlements in Delhi, India, which are not connected to the sewer network

AIM OF THE STUDY:
An analysis of the production of waste waterscapes in Delhi's informal settlements

THEORETICAL FOUNDATION:

- waterscapes (Swyngedouw 1997; Baviskar 2007)
- governance (Schimank 2007; Kooiman 2003b)
- everyday state (Fuller & Bénéi 2001)
- governmentality (Foucault 2007; 2010)

CENTRAL RESEARCH QUESTIONS:

How are the waste waterscapes produced? How are the waste waterscapes governed?
- What are the waste water governmentalities currently at work in Delhi?
- What are the practices of everyday waste water governance found in informal settlements?
- What are the commonalities and differences in everyday practices of waste water governance in JJ Clusters and Unauthorised Colonies?
- What is the relationship between the governmentalities and everyday governing practices in informal settlements?

METHODOLOGY:

Qualitative interviews at municipal, State and national level

Two case studies

Unauthorised Colony

- Mapping
- Qualitative Interviews
- Ethnography
- Participative Urban Appraisal

Jhuggi-jhompri Cluster

Fig. 2: The research approach of the thesis. (Draft: A. Zimmer)

II GOVERNMENTALITY AND EVERYDAY GOVERNING PRACTICES IN THE WASTE WATERSCAPES: THEORETICAL CONSIDERATIONS FOR THE ANALYSIS

In the introduction, my monsoon adventure was cancelled before reaching my research area due to heavy flooding. The monsoon 2009, in contrast, had been very weak. While large parts of Delhi did not see any overflowing drain, both areas I had chosen to work in were still affected. Inconveniences related to stagnating waste water added to ongoing road construction works in the Unauthorised Colony. One day, on the way from the main road to this research area, my assistant and I got lost while driving on my scooter. Trying to avoid the traffic jam beyond the bridge over the same main drain behind which I would have to turn around in 2010, we turned left. Soon we realised that decision had been a mistake. The road was under construction, and adjacent streets were about 30 cm higher so that we could not turn anywhere. It had rained in the last days, albeit not heavily. Yet, the open drains left and right along the road were already overflowing. At the crossings, waste water stagnated in puddles whose depth we could not estimate until a brave cyclist before us decided to attempt crossing them. On one corner, we got down, and pushed the scooter through. At the next, my assistant got down, and I drove through, hoping my scooter would make it up that steep heap of construction material on the other side. Eventually, we reached the area we wanted to go to, but from the wrong end. Before us lay the open ground of the Unauthorised Colony, that wild dumping ground that regularly collects the waste water of six streets from the centre of the colony. Now, in the rainy season, it had transformed into a swampy area, where bricks and debris had been laid here and there to allow pedestrians to cross it. Children slipped. Their school uniforms got spoilt. Men, on their way to the Mosque, tried to protect their white clothes from the mud. Whoever had heavy loads to carry chose to give in and walk through the water instead of risking a tilting brick. We stood there, the scooter stuck in mud, and for some seconds all eyes where on us. What would these strange women on their scooter do? Maybe there was a little malicious joy: finally, these researchers saw what normality was like over here. Eventually, a man came over and helped us push the scooter through the puddle. That day, we started the work being already exhausted from the way.

1 Waterscapes

This account first of all describes the visible environment: water stagnating, missing sewer lines, waste water collected in open drains and outside of them, slippery streets. In a neologism based

on the word landscape, this visible part of the earth's surface which is made up of water has been termed a "waterscape" (Swyngedouw 1999).

Yet, similarly to the term landscape in geography, this concept carries much more than just the designation of visible elements. The above account also conveys feelings of insecurity and exasperation; it tells about different ideas of normality and the interference of waste water with religious duties. But most importantly, it raises questions: Why is it looking so differently here from other areas in the city? Who is producing this waste water? Who builds the drains? Why are there no sewer lines? How do residents cope with the situation? What is the state doing to improve the situation? The concept of the waterscape allows asking questions like these within a scientific frame of analysis.

1.1 Scientific waterscapes: Perspectives from anthropology and geography

The terminology making use of the concept of scapes is based on Appadurai's (1990) seminal account of global cultural flows.[12] He uses the suffix "-scape" to highlight two main aspects: First, that scapes are fluid and under constant change. Second, that scapes are perspectival constructs that depend on the situatedness of actors to gain their shapes and meanings.

Both aspects have been adopted by research on water, creating the notion waterscape. Scholars have felt that the fluidity which makes water such a special resource can be captured quite well with the help of this concept. Also, the perspectival character of the waterscapes opens them to contestations of meaning and value attributed to certain elements of the waterscape. They are thus considered to be artefacts of cultural (and I would add: social and political) significance (Baviskar 2007: 4).

In geographical research, the notion of waterscapes has been adopted most prominently by Bakker (2003), Budds (2009), Loftus (2007; Loftus & Lumsden 2008) and Swyngedouw (1999; 2004; 2006b). Situated mostly in the broader context of Political Ecology, major work has been done to understand how water is accessed or denied, how it is commodified, regulated and struggled over. The notion of waterscapes is also employed to analyse constructions, meanings and emotions related to water (Sultana 2011).[13] Overlapping with, and partly expanding questions of Political Ecology, geographers use the concept of the waterscape in a context of inquiries into the "production of nature", and subsequently, the "production of space" (Smith

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[12] Appadurai (1990: 296) distinguishes between an ethnoscape, a mediascape, a technoscape, a finanscape and an ideoscape.

[13] This orientation of research is much more prominent in anthropology, see e.g. Mehta 2006.

1990; Lefebvre 1991). Discussing the production of nature, Smith (1990: 33; ibid.: 47) argues that contemporary social relations with nature are based on labour and the production process, and thus on the social relations specific to capitalism. Questions therefore focus on how nature is produced and who controls the production process (ibid.: 63). In analogy, the waterscape is studied with regard to the processes of its production. The waterscape, in this context, is conceptualised as a material, constructed, as well as social space.

At the level of the *material space*, labour and everyday practices of human-water interaction are conceived to be at the heart of the production process: The waterscape is assumed to be produced through an exchange of matter and energy between humans and nature. Yet, through labour, humans engage physical, chemical and biological forces according to their „drives, desires, imaginations" (Swyngedouw 2006a: 24). Nonmaterial elements, such as ideological and cultural practices or discursive constructions therefore enter the interaction, too, spelling out the *constructed space* of the waterscape (Swyngedouw 2004: 22; ibid. 47). As a result of material and non-material exchange between humans and water, the physical and constructed spaces of waterscapes are co-produced in daily practices and negotiations (Budds 2009: 419).[14]

But the waterscape is further understood as a *social* space which is characterised by differentiation. Inquiries into the production of this space show that not everybody's imaginations materialise; not all actors' values are respected. Conflicts develop over the shape the waterscape should take. Power comes into play and leads to the waterscape mirroring specific actors' imaginations more than others'. The waterscape therefore is a "politicised environment" (Bryant & Bailey 1997: 27), in which actors have differential positions. Accordingly, waterscapes may be 'read' in terms of inequalities, conflicts and cooperation between actors (Baviskar 2007: 4), and in terms of power struggles over the interaction that actors entertain with their environment (Bryant & Bailey 1997: 39).

Discussing struggles in the production of waterscapes, Swyngedouw (1999) argues that e.g. notions such as modernity and development are powerful drivers for constantly shaping and reshaping the waterscape in new ways. This makes the waterscape an arena through which broader narratives such as neoliberal ideals of an individualised culture of customers can be promoted (Loftus & Lumsden 2008: 121). Other narratives, in contrast, loose out. Also, physical interactions contribute to the creation of situated knowledge by those who work in the waterscapes as well as water users (Loftus 2007: 56). But not all actors' knowledge finds its way

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[14] In this metabolism, geographical analyses acknowledge the agency of nature, so that the notion of waterscape is used as a synonym for the "hydro-social landscape" (Bakker 2003: 338): it is "socio-nature" (Swyngedouw 1999: 445). Bakker (2003: 337) therefore suggests the investigation of a "hydro-social cycle" (see also Swyngedouw 2009). Ideas on the waterscape are thus closely linked to ideas on hybridity (Latour 1993).

into legal documents or official policies. While scientific forms of knowledge enjoy authority, the knowledge of communities is often neglected in decision-making (Forsyth 2003; Karpouzoglou & Zimmer 2012). The waterscape, therefore, is "not only a physical geography and a material landscape, but also a symbolic and cultural landscape of power" (Swyngedouw 2004: 29). Figure 3 illustrates this 'landscape' and the process of its production.
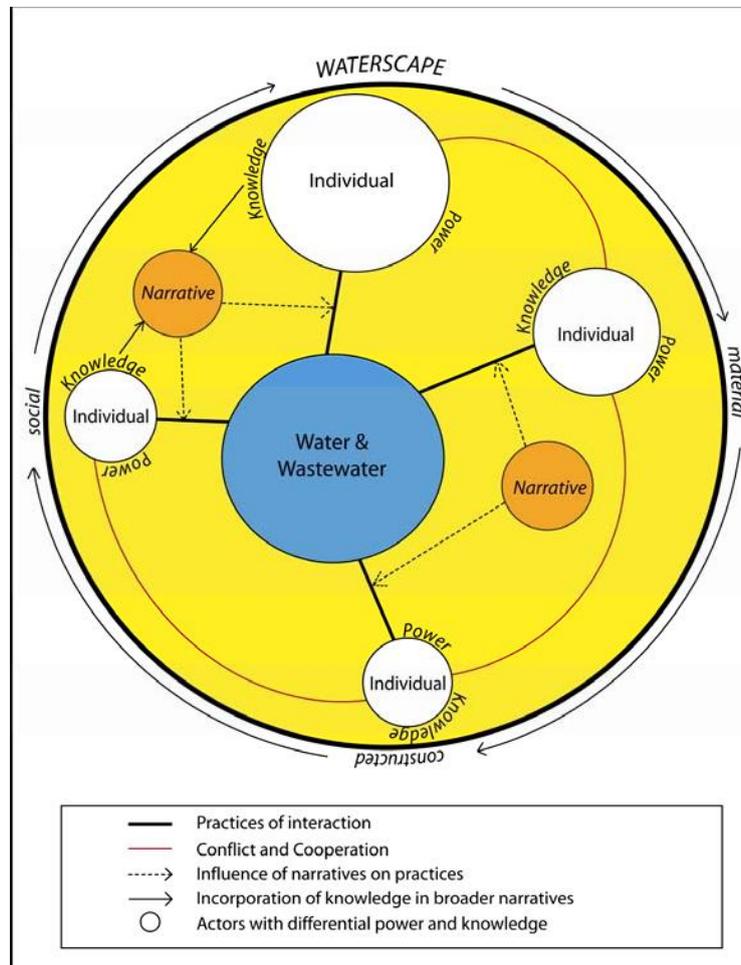
Fig. 3: The waterscape: A landscape of power. (Draft: A. Zimmer)

1.2 Conceptualising Delhi's waste waterscapes

In my research, I have used the concept of waterscapes to work on *waste* waterscapes in Delhi's informal settlements. My first interest when starting field work was: How do the *waste* waterscapes look like? Most importantly, however, the analysis centred on the question: Why do waste waterscapes look the way they do? The waste waterscapes of Delhi's informal settlements, too, so my assumption, are the product of specific material and non-material practices that are embedded in social, cultural and political relations of power. To understand the 'why', I therefore had to understand the process of their production. The main research question thus is: ***How are the waste waterscapes of Delhi's informal settlements produced?***

To operationalise this question, I argue that a significant part of the production of waste waterscapes can be gauged through the concept of governance. In this part, section 1.1, the production of material waterscapes was described as a process shaped by practices of human-water interaction. Numerous everyday practices of citizens and state actors – the use of water and its discharge as waste water, the cleaning of drains, complaints and negotiations – play a role here. But also larger undertakings at the level of the Municipality or the State, like the disbursement or withholding of public funds or the allocation of scavengers to different wards produce the material waste waterscape. Yet, all these practices are embedded in cultural and discursive constructions and social relations of power, producing the material, constructed as well as social space of the waste waterscape at the same time.

Waste water governance, broadly understood as the processes of interaction through which societies make decisions on waste water (see this part, section 2), shapes this production of waste waterscapes in three important ways: First, governance processes produce a relational space in which actors are positioned in relative distance to each other (Benecke et al. 2008: 19). This means that certain actors are at the centre of decision-making on waste waterscapes while others are marginalised. Governance processes thus create social relations of power, and a social space. Second, societies decide in governance processes which kinds of knowledge, of discourses, of cultural values or of "imaginations" (Swyngedouw 2006a: 24) are used to formulate policy goals, and which ones are left out. For instance, the discourses of modernity and development translate into Master Plans and policy visions of municipalities, such as the Vision 21 presented in part I, or the Delhi Master Plan promoting the extension of sewer networks. This produces the constructed space of the waste waterscape. Finally, governance processes result in a situation where certain practices of human-water interaction are legitimised, whereas others are sanctioned. If the policy goal is 100% coverage of the sewer network, building sewer lines will be labelled as a desirable practice, and public funds will be allocated for that purpose. In contrast, manual scavenging of dry latrines for example, will be forbidden. The material space of the waste waterscaoe is thus heavily influenced. To sum up, governance processes shape the production of waste waterscapes to a very significant degree: Governance has space-producing effects (Benecke et al. 2008: 17). The central research question can thus be reformulated as such: ***How are the waste waterscapes of Delhi's informal settlements governed?*** In the following, the concept of governance will be elaborated.

2 What is governance?

The concept of governance has been constructed within various discourses over the last decades (Bevir 2003: 200). It therefore carries a broad variety of meanings and connotations, as well as policy implication. Understanding the respective contexts in which governance is used is therefore crucial for the discussion of its different dimensions that will be sketched out in the following (see Fig. 4).
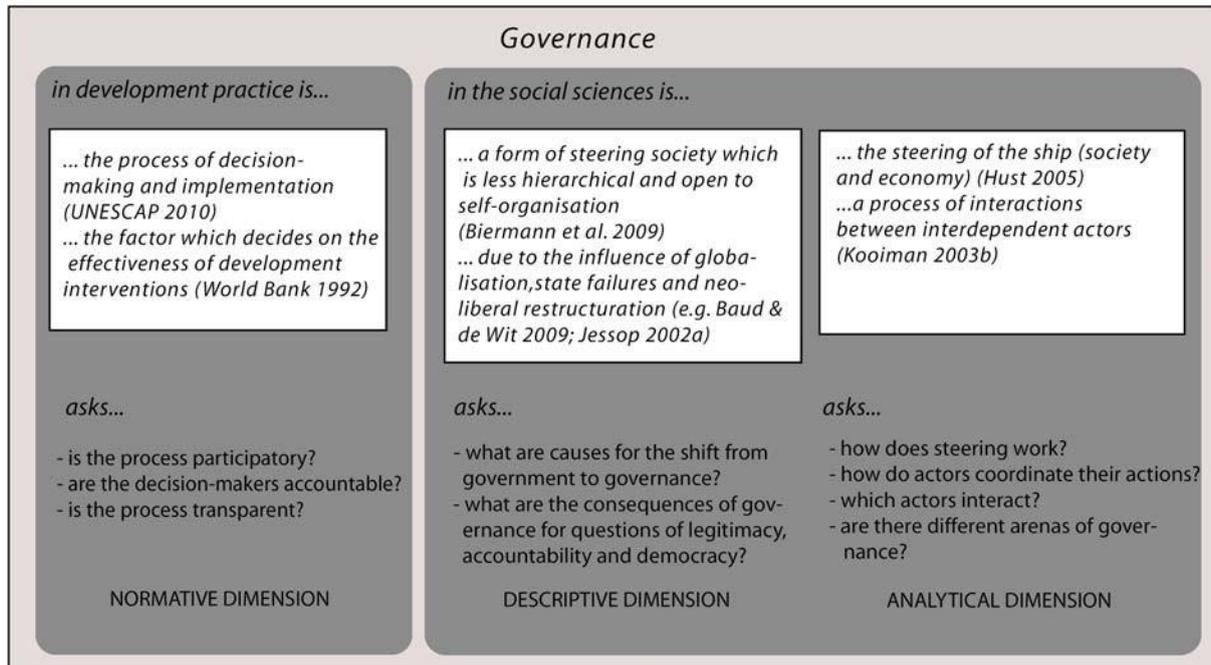
Fig. 4: The concept of governance in the different discourses. (Draft: A. Zimmer)

Governance as a concept of development practice owes its current popularity to the World Bank (Leach et al. 2007: 8). In 1992, the Bank published a booklet entitled "Governance and Development". In this publication, governance is defined as "exercise of authority, control, management, power of government" (World Bank 1992: 3). The concept is used to explain why certain development interventions fail while others succeed. In line with their mandates, the World Bank emphasizes the role governance plays for economic development, while UN organisations mainly highlight its relationship with human development (Weiss 2000: 804).

In the social sciences too, governance has come to designate a variety of processes depending on the disciplinary backgrounds. A major distinction exists between definitions describing it as a less hierarchical form of governing, and definitions that use this term for processes of social interaction (Pierre & Peters 2000: 24; Hoff 2003: 42; Mayntz 2003: 27-28). In the following, the meanings governance takes in the two fields will be presented briefly.

2.1 Governance in development practice

Governance has become a buzzword of development practice. As a result, there are numberless definitions available focussing on different aspects of the concept. Yet, most of them recognise governance as a process or activity of managing public affairs (World Bank 1992: 3; Commission on Global Governance 1995; UNDP 1997; UNESCAP 2005: 19; UN Habitat no date). More specifically, governance designates the "process of decision-making and the process by which decisions are implemented (or not implemented)" (UNESCAP 2010). Governance is understood by development agencies to be the task of the state, the private sector and civil society conjunctly (UNDP 1997). While some agencies therefore focus on aspects of collaboration between different actors in this process (UN ECOSOC et al. 2004: iii), others highlight the conflictual content of governance (Commission on Global Governance 1995; UN Habitat no date). Although informal procedures of decision-making are included in definitions of governance, there is a certain bias against them. It is assumed that "informal decision-making is often the result of corrupt practices or leads to corrupt practices" (UNESCAP 2010).

Following from the mandate of the World Bank and UN agencies, particular emphasis is on the normative implications of the concept, i.e. 'good governance'. Good governance is understood as the decisive factor in translating development interventions in concrete progress on the ground (World Bank 1992: 1). UNESCAP (2010) defines good governance on the basis of eight characteristics: it is participatory, consensus oriented, accountable, transparent, responsive, effective and efficient, equitable and inclusive, and follows the rule of law. For cities, UN-Habitat (no date) adds sustainability, subsidiarity, civic engagement and citizenship, as well as security to the list. "Good urban governance must enable women and men to access the benefits of urban citizenship" (ibid.), including access to basic necessities and the possibilities to "use their talents to the full to improve their social and economic conditions" (ibid.).

In this discourse, governance reveals a prescriptive dimension: To achieve the aims of good governance, structures as well as practices of governance need to be reformed. On the one hand, rules and regulations, forms of financial management and the set-up of decision-making bodies are scrutinised (World Bank 1992: 2; UNDP 1997). On the other hand practices such as formulating political visions, finding consensus and agreeing on common goals, or circulation of information are problematised (World Bank 1992: 13; UNDP 1997; UN ECOSOC et al. 2004: v; UNESCAP 2005: 33). However, suggested interventions subsequently focus mostly on structures in an attempt of 'getting the institutions right', assuming that changes in the practices will ensue.

In Delhi, the National Government and the Government of National Capital Territory of Delhi (GoI Ministry of Environment & Forest & GNCTD Planning Department 2001: 85) have subscribed to the good governance agenda, underlining the need for a broad range of changes to tackle the city's environmental and social problems. The attempt at achieving 'good governance' is therefore crucial for the analysis of state practices aimed at governing waste water in informal settlements.

2.2 Governance in the social sciences

In social sciences, it is particularly political sciences that have discussed the concept of governance for some time. Mayntz (2003: 28-30) points out how paradigms of governance theory in the political sciences have shifted: After the Second World War, studies were interested in states' capacity to steer. Then, attention turned to reasons for policy failure. Subsequently, locating the reason for failures in issues of governability of societies, the limited capacity of states to steer was understood to need complementation by markets and horizontal forms of self-organisation. This led to a growing interest in networks, while at the same time demanding the reformulation of the role of the state. Losing some of its authority the state is now seen more as the "manager of sovereignty" (Genschel & Zangl 2007: 10, *translation by Schuppert 2008: 9*), in whose "shadow of hierarchical authority" (Scharpf 1994: 41) negotiations between different actors take place. More recently, debate has spilled into geography and has been of particular use to understand environmental problems and policies, and discuss their specific spatial dimensions (among others Liverman 2004; Bulkeley 2005; McCarthy 2005; Baud & Dhanalakshmi 2007; Leach et al. 2007; Bakker et al. 2008; McFarlane 2008a).

In contrast to the development discourse exhibiting the normative dimension of governance, a descriptive and an analytical dimension of governance can be distinguished in the social sciences.

2.2.1 Governance as a new phenomenon

The descriptive dimension uses the notion of governance to describe changes in societal ways of steering. Governance in this context refers to "forms of steering that are less hierarchical (…), rather decentralised, open to self-organisation, and inclusive of non-state actors" (Biermann et al. 2009: 4). New actors, new organisational structures, and new modes of communication have appeared (Swyngedouw 2005: 1991-92). In the context of waste water this includes e.g. public-private partnerships for the maintenance and operation of public toilet blocks or for solid waste

management. These changes are identified, characterised and explained. Moreover, classical concerns of political science are reformulated with regard to these changes.

Three lines of argument to explain these developments can be distinguished: First, authors trace the origin of changes to the onslaught of globalisation on the nation states – and at the level of cities to the emergence of more and more megacities like Delhi which are difficult to govern in a centralised manner. In sum, greater diversity, faster dynamics and increasing complexity of societies and societal change are identified as drivers for new forms of steering as they require more resources and knowledge to handle them (Kooiman 2003b: 3; Mayntz 2003: 32-34; Leach 2007: 1; Baud & de Wit 2009: 5; Biermann et al. 2009: 14).

A second line of thought argues that state failure is the main driver for restructuring governing practices. As states are unable to deliver services to citizens and to cope with the above cited changes in society and economy, other actors are needed to offer expertise or take over some of these tasks (Caseley 2003: 3; Coaffee & Healey 2003: 1979). This discourse on failure and crisis comes very close to the beginnings of the concept from within the World Bank (1992: 5) that explained slow development of countries by bad governance. In India, considerations about the state's limited ability to deliver have led to an increased role of civil society actors, declared "partners in development" (GoI Planning Commission 2002) as outlined in part I.

Following a third line of thought, governance failure can no longer be tolerated as countries as well as cities increasingly feel the need to compete under neoliberal policies (Baud & Dhanalakshmi 2007: 133; Jessop, B. 2002), a development clearly visible in Delhi (see part I, section 2). Critical authors have noticed that political changes have echoed developments towards post-fordism in the economy (Chandhoke 2003: 2960). According to them, the neoliberal approach is based among other things on competitiveness, re-scaling of policy-making and implementation, as well as the emphasis on partnerships, networks and negotiation (Jessop, Bob 2002: 459). Accordingly, and in order to cater to the needs of the economy (Chandhoke 2003: 2959), we have witnessed a shift from hierarchical and rigid practices of government to flexible forms of governance in which the state is but one actor among several cooperating entities. Especially in developing countries like India, neo-liberalism has moreover led to budget cuts, leading to de-investment in the public sector, and increasing reliance of basic service provision on private investments (Benjamin 2000: 37; McFarlane 2008a: 88; Zérah 2009: 853; Bear 2010: 1). The World Bank's use of the normative concept of good governance in lending policies has further pushed this development (Coelho 2005: 176). Following this strand of literature, it is thus the discourses as well as the practices of neoliberalism which have led to governance.

Independently of the reasons for shifts towards less hierarchical forms of governing, new partnerships between the state and non-state actors raise several questions: First, the increasingly complex architecture of governing organisations has consequences on issues of transparency. Second, the growing interdependency of partners in governance and the formation of self-organised networks lead to problems of coordination. Third, the state is required to look for a new interpretation of its role in these networks, acknowledging that it can influence but not determine governance outcomes. This leads to high degrees of uncertainty (Stoker 1998). Finally, the described changes cause shifts in responsibilities (Chandhoke 2003). Because of this, problems of accountability and legitimacy are crucially related to the new partnerships (Biermann et al. 2009: 53). This leads to questioning the democratic content of governance (Chandhoke 2003; Mayntz 2003: 32; Swyngedouw 2006b: 71).

2.2.2 Governance as a process of interaction

The analytical dimension within the social sciences discourse uses governance as a concept to analyse processes of interaction and decision-making in societies. This perspective allows best theorising the negotiation processes in the waste waterscape. First, it is not normative, and thus able to analyse interactions from a point of view that acknowledges that goals such as 'good governance' are themselves results of governing processes. Second, it does not define governance as a historical phenomenon. In contrast, it posits the importance of negotiation processes in societies at all times and refrains from assuming historical changes a priori. Both, the refusal of a normative stand point, as well as the openness to look into historic specificities without prefixed categories of change, are necessary for the analysis from a Foucauldian point of view, as will be elaborated in part III. Therefore, **it is this understanding of governance that will be used for studying how waste waterscapes in Delhi's informal settlements are governed.**

Following this strand of governance literature, the appearance of the concept of governance expresses a change in the way of looking at governing – more than a change in governing practices. Authors often acknowledge innovations in modes of steering but not necessarily make them the focus of study. Rather, they try to investigate how exactly societies steer themselves, and how negotiation processes work among actors (Schmitt 2009: 39).

Governance is described as an activity (Dean 2010: 18) or a process (Leach et al. 2007: 1), emphasising its actor-orientation more than its structural aspects. However, the placement of governance between actor- and structure-orientation is contested. Schmitt (2009: 36) e.g. highlights its integration of actors' perspectives. In contrast, Lehmkuhl et al. (2009: 12) describe it as a concept which stresses rather structural aspects. For the use of this study, an

understanding of governance will be developed which is predicated upon *practices*, allowing the individual subject of these practices to be as visible as the rationalities, economic processes and technologies that underlie them. The processes of interaction designated as governance can then be analysed from a perspective of individual governing practices.

Governance, in the analytical debate, is most illustratively described as the "steering of a ship" (Hust 2005: 6). The 'ship' in this case consists of society and economy which are provided with a direction through practices of governing (Pierre & Peters 2000: 2). As such, governance can be understood as the wilful directing of the course of public affairs: it has to have an intention, a direction, and an aim. Recent definitions in this strand of scholarship understand governance as processes of interaction between mutually dependent actors aimed at solving societal problems (Schimank 2007: 29), or modes of coordination of action (Lehmkuhl et al. 2009: 4). Actors' interdependence is assumed to be due to a lack of legitimacy and competence of any single actor (Kooiman 2003b: 3; 2008: 8; Baud & de Wit 2009: 2).

Interactions, changing relationships and possible regulations of interaction are therefore suggested as fruitful entry points to the analysis of how societies and economies are steered (Kooiman 2003b: 4; Schimank 2007: 29; Schuppert 2008: 34). While day-to-day life and its "complex, layered interaction processes" (Kooiman 2003b: 11) are traditionally side-lined in the analysis of governance (Schimank 2007: 30), they come into focus through an approach that puts governing practices centre-stage (Dean 2010: 41).

Interaction, however, does not happen between all actors affected by one problem; rather separate spheres of governance exist in which different groups of people come together. Hyden et al. (2004: 4) distinguish between six arenas: civil society, political society, government, bureaucracy, economic society and the judiciary. Benjamin (2000: 45) shows how different "circuits" of governance based on class and caste exist within the south Indian city of Bangalore. At a micro-level, Fuchs (2005: 119) describes different circuits of what he calls self-governance (in the sense of governance without the state) of a Bombay slum: it is in these separate, yet interlocked circuits that debate and decision-making happen.

Recognising multiple governance arenas is crucial to answer the research question of how waste waterscapes in Delhi's informal settlements are governed. Decision-making regarding informal settlements often seems to be inconsistent or haphazard, and outcomes of negotiation processes are messy. This messiness is related to a multiplicity of arenas in which interactions take place – and this concerns very prominently interactions between different state actors. We

have just seen how Hyden et al. (2004: 4) identify three arenas within the state: the government, the bureaucracy, and the judiciary. Yet, this distinction is not detailed enough to grasp the highly political, contested and contradictory character of governance processes. I therefore want to further advance insights into multiple governance arenas with the help of the concept of the everyday state.

Traditionally, the state has been addressed as a relatively monolithic actor, source of authority, political power and legitimate violence (Stoker 1998: 17; Leach et al. 2007: 4-5; Dean 2010: 33-34). This view, developed in the context of western nation states, is increasingly questioned within political sciences as seen in this part, section 2.2. But instead of redefining the state by locating governing power in markets and civil society as undertaken in political sciences, it is important, too, to rethink the state itself – and not only in terms of the manager or regulator of governing activities. Recent governance literature is acknowledging the fact that the state is no unitary entity (Carlsson & Berkes 2005: 65; Leach et al. 2007: 9; Dean 2010: 35), but has instead a "dispersed nature" (Appadurai 2001: 41). For the governance process, diversity and power struggles within the state are therefore of high relevance (Coaffee & Healey 2003: 1980; Dupont & Ramanathan 2008: 338; Bawa 2011) – which means that different governance arenas exist *within* 'the state' itself.

3 The Everyday State: Plurality within

Anthropologists and social geographers have been looking into the problem of plurality within the state in more detail under the label of "everyday state" (Fuller & Bénéï 2001). This concept sheds new light on the state, on state practices, and consequently on state-citizen relationships. Instead of seeing the state as a monolithic block, scholars suggest that what is considered to be the power of the state is dispersed (Kalpagam 2006: 79) and negotiated in processes of "micropolitics" (Best & Kellner 1991: no page). From this perspective, public policy is something which is created not in parliaments, but through adding up individual practices of bureaucrats who interact with citizens on a regular basis – and policy conflicts are fought out in these interactions (Lipsky 1980: xii; ibid.: 3). There is thus under the unitary image of the state, a "routine state" made up of a multiplicity of "everyday institutions and forms of rule" (Corbridge et al. 2005: 5; see also Oldenburg 2006: 207) that can take very localised expressions. Scholars have investigated this everyday state through focussing on those who represent it. Accordingly, the 'everyday state' is conceived of as something people entertain intimate, personal relationships with (Osella & Osella 2001: 157).

3.1 Who is the state?

For scholars of the everyday state, the state is alive in its multiple representatives. State representatives are far from identical with the state apparatus or structures – rather, they have complex relationships with this apparatus that are negotiated in continuous interactions (Tarlo 2001: 87). Figure 5 exemplifies this diversity of state actors. In the waste waterscapes of Delhi's informal settlements, these include such diverse actors as scavengers, Sanitary Inspectors, or Municipal Councillors working in the wards; but also high ranking bureaucrats and politicians, like the Director-in-Chief of the Department of Environment Management Services, the Minister for Urban Development, or Members of the Legislative Assembly.[15] The figure shows that individuals that work for the state have to be conceptualised as embedded in multiple networks (Hupe & Hill 2007: 284). Bureaucrats are integrated into their administrative hierarchy and organisational structures. Politicians are part of political parties that are structured internally according to principles of seniority or sympathy. Yet, state representatives might be members of social associations and belong in a specific local society, too – a fact whose importance
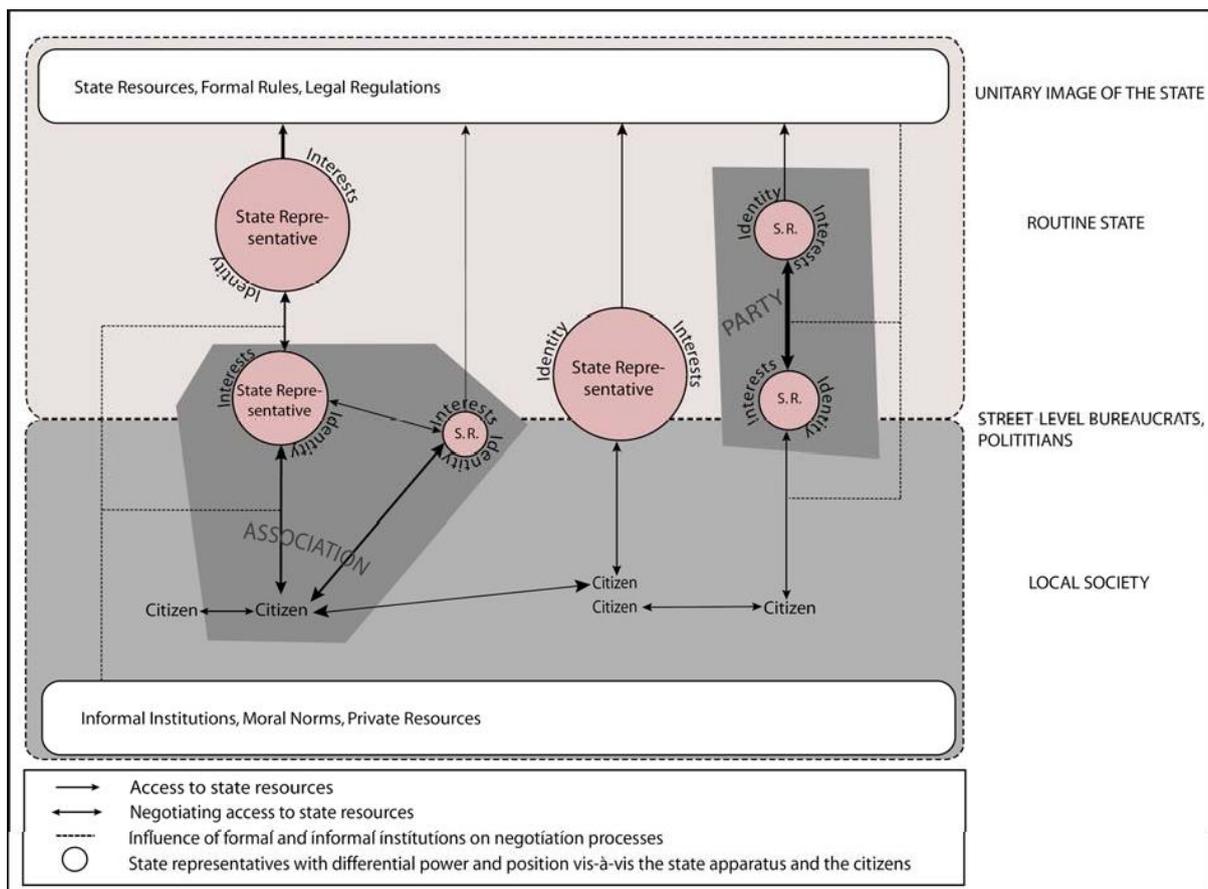
Fig. 5: The everyday state. (Draft: A. Zimmer)

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[15] Part III, the Methodology, will elaborate on the selection of interview partners. Actors here are named in an exemplary fashion.

traditional bureaucracies might try to minimise (Wade 1992: 52; Cleaver 2002: 17; Corbridge et al. 2005: 152). State representatives, too, have their own, differentiated sightings of the state (ibid.: 152) and have to struggle for access to its resources (Bawa 2011: 496). Politicians e.g. have to apply for funds to be used in their constituencies. While some are more successful, others might prove relatively powerless in that process (Oldenburg 2006: 186).

Moreover, 'unbundling' the state shows how state actors have distinct social identities. These disparities are due to several factors. First, differences can be grounded on regional, religious, caste, racial or gender identities. Second, various state agencies can develop specific disciplinary and professional cultures (Crook & Ayee 2006: 54; Leach et al. 2007: 9). Finally, within agencies, actors hold different positions and, accordingly, interests (Lipsky 1980: 18). The concept of the everyday state thus also reveals gaps between different strata of the administration. Common goals and work attitudes between state actors can therefore not be taken for granted, but are produced or undermined through specific processes of management: Within agencies, the existence of common goals depends partly on organisational design, including recruitment rules (Wade 1992: 54).

In India, it has been observed how recruitment following class lines separates senior staff and lower ranks (Anjaria 2009: 5). Bawa (no date: 12) describes how this gap is further reinforced through differential training after recruitment. Differences can lead to a lack of trust within the state apparatus, and disrupted information flows between agencies or strata within one organisation are a common problem (Corbridge et al. 2005: 167Connors 2007: 234; ibid. 240). Also, world views, practices and logics vary widely. Different state actors live within separate discourses (Kaviraj 1991: 91) and in different social worlds altogether. This might lead to resistance of staff on the ground towards objectives of higher levels (Lipsky 1980). Staff in the wards, sent to control sections of the population such as residents of informal settlements, often shares fields of practice and meaning with these groups and thus identify more with them than with their superiors. As a result policy implementation is partial, or reinterpreted to justify bribery (Wade 1992: 53; Anjaria 2006: 2144; Connors 2007: 18).

3.2 The importance of the ground staff

The social world of lower ranking administrative staff that is in regular interaction with citizens has been documented by Lipsky (1980) under the term street-level bureaucrats (see Fig. 5). In the case of this thesis, this term is used to designate sanitary staff in the zone i.e. Senior and Chief Sanitary Inspectors and in the ward, i.e. Sanitary and Assistant Sanitary Inspectors, Sanitary

Guides and scavengers (see part IV, section 5.3.2). Contact with inhabitants is most frequent for those on the lowest posts, i.e. scavengers, and least frequent for Senior Sanitary Inspectors.

Lipsky (1980: 155) argues that street-level bureaucrats adopt patterns of practices, conceptions of their work and of their clients, distinguishable from those of higher ranking officials. His structuralist approach entails that the high degree of discretion street-level bureaucrats enjoy and limited available resources have an impact on work procedures (ibid.: 111). To tackle the resource constraint, he argues that staff will try to limit demand of their services – they enact the "politics of scarcity" (Corbridge et al. 2005: 38). At the same time practices elicit citizens' cooperation (Lipsky 1980: 95), and tend to categorise those seeking assistance according to their attitudes (ibid.: 59, see also Coelho 2005: 180-82). Street-level bureaucrats might also reinterpret their assignments and duties in order to cope with their inner role conflicts or, as Lispky (1980) puts it, individual dilemmas.

Decisions of street-level bureaucrats are recognised to have redistributive and allocative effects on citizens' lives (ibid.: 8; see also Connors 2007: 16-17). In the waste waterscape this is obvious when scavengers decide to clean or not to clean a certain drain, or Sanitary Inspectors decide to send scavengers to a specific area on request of citizens or not. Yet, even more importantly, ground staff is especially critical in constructing notions of citizenship, as they are citizens' first point of access to the state (Lipsky 1980: 4). They are the ones who most prominently influence people's subjectivities in daily interactions (ibid.: 9): it is in relation to them that people will learn to understand themselves as citizens (Altmeyer & Thomä 2006). This is a point governance literature usually overlooks. We will come back to this in section 6.1.3 of this part and in the empirical parts.

4 Everyday governance of the waste waterscape

The awareness for the existence of the everyday state leads to recast the concept of governance (understood as a process of interaction, see this part, section 2.2.2) in a specific light. It is obvious now that the state's governing activities are not happening exclusively in high offices where plans are laid out and policies designed. Instead, they are happening through multiple, and sometimes contradictory incidences of what I want to call *everyday governance*. The benefit of introducing a concept of everyday governance is, according to my understanding, considerable. It is not to deny the role of the private sector and civil society in governance, but a revision of the state's role, which is far more complex and fragmented than what is generally acknowledged.

The governance literature criticises that despite continuous efforts of the development community to bring about change in the policy, results at the operational level of water governance are slow to materialise (Pahl-Wostl & Toonen 2009: 26). In India, these perceived failures to implement governance reforms at national, State, or municipal level are attributed especially in public discourse, but also in the social sciences, to the fact that local level bureaucrats reinterpret rules and that politicians might break them to satisfy their vote bank (e.g. Morris 2002: 32; Nallathiga 2006: 32; The Times of India 2009b). It is observed critically that central programmes and objectives get redefined locally on a routine basis (Hyden et al. 2004: 133). Resistance by state representatives on the ground or the inability of higher ranks to enforce discipline amongst the ground staff are labelled as problems or explained by lack of political will that need to be eliminated in order to achieve 'proper' governance.

In contrast to an approach which identifies governance failures, the concept of everyday governance is well fitted to address interactions in which governing waste water takes place in their diversity. Everyday governance is a huge part of what is happening in urban waste waterscapes. Acknowledging this might be a step forward in tackling the "immense lack of knowledge of how things really work in a city" (Hust 2005: 12). If reforms at the operational level have not succeeded so far, this is because practices of everyday governance are either neglected, or conceived as erroneous and a deviation to the norm in governance discourses. From a point of view of everyday governance a gap between practices at different levels of the state, between or within different agencies is hardly surprising (Corbridge et al. 2005: 174). Everyday governance places the contested, political character of waste water governance in the focus and highlights how a plurality of rules and norms guides actors in their governance practices. Everyday governance moreover calls attention to the day-to-day practices of involved actors as they play a significant part in shaping governance outcomes. I therefore argue that a major part of the waste water governance outcome in Delhi is determined in everyday interactions between state representatives, private actors and citizens. In the following, the literature on governance will be reviewed with an eye on its contribution to understanding everyday waste water governance.

4.1 Contested waste water governance

The concept of the everyday state highlights the great importance of citizens', bureaucrats' and politicians' differing perspectives for the working and evaluation of everyday governance. In this line of thought, Bevir (2003: 208) recognises that governance is the "product of political

struggles embodying competing sets of beliefs". To reflect this, governance analyses need to pluralise their points of view instead of sticking to a "managerial perspective" (Hoff 2003: 41).

Starting from a vantage point of everyday governance means that individual state representatives' interactions with other actors need to be looked into in order to understand how coordination and steering take place. Interactions might not always be productive, let alone based on consensus; instead, actors might have "discrepant interests and ambitions" (Kooiman 2003a: 79) leading to major conflicts and power struggles. In sum, everyday governance acknowledges that governance goals are highly contested in multiple arenas of interaction.

The concept also recognises the variety of institutions state representatives adhere to. Recent scholarship on institutions further stresses this point (Cleaver 2002: 16; Scott 2008: 49; Etzold et al. forthcoming). The findings indicate a spatial and temporal plurality of institutions which are not necessarily all in effect, or "rules-in-use" (Hyden et al. 2004: 2; Etzold et al. 2009: 7; Knerr 2008: 129: 19). Institutional arrangements have to be understood as "improvisatory, ad hoc and often intermittent in nature" (Cleaver 2002: 22; see also Knerr 2008: 128). In this situation of overlap and complexity, rules are "constantly negotiated, contested and struggled over" (Bohle et al. 2009: 54). These negotiation processes can be understood as governance interactions.

Bawa (no date: 21) exemplifies this parallel and contested existence of rules with regard to water access by slum dwellers in Bombay. While bureaucrats plead for cutting access as it is illegal, politicians want to maintain access, labelling cut off a "sin". In especially visible cases, conflicts between different state representatives about the legitimacy of contradictory institutions can even be taken to the arenas of the courts (Dupont & Ramanathan 2008). A focus on everyday governance allows studying these otherwise mostly invisible negotiation processes within the state and between state representatives and citizens. It helps overcome the bias towards formal rule making of the governance concept and the rigid distinction between formality and informality (Etzold et al. 2009: 9). It prevents the analysis from establishing governance failure where rules are not implemented according to central governments' intentions. Rather, it shows the variety of institutions which influence governance practices. As a consequence, it acknowledges diverse governing practices in multiple arenas.

In this study, the focus will therefore be on the different perspectives various actors have on the waste waterscapes, and the diverse problems actors identify. I will also look into the conflicting practices in Delhi's informal settlements. The analysis will show that while discrepancies exist between the city level and the ward level governance, inhabitants and local staff, too, have very different ideas on which waste water problems exist and how they should be addressed. Relationships between these groups of actors are therefore strained.

4.2 Everyday interactions in the waste waterscape

Contestations between actors about what should be done e.g. against overflowing drains take place in everyday interactions between residents, staff of the Sanitary Department and local politicians. It is in these interactions that inhabitants voice their claims to desilting of drains by public scavengers, or Municipal Councillors put pressure on the administration to send scavengers to certain areas in their wards. The concept of everyday governance therefore highlights the importance of everyday interactions between various actors. While most of the governance literature actually remains silent on how exactly actors' interaction can be spelt out in day-to-day life, some authors have elaborated on this issue.

Schimank (2007: 42) points out that looking at forms of coordination alone – such as market, network, or hierarchy – cannot render sufficient explanation of governance processes. Instead, he suggests studying the basic mechanisms of coordination, the "microfoundation" (ibid.: 42, *own translation*) of forms of coordination, which, according to him, gives governance analysis its explanatory capacity in the first place. He distinguishes three mechanisms of coordination between actors, namely mutual observation, mutual influence and negotiation (ibid.: 36-42).

A second prominent scholar having worked on governing interactions is Kooiman (2003b: 13) who defines these interactions as "a mutually influencing relation between two or more entities". Interactions have, according to him, two levels: the actor level and the structural level (ibid.: 13-14). This distinction allows seeing actors as capable of some degree of intentional control over their actions (even though not over all of their effects), while at the same time acknowledging the existence of relatively stable social, cultural, political and economic contexts.

Attempts at understanding governance interactions however have a major shortcoming: they touch upon the issue of power yet without problematising it in depth. Schimank (2007: 38, *own translation*) acknowledges the importance of a "potential to influence", such as for example "power, money, knowledge, love or affection, or moral authority" for interactions. Kooiman (2003b: 64) mentions that "social-political capital" plays a major role in facilitating governing actions, which in turn might be derived from social power. Bang (2003a: 9) stresses the fact that in governance a "communicated message" needs authority (understood as "an interactive, dialogical, negotiable, cultural, ironic, strategic and tactical relationship of knowledge and power" (ibid.: 5)) to be accepted and thus followed. Biermann et al. (2009: 37-38), refer to power and authority as conferring upon actors (or, in their terminology, agents) the ability to set rules, prescribe behaviour and obtain consent of the governed. According to them, power is "the capacity to prevail over others with conflicting interests in contests and decision-making, to

change the agenda or rules of the game by which winners and losers are decided, and to shape or re-define the context in which actors are engaged" (ibid.: 68). Yet, these insights, although valuable, need further theoretical grounding: if scholars working on waterscapes claim that it is essential to pay attention to power relations to understand the processes behind their production (Swyngedouw 2009: 57), and if governance is about power relations and struggles (Bevir 2003: 208; Bohle et al. 2009: 54), then the analysis of everyday governance of the waste waterscapes cannot do without a theory of power relations. To answer the research question how waste waterscapes are governed, it is necessary to understand how governing interactions work in a context of power relations.

The option chosen for the analysis of Delhi's waste waterscapes is therefore to base the understanding of governance on the concept of governmentality advanced by Foucault (especially his lectures on "Security, Territory, Population" (2007), as well as "The Birth of Biopolitics", (2010)). This concept explicitly takes power relations – not power – in the focus while elaborating on the way governing works (Foucault 1986: 219). Using Foucault's analytical tools of *governmentality* as the rationality expressed in a multitude of governing practices and of *government* as 'conduct of conduct' will allow understanding the processes of interaction in everyday waste water governance in depth.

5 Governmentality and governmental power: The perspective of Michel Foucault

At first sight, Foucault's approach might seem to sit uneasily with actor-oriented approaches such as the concept of the everyday state. Foucault is very sceptical about individuals' agency,[16] and the starting point of his analysis is never the actor; rather he shows how subjects are constituted – for example as 'state representatives' – through specific practices and discourses. Also, for Foucault (in contrast to Lispky 1980: xii), governing is not reducible to the practices of individuals (Dean 2010: 265).

Yet, following a Foucauldian approach, practices have to be the starting point of any analysis, as it is from them that broader patterns of governing as well as fault-lines in these patterns become visible (Veyne 1992: 75 in Füller & Marquardt 2009: 97; Dean 2010: 41). If the analysis of governance is to integrate a Foucauldian perspective, therefore, the processes of interaction have to be studied starting from the governing practices of different subjects. Governing practices can be scrutinised for underlying logics according to which they are oriented and

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[16] Lemke (1997: 316) highlights that this scepticism slightly reduced in the last years of his life, and especially after the events of the Islamic Revolution in Iran 1979.

modified – the governmentalities. But most importantly, governmentalities are spelled out through practices and become an experienced reality only through them. By focussing on practices, oversimplistic explanations of changes in ways of governing can be avoided (Füller & Marquardt 2009: 97); instead conflicting "everyday kinds of governmentality" (Dean 2010: 9) might be found within certain established regimes of practices. The everyday dimension of governing practices is therefore very much in the focus of a Foucauldian analysis. Upon a closer look, therefore, there is no contradiction in looking at individuals' everyday governing practices in the waste waterscape with the help of Foucault's concepts. From such an analytical perspective, **everyday governance can be defined as the process of decision-making and interaction that is the outcome of everybody's governing practices which are oriented along and in turn shape governmentalities**.

Governing practices are made intelligible by Foucault through an "analytical grid for relations of power" (Foucault 2010: 180) which he calls governmentality. This analytical grid, Foucault holds, is to be considered "simply as a point of view, a method of decipherment which may be valid for the whole scale" (ibid.: 186) and thus refers back to the methods employed to understand micro-powers. There is, he insists, "not a sort of break between the level of micro-power and the level of macro-power" (Foucault 2007: 358). This is important to keep in mind for the analysis of everyday waste water governance I intend to undertake.

What is governmentality? In a first attempt Foucault (ibid.: 108) defines it as 1) "the ensemble formed by institutions, procedures, analyses and reflections, calculations and tactics" that allow exercising a governmental type of power; 2) a tendency "towards the pre-eminence over all other types of power (...) of the type of power that we can call 'government'"; and 3) "the result of the process by which the state (...) was gradually 'governmentalized'". This three-fold, and somehow unspecific definition is elucidated in the remainder of his lectures: it becomes more and more clear that Foucault designates as governmentality a rationality or "reason" of governing (ibid.: 285; see also Füller & Marquardt 2009: 94). It is the regime of truth which makes a certain way of exercising power – governing – thinkable and doable. Certain forms of governing become accepted, others rejected through the prevailing governmentality.

The concept of governmentality helps problematising governing practices in the waste waterscape in a radical way. Problematisation is the central piece within Foucault's methodological approach (Lemke 1997: 341). It is achieved through a perspective on dynamics and historical changes, on singularities and dependencies in our notions of how to govern in an acceptable way – and reveals that current forms of governing waste water are all but evident

(Foucault 1997: 54; Dean 2010: 31). They are rather the contingent result of numberless practical choices and the effect of powerful discourses (Lemke 1997: 341). Problematising governing practices in the waste waterscape means scrutinising them from a distance, to make them look awkward and unfamiliar. It means asking: How differently could we govern waste water? How differently could we think about governing? How did something called governing become acceptable? It therefore allows a forceful critique of the present (ibid.: 354). A major instrument in disclosing the singularity of the present is by looking at the past. Foucault's analysis results in two main insights: First, it defines the modern meaning of government, from which Foucault derives his notion of governmental power. Second, it creates an understanding of shifts in governmentality in Europe.

5.1 Governmental power: The 'conduct of conduct'

Foucault's analysis of the governmental rationalities in Europe since the end of the Middle Ages highlights how the understanding of government changes considerably over time: A modern notion of government develops. Government comes to mean the 'conduct of conduct', or the way someone attempts directing the behaviour of someone else through tactics (Gordon 1991: 48; Foucault 2007: 99; Dean 2010: 17; Foucault 2010: 186). It is therefore a social practice: an activity in which a form of power is expressed (Dean 2010: 18). This form of power is called governmental power (Foucault 2007: 108).

Government also comes to designate different relationships: the relationship between a person and him- or herself, the relationship between fathers and their families, and between the prince and the state. It is exercised through practices of the self – i.e. the intent to shape one's own behaviour – as well as practices of government in a narrower sense – i.e. the intent to shape other's behaviour (Dean 2010: 20). In fact, both sets of practices are intimately linked, in that influencing others relies on "processes by which the individual acts upon himself" (Foucault 1993: 203; see also Foucault 1997: 181). If the process of governing others is successful, people will find themselves willing to accept being influenced by the governing actor and start governing themselves (Lipsky 1980: 117; Ziai 2003: 413; Schimank 2007: 38; Füller & Marquardt 2009: 89; Schmitt 2009: 34).

For the development of this understanding of government, Foucault argues, Christian concepts of the pastorate were instrumental. He shows how ideals of governing oneself, governing a family, and leading the "flock" of entrusted "sheep" like a good shepherd expressed in the notion of pastorate were used to reformulate the ideas on how to manage the state from the 16th century onwards (Foucault 2007: 95; ibid. 165; ibid. 231). In the context of the state, the

meaning of government is exemplified by Foucault with the help of a metaphor: the prince is supposed to govern the state like a coxswain steers a ship. This metaphor was already mentioned in section 2.2.2 of this part. Yet, compared with the governance discourse, Foucault's interpretation has significant implications which are usually not elaborated on. Steering a ship, for him, means:

> "being responsible for the sailors, but also taking care of the vessel and the cargo; governing a ship also involves taking winds, reefs, storms, and bad weather into account. What characterizes government of a ship is the practice of *establishing relations* between the sailors whom one must safeguard, the vessel, which must be safeguarded, the cargo which must be brought to port, and their *relations* with all those eventualities like winds, reefs, storms and so on" (ibid.: 97, *own emphasis*).

Much more than just a preoccupation with a direction and a target, we find here an attention to relationships. It is the moulding of and control over these relationships which is essential to try to reach the destination of the journey. It is these relationships, thus, that are instrumental in exercising governmental power. Relationships provide the link between the 'conduct of conduct' and the government of the state[17]: The state is governed through a conduct of its citizens' conducts in their various relationships. For the analysis of the waste waterscapes in Delhi's informal settlements this means that governing works through the relationships citizens and state representatives have with waste water as well as with each other. Governing waste water designates the attempts to control the interactions various actors entertain with waste water.

Although a form of power, government is "not a practice imposed by those who govern on those who are governed, but a practice that fixes the definition and respective positions of the governed and governors (...) in relation to each other" (Foucault 2010: 12). This means, that the governed subjects only become governed the moment they submit to others' governing practices and start acting upon themselves or changing their behaviour; government as conduct of conduct only becomes government in the lived situation.

In fact, Foucault's ideas on government as conduct of conduct rest on the assumption that individuals have options for acting otherwise – they have freedom and can resist (Foucault 1986: 221; Füller & Marquardt 2009: 96). This opens up options for "counter-conducts" (Foucault 2007: 201). Counter-conducts are defined as acts within the field of power relations (ibid.: 202), as "struggle against the processes implemented for conducting others" (ibid.: 201). As such, they

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[17] The state here refers to the political entity controlled by a governor, such as the prince. In today's language this might be confusing. We see below how today, this expression might be better expressed as government of society and economy. The same holds true for the next sentence.

are closely linked to critique as the ability to envisage different ways of governing (Foucault 1997: 28; 2007: 194-95). Individuals, who do not accept the way they are governed, who develop a different perspective on governing, will not accept the subject-position of the 'governed'. Instead, they might want in turn to conduct the conduct of those who try to govern them. The power struggle which ensues will be demonstrated in the empirical examples which show that not all residents of informal settlements accept being governed at all times and in all situations. Rather, their interaction with state representatives over waste water is a testimony to constantly shifting subject-positions and counter-conducts.

5.2 Problematising governmentalities

With the development of the modern notion of governing, ideas about *how* to govern have changed. Foucault's analysis identifies different governmentalities that developed over time. Nevertheless, these are not to be understood as a neat temporal chain where one element replaces another (Foucault 2007: 107). The analysis rather aims at identifying the diversity of governmentalities in their historical embeddedness. Parts IV and V of this thesis will highlight changes of governmentalities in Delhi over time. Yet, the empirical examples in the later parts of this thesis will show how different understandings of governing coexist in Delhi's waste waterscapes today.

Foucault's account reflects how sovereign power over a territory – inscribed in a juridical governmentality – demands from the subjects abiding by the law (else they are punished). This form of power is still present today when laws specify which waste water-related practices are allowed, and which ones forbidden.

Pastoral attention to each and every part of human life – and the individualised relationship between the governing 'pastor' and the governed 'sheep' – then leads to the development of a disciplinary governmentality. Because states henceforth attempt to "regulate everything" (ibid.: 45), the disciplinary governmentality leads to a merging of government with administration (Foucault 2010 ; ibid.: 37). In the process, the state is "governmentalised" (Foucault 2007: 109). This means that the existing institutions such as schools, the army, or bureaucracy learn how to govern – and learn to conceive of themselves "as elements of the state" (ibid.: 286) in order to realign with the new ideals of government. 'The state' then, becomes the central notion governing is organised around (Lemke 1997: 137).[18] A disciplinary governmentality in

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[18] From here on, the state has its modern meaning of the institution which governs.

relationship to waste water might thus establish a bureaucratic apparatus to measure quantities of waste water, map the existence of sewer lines and drains and count household connections, or monitor the biochemical parameters of waste water.

In the 18th century, the disciplinary governmentality gets restructured around two concepts: The notion of the economy (Foucault 2007: 95) as well as the notion of population (ibid.: 104). Through both, government is re-defined as a rational activity. It is based on logical principles guiding economical and demographic processes (Foucault 1986: 215). Because of the importance of the life and health of the population as goals of government, Foucault terms the new type of power that emerge "bio-power" (Foucault 2007: 1). Political economy becomes a "regime of truth" (Foucault 2010: 18). Its representatives hold that governing has to respect the liberties of the individual (ibid.: 10) because it actually needs them: only if individuals pursue their personal interests, the goals of economic and population growth are achieved (Foucault 2007: 49; 2010: 44; see also Lemke 1997: 173). As a consequence, the limitless government of the disciplinary governmentality is restricted. Instead, governing is concentrated on installing "mechanisms of security" to protect the natural development of economies and populations from being unnecessarily interfered with (Foucault 2007: 353; see also Lemke 1997: 136; ibid.: 177): the liberal governmentality develops. To build up adequate mechanisms of security, it is crucial to identify and calculate the risks these processes are exposed to. Therefore, the notion of risk gains prominence for the formulation of policies. Government does not aim at eliminating danger any longer; rather, it strives to minimise risk to an acceptable level (Foucault 2007: 60-63).

Central for further strengthening this liberal governmentality is the concept of human capital (Foucault 2010: 219). According to it, human behaviour follows rational principles. Analyses focus on individuals' economic behaviour (ibid.: 252), and constitute humans as "subjects of interest" (ibid.: 275) that will always do what is the rationally best option in economic terms. Because the model of this *homo oeconomicus* is so powerful, it becomes the only facet of its citizens that the state sees: it is the "surface of contact" (ibid.: 252) between the individual and the state. For the state, the calculations assumed to inform human behaviour make humans calculable themselves: they become governable (ibid.: 252). In the following, scientists try to investigate the way humans calculate and behave on the basis of environmental factors (ibid.: 269). Changes in the environment are then used by states to manipulate the *homo oeconomicus*. Accordingly, Foucault (2007: 99) notes that liberal government perfections government as an art of "arranging (disposer) things".

For the study of the waste waterscapes in Delhi's informal settlements, Foucault's analysis of governmentality points to the fact that different forms of governmentality are inscribed in the waterscape (Swyngedouw 2006b: 67): The way waterscapes are governed is associated with certain ideas about what acceptable ways of governing look like, or ideas about how society should treat nature.[19] To understand how the waste waterscapes in Delhi's informal settlements are governed, the following question thus needs to be answered: ***What is the current waste water governmentality at work in Delhi?***

5.3 Governmentalities in a non-European context

There are, of course, difficulties in translating Foucault's concepts to a non-European context like India (Corbridge et al. 2005: 16; Lehmkuhl et al. 2009: 14). His analysis is derived from a thorough reading of European history. His views on the modern state and especially his theories on the production of the modern subject are based on religious singularities of Christianity. From a postcolonial point of view, his work has been criticised for largely underestimating the importance the colonial experience had for the development of governmentalities in Europe (Prakash 1999: 12).

Nevertheless, a Foucauldian point of view has been useful to investigate the colonial past of India (and other countries) by questioning the functioning of a governmentalised state within shifting logics of racial difference and inequality (among others Gregory 1998; Prakash 1999; Kalpagam 2002; Redfield 2005; Scott 2005). Despite essential differences between the governmentality at work in Europe and in colonial India (Prakash 1999: 125), scholars have pointed out that the production of knowledge through technologies such as laws, censuses and maps was essential, here too, in order to "represent and rule" India in a 'scientific' way (ibid.: 4; see also Kalpagam 2000). This knowledge established governmental ways of "seeing like a state" (Scott 1998). It was also managed by an administrative apparatus which was modelled on European nation states. While organisational structures and technologies have thus travelled East during colonialism, people's relationship to the state, their identities as citizens, cannot easily be transplanted. Most importantly, the self-representation of colonial powers as bringers of civilisation and modernity (Prakash 1999: 5; Redfield 2005: 62; Scott 2005: 37) shaped a certain understanding the state has of itself – and institutionalised a way of relating to the state which was predicated on a dichotomy of progress and backwardness.

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[19] This has been studied for example in Spain: Franco's dictatorial modernism favoured great engineering works to link rivers in Spain in an attempt to conquer nature (Swyngedouw 1999). In contrast, postmodern discourses of local control, grassroots democracy and sustainability pushed by Non-governmental Organisations in the last decades disqualify these river transfers as unacceptable (Zimmer 2010).

Postcolonial realities, too, have been analysed with the help of Foucault's concepts. Several authors have convincingly shown how in India, after Independence, the notion of development has been fundamental in reshaping governmentalities[20] (Chandhoke 2005: 1037; Corbridge et al. 2005: 16; Kalpagam 2006: 98) – and the Indian 'developmental state' is an outcome of this. The developmental state is most poignantly characterised by its "will to improve" (as Li 2007 has analysed for the case of Indonesia). In India, this project of improvement included maintaining an image of the state as an "essentially technical instrument" (Prakash 1999: 198) operating through rational planning while appropriating it for the nationalist purpose. Government focussed on fighting poverty (Corbridge et al. 2005: 47-84), and exerted a heavy influence on people's identities – be it through more inclusive notions of citizenship (Chandhoke 2005: 1037), or through the notions of newly created categories such as Below Poverty Line, Scheduled Tribes, Schedules Castes, and Other Backward Castes (Kalpagam 2000: 51-52; Corbridge et al. 2005: 47). The latter designation alone, 'backward castes', shows how ideas of progress – coming 'forward' – were forged in the domain of the state and through its institutions. The same concept of progress was further inscribed in practices of population control, when "the small, modern" (Hodges 2004: 1162) family was promoted as the way forward, while at the same time figuring as a site for governing through cooperative "partnerships with the state" (ibid.).

Most recently, India's attempt at governing through the rationality of environmental protection and management has been analysed by Agrawal (2005) who documents how communities' resistance to restriction of access to forests under colonialism has gradually given way to community-led forest management in the region of Kumaon. This change, according to the author, is predominantly due to the production of "environmental subjects" which "come to care for, act, and think of their actions in relation to something they define as the environment" (ibid.: 164). Birkenholtz (2009) emphasises how this production has been only partially successful amongst farmers in Rajasthan that are encouraged to embrace groundwater saving practices. Finally, Ghertner (2010b) illustrates how the language of environmental protection is used to delegitimise slum residents' use of space and subsequently legitimise evictions in the Yamuna bed in Delhi. I will come back on these insights when the shifting governmentalities with regard to waste water and informal settlements will be dealt with in detail in parts IV and V.

Given the diverse relationships between the state and its citizens, scholars argue that the project of the modern state and its "production of homogeneous citizens" (Kalpagam 2006: 99) has not

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[20] See also the seminal work of Ferguson (1990) for an analysis of the discursive power of this term in the Southern African context.

reached the whole of society: "margins" (ibid.) are left, and spaces exist in which the state is an absence, rather than a presence (Corbridge et al. 2005: 185). The modern project then is not a totalising one but has an inherently ambiguous character which remains open to "failure" (Redfield 2005: 66-67). It is also one, which, if facing this failure, resorts to practices of punitive or disciplinary character in order to rule (Ghosh 2006: 525-26). This is a phenomenon which will be observed with respect to governance in informal settlements (see part V).

Keeping this fragility in mind, it turns out that the concept of governmentality leaves us with a raised awareness for the historical legacies and singularities of governing waste waterscapes in informal settlements today. It enables us to look at the present from a perspective of discomfort (Foucault 1997: 135) – while at the same time drawing attention to further refinements of discourses.

To sum up, governing waste water designates the attempts to control the interactions various actors entertain with waste water. These attempts are predicated upon waste water-related governmentalities, 'truths' about how to govern waste water in an acceptable way. In a strict sense, governing can only be directed at human beings: it is their conduct that is being directed in a certain way (Foucault 2007: 122). But because governing centres on humans in their relationship with "things", governing practices can not only be aimed directly at someone's conduct; they might also consist in (re)arranging these "things", in order to indirectly change the relationship between them and the governed subject (ibid.: 99). For the case study, this means that relationships people entertain with waste water cannot only be controlled through direct interventions in what people do, but also indirectly through an 'art of arranging things'. Changes that the state effectuates in the physical environment of the city or the informal settlement can therefore be understood as attempts to manipulate citizens' behaviour. But not always do citizens act as governable subjects. The tensions that ensue will be illustrated in detail in the empirical chapters.

In the next section, governing will be discussed in more detail as a social practice. To do so, I will introduce four dimensions of governing practices, and four types of regimes of practices (Dean 2010).

6 Practices of governing waste water

Following the elaborations of section 5.1 of this part, governing waste waterscapes is a social practice. Governing practices in the waste waterscapes are conceptualised as those practices by

which actors try to 'conduct' each others' waste water-related 'conduct'; these practices are characterised by power relations. The following research questions can be drawn from this: **What are the practices of everyday waste water governance found in informal settlements?** In order to answer it, governing practices need to be analysed in a systematic manner.

6.1 The four dimensions of a regime of practices

Governing practices align themselves with governmentalities to form apparatuses which are termed *dispositifs* by Foucault (2010:19), or regimes of practices by Dean (2010: 40). In the following, these heterogeneous regimes of practices will be discussed. Dean (ibid.: 33; ibid. 40-44) distinguishes four dimensions of any regime of practices: ways of seeing and perceiving; ways of thinking and knowing; ways of forming subjects; and ways of acting relying on techniques and technologies (see Fig. 6). It is through these four dimensions that the power of governing works.
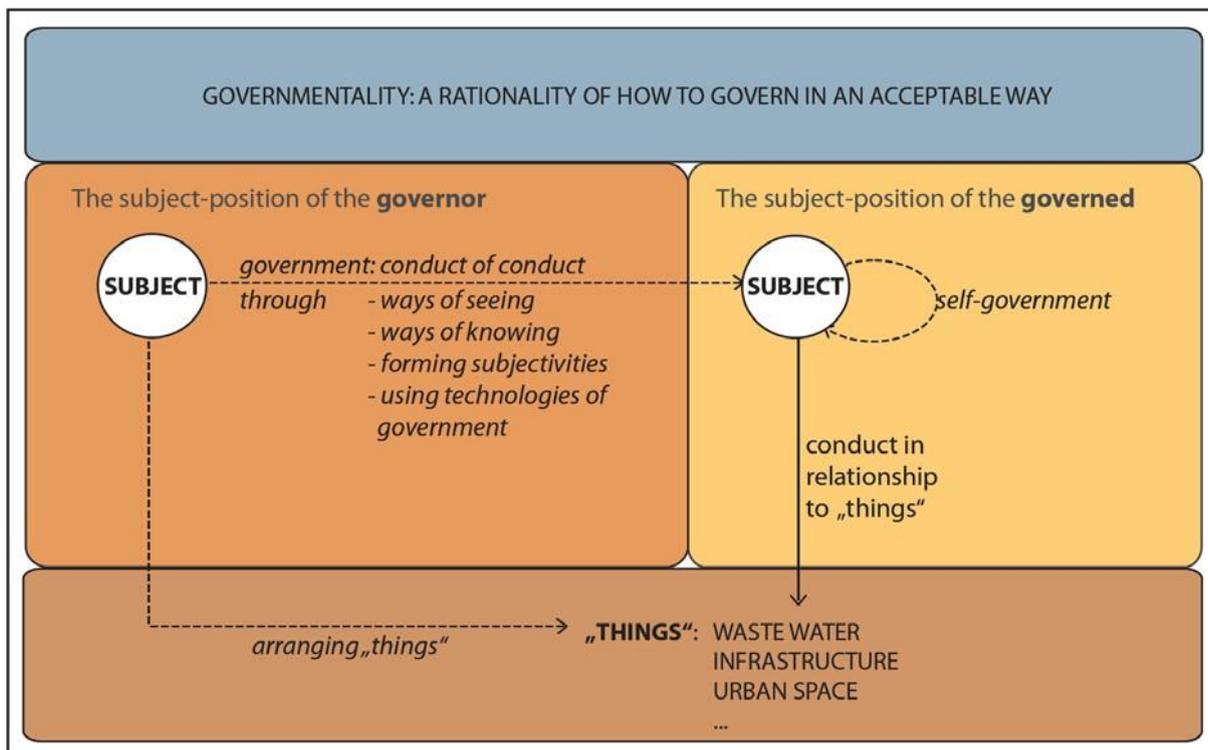
Fig. 6: Foucault's concept of government as conduct of conduct. (Draft: A. Zimmer)

6.1.1 Seeing waste water

Ways of seeing waste water point to the question how this liquid becomes visible for others and is seen as problematic or not. Different aspects of waste water might become visible: its smell, its sight, the contact with it or the organisms living in it. Waste water is also visible in different contexts – i.e. in relationship to different other identified 'problems' such as water, health, or

sanitation. Also, certain subjects' relationships with waste water come into criticism while other relationships are not. This means that certain practices are constituted as objects of government that need to be influenced, and rectified. Other practices might in contrast be ignored as they are not problematised. Ways of seeing waste water change over time, and thus have a pronounced historical dimension.

Seeing is a crucial element in practices of government in two ways. On the one hand, it is the precondition for problematisation of waste water. Something invisible cannot be a problem, and thus not become an object of government – a point that shows clearly in the case of bacteria that multiply in waste water, long time invisible to the human eye. On the other hand, seeing individuals in their relationship with waste water is required to conduct people's conduct. Ways of observing, monitoring, or displaying people's waste water-related practices is thus essential in the attempt to change them. The dimension of ways of seeing waste water therefore leads to the following questions: ***How is waste water seen by different actors? Which relationships with waste water are seen as problematic?***

Reflecting on the intimate relationship between ways of seeing and 'truth' – exemplified e.g. in the field of visibility that has opened up 'inside' human beings with the development of psychology[21] – the next dimension of practices of government comes into focus: the knowledge which is produced on objects and subjects to be governed.

6.1.2 Knowing waste water

The importance of ways of knowing waste water points to the knowledge-power nexus that builds a system of acceptability (Foucault 1997: 53). As a broader discourse, the regime of truth confers to specific information the tag of being 'true' – while other information are considered erroneous (Foucault 1996: 13-15). Knowledge production thus has to follow certain rules in order to be accepted. The systems of acceptability change over time, so that what is considered truth is something which is historically situated (Rabinow & Rose 2003: xii).

The knowledge dimension of governing waste water cannot be distinguished neatly from what Foucault terms governmentality, as ideas about how to govern form part of this dimension (Dean 2010: 42). Yet, government also produces new forms of knowledge about people and waste water in order to be able to govern (Kalpagam 2006: 85; Foucault 2007: 273).

The first step is the production of knowledge on human beings, addressed above: people are constituted as having specific characteristics; as being rational, or being driven by their

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[21] In fact, Foucault relates modern understandings of governing to the development of all social sciences, as those sciences which seek to understand human practices.

subconscious; as being in need of moral guidance, or as having the ability to govern themselves. Foucault (2010: 252-53) makes it a point that it is this knowledge that renders subjects governable: the model of the *homo oeconomicus*, for example, as seen in section 5.2 of this part, worked as a "grid of intelligibility (…), the surface of contact between the individual and the power exercised on him [sic]"; the model allowed thinking about how to influence this rational agent. Humans have also started being considered as part of a population – an entity with biological and sociological characteristics, and with parameters of public health such as percentages of deaths due to contaminated water, or number of cases of water-related diseases (Foucault 2007: 104). The knowledge about human beings then spurs further production of truths: For instance, with the crystallisation of 'population' as a new visible entities of the modern state, tools like censuses, modern statistics and mapping developed as means of steering the course of this entity (Kalpagam 2006: 79; Dean 2010: 127). Health parameters lead to the inquiry of the role of faeces and waste water in spreading infectious diseases. More recently, the 'discovery' of slums (or informal settlements) has led to the production of treaties, studies and reports on their inhabitants and their relationship with the rest of the city, including this doctoral thesis.

Next to science and research, more mundane forms of knowledge production are found to play a role in everyday practices of waste water governance, too: neighbours and communities produce narratives about each other, outsiders, and their interaction with waste water which codify knowledge in a certain way, and circulate it in conversations. Street-level bureaucrats are found to produce specific knowledge about citizens they interact with, and classify them according to groups. Different actors produce their own "situated knowledge" (Loftus 2007: 56) on their surroundings, like the waste water situation, or the environment. They develop 'truths' to explain problems which they perceive.

Knowledge production, therefore, can be appropriated by subaltern groups and individuals. Appadurai (2001: 35) shows how this is the case in Mumbai in what he calls a process of "counter-governmentality". Here, techniques such as self-surveying and mapping are used by slum residents to participate actively in the governing process and to counter claims of the state (ibid.: 34; Roy 2009: 166). At the same time, the produced data are in danger of being co-opted by the state for its own purposes of control and punishment (ibid.: 165).

The contested character of information points to the fact that ways of knowing waste water have nothing neutral or objective to them (Karpouzoglou & Zimmer 2012). Rather "there is no power relation without the correlative constitution of a field of knowledge, not any knowledge that does not presuppose and constitute at the same time power relations" (Foucault 1991a: 27;

see also Mehta et al. 2007: 32). Power and knowledge are inextricably linked; knowledge is politicised. The knowledge dimension of governing leads to the following research question: *What do different actors know about waste water? What are the contesting 'truths' they formulate about waste water problems, and other actors' relationships with waste water?*

6.1.3 Forming subjectivities in the waste waterscapes

The ways human beings form subjectivities, the ways they see and experience themselves in relation to others, are related to waste water governance, too. Government tries to shape people's outlook towards their own identity and make people identify with certain descriptions and narratives (Dean 2010: 43-44). Encouraging forms of subjectivities enables governing individuals to problematise others' waste water-related practices, and therefore constitute them as those whose conduct needs to be corrected, as those in need to be governed. This practice is therefore all but politically neutral. One example of forming subjectivities is Lipsky's account (1980: 9) of how clerks teach people to be – and feel like, or adhere to descriptions of – citizens, discussed in this part, section 3.2. Problematising subjectivities opens up – see the first dimension – a field of visibility inside the governed subjects.[22]

Foucault (1997: 177) points out how the practices of subject formation are tied to forms of knowledge, referring back to the second dimension of regimes of practices. They are based on knowledge that people have about themselves and that they communicate about themselves to others (ibid.; Foucault 2007: 183); but they are also related to the knowledge about human beings that is produced in wider discourses, as individuals accept or reject the interpretations offered to them by society (Füller & Marquardt 2009: 85). People are, according to Dean (2003: 123) "fitted out with identities which make them suitable to be ruled in a certain ways with specific techniques". If people accept suggested subjectivities, they might become critical about their own waste water-related practices and start to change. But Dean's formulation seems to be too passive – insights from the literature on the everyday state show that individuals rather negotiate multiple identities in accordance with different interactions they are in (Corbridge et al. 2005: 152; Hupe & Hill 2007: 284). People can therefore assume different subject-positions in varying situations. The contested attempt at shaping identities is thus at the heart of governmental practice as a practice producing governing or governed, and governable subjects (Foucault 2010: 12; ibid. 252), and the empirical data will illustrate this point.

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[22] This is the process Foucault (1997: 176) tries to analyse under the headline of the genealogy of the modern subject.

The following research question flows from the subjectivity dimension of governing: ***Which subjectivities are encouraged in interactions between the state and inhabitants of informal settlements? How do these subjectivities work towards influencing people's waste water-related practices?***

6.1.4 Using technologies of government

Governing waste water is not possible without using specific technical and practical means. Foucault's use of the term technologies of government – and the way it is employed by later scholars –, is, however, fluid and little precise. The term has shown a certain tendency to encompass different meanings and to "multiply(…)" (Dean 1996: 53). Dean (2006: 21) defines technologies as the "practical and technical domain" of governing; but also as the "know-how", or the "art" of governing (Dean 1996: 58-59). They are necessary to act on people's conduct (Dean 2010: 42), to "translate thought into the domain of reality" (Miller & Rose 1990 in Dean 1996: 49). In brief, highlighting the technological dimension, Foucault stresses the material base of governing practices.

For the use of this thesis, technologies of government will include two aspects: First, in the dimensions of seeing and knowing waste water, we have noted that material devices that help gathering data on waste water, tools for calculation or knowledge administration are necessary to establish fields of visibility and produce truths. These tools influence knowledge production and have their own effect of power so that they are not to be conceived of as mere passive translators of reality (Mattissek 2009: 6). The first research question thus is: ***Which devices are utilised in governing waste water?***

Second, material practices that directly intervene in other people's relationship with waste water will be dealt with under this notion. To be considered a technology of government, however, Dean (1996: 64) emphasises the importance of practices to cross certain "thresholds", defined as "provisional indicators that (…) government has become technological". Practices might, then, be part of larger assemblages of technical and practical elements; they might be exercised in a systematic way; technologies of government also develop "qualitatively different" forces from single practices, and finally, they are oriented towards a "strategic rationality" (ibid.: 65) that aims at attaining a specific conduct of the governed. The second research question thus is: ***Which specific powerful patterns of intervening in other people's relationship with waste water or waste water infrastructure are apparent between state representatives and inhabitants of informal settlements?***

6.2 The four types of regimes of practices in the waste waterscape

Section 6.1 of this part elaborated on four dimensions of any regime of practices. But four different types of regimes of practices of government can be identified, too, which are broadly related to the shifts in governmentality discussed in this part, section 5.2. Each regime shows a specific way of seeing, of knowing waste water and is characterised by the use of certain technologies and attempts to form particular subjectivities in the waste waterscape.[23]

While Foucault himself worked on two major regimes of practices – discipline as a tool for regulating individual humans' behaviour (Foucault 1991a) and bio-power for regulating whole populations under a liberal governmentality (Foucault 2010; see also Lemke 2007: 49) – the concept has been extended and substantiated by several scholars in the course of neoliberalism (Swyngedouw 2005; Dean 2010). Drawing on this body of work, I distinguish between a regime of discipline, of performance, of agency and of citizenship in waste water governance.

In a *regime of discipline* (Foucault 1991a), subjects and their interactions with waste water are made visible through – ideally – thorough, total and perpetual observation, i.e. through surveillance. The extreme version of this is described by Foucault (ibid.: 200) using the image of the panopticon. But practices which align themselves to this logic also include patrols by Sanitary Inspectors, or surveys counting how many people living where have produced how much waste water. This vast field of visibility rests on specific knowledge about actors which is used to discipline them; at the same time surveillance gives the opportunity to gather new information. Therefore, knowledge production and control of deviant practices happens simultaneously in regimes of surveillance.

Discipline has developed sophisticated technological instruments such as distributing individuals in space, regulation of time, and techniques of classification to regulate individuals (ibid.: 141-45). The constant observation in disciplinary regimes controls people directly as well as indirectly: on the one hand they are watched and punishment can be executed in case of deviance – on the other hand the fear of this punishment leads people to discipline themselves in an act of anticipatory obedience. Discipline therefore not solely depends on domination, but equally rests on governing through subjectivities, as well as self-government (Foucault 1997: 182).

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[23] These regimes have been termed governmental technologies or technologies of government by Foucault himself, as well as by others (Foucault 2010: 42; Cruikshank 1994; Swyngedouw 2005; Dean 2010: 196-197; Foucault 2010: 41). Yet, Dean (2010) points out that this term better be reserved for special technical mechanisms of governing, as seen in section 6.1.4. In the following, the term technologies will therefore be avoided (except when referring to authors employing it), and I will continue to speak of regimes of governing practices instead.

Neoliberal forms of discipline do not rely on constant visibility of the actors to be controlled. Rather, they take the shape of a *regime of performance*. Instead of observing and disciplining someone's waste water-related behaviour, this regime rests upon defining clear cut parameters measuring a person's or an organisation's feats in certain time intervals. Reducing amounts of waste water that are discharged in a river untreated, for example, or lowering the number of deaths due to exposure to waste water can represent such parameters. Contrary to regimes of discipline, the focus of visibility in regimes of performance is therefore on the output or result, and not on the chain of actions which leads there (Swyngedouw 2005: 1998). At the centre of regimes of performance are subjectivities where actors identify with their performance; they become what is designated in German by the relatively new word 'Leistungsträger', a bearer of performance – before anything else.

For regimes of performance to work, goals need to be identified, and information on actors' performance needs to be easily available. Additionally, data have to be collected in certain formats to enable comparison and ranking of different actors. Effort is thus put into gathering data according to a standardised system and in communicating results at higher levels in the hierarchy. Benchmarking is the most prominent means introduced to judge whether an individual or agency is 'underperforming' or not (ibid.: 1998). This assessment is then supposed to be followed by acts of self-government leading to the desired behaviour.

The more indirect regimes of government are, the more they rely on this self-conduct of individuals (Dean 2003: 117). Conducting people's waste water practices, then, takes place mainly through subjectivities – the understanding of oneself which it creates in individuals or groups (Dean 2010: 87). One of these regimes is the *regime of agency* (Swyngedouw 2005: 1998; Dean 2010: 196). It rests on the concept of individuals endowed with agency, which in turn means that they bear responsibility for their actions (Swyngedouw 2005: 1998). According to its interpretation, phenomena such as exposure to waste water in residential areas, or the pollution of a river have to be explained by a lack of active engagement of residents and authorities. Accordingly, they are constructed as unable to use their capacities in a sufficient manner or unable of satisfying self-regulation (Dean 2010: 204). The visibility of this regime therefore centres on humans' abilities (or inabilities) to govern themselves and others. It is on their subjectivities – do they feel empowered? do they feel responsible? – and on their actions and inactions.

Even major policy change falls into citizens' responsibility according to this regime. The World Report on the Urban Future 21 encourages e.g. the poor in developing countries to put political pressure on the state to accept their informal activities, as they are productive and potentially curb the need for welfare mechanisms (Jessop, B. 2002: 468). In Mumbai the delivery of sanitation services is understood to depend on active community participation (McFarlane 2008b: 89). But regimes of agency also work at the level of entire cities. The nation state, in crisis because of globalisation, constructs a new image of the city as an entity able to cope with the new dynamics on the ground (Jessop, Bob 2002: 466). This translates into a push for decentralisation and subsidiarity, as seen in the 74th Constitutional Amendment in India, discussed in part I. The flip side of this development is the increased responsibilities cities bear: according to its logic, "urban poverty results not so much from capitalism as from ineffective local administration" (Jessop, B. 2002: 468). Similarly, the reason for exposure to waste water, and river pollution is located in failure of municipal governance.

Awareness campaigns for greater responsibility, empowerment and participation have become major technologies of government in this context. Although used by the nongovernmental, not-for-profit sector as well, they are not necessarily related to emancipation. Rather, by empowering the individual, governments seek to attain own ends and make, to put it bluntly, 'actors' their instruments (Bang 2003b: 247; Dean 2003: 121; 2010: 86). For this to work out, the governed should learn to understand themselves as able to manage their own risks, to change their situation and should overcome mentalities of dependency (Miller & Rose 1990 in Dean 2010: 77; ibid.: 197; Jessop, B. 2002: 459). If citizens fail to respond to techniques of agency and are placed in the category of those not able to govern themselves, the use of coercive means to achieve certain goals can be constructed as justified (Dean 2010: 204).

Intimately linked to regimes of agency are *regimes of citizenship*. In this regime, change in human beings takes place with reference to norms such as "civility and civicness" (Roy 2009: 160), in short: what people define as a good citizen. The visibility of this regime of practices is therefore very much on people's subjectivity: it investigates people's understanding of their role in the community, of the way they identify (or do not) with their locality, city or state, and which norms of citizenship they follow. These norms shape people's understanding of their role in the city as well as expectations from its citizens the state will be able to voice and enforce. With respect to waste water, these can include e.g. the use of latrines instead of practicing open defecation, or the disposal of solid waste in dust bins instead of in storm water drains.

Expectations like these are taught in interactions between street-level bureaucrats and those seeking waste water services from them (Lipsky 1980: 61).

Moreover, regimes of citizenship spell out the accepted behaviour of citizens in relationship with the state. Here, expectations are two-fold. On the one hand, citizens are supposed to respect the state authority. They have to be deferent vis-à-vis state representatives (ibid.: 62). On the other hand, the image of a responsible citizen who is conscious of his or her own agency is promoted – and this is where regimes of agency and regimes of citizenship interlock (Cruikshank 1994).

This regime is seen to be on the rise as according to neoliberal thought, cities' success in the globalised economy depends on the creation of "active and productive citizens" (Jessop, B. 2002: 465) – a trend very visible in Delhi's governance reforms (see part I). The goal is that "citizens are to become self-managing, to enter political participation, and to demand action from governments" (Dean 2010: 199). These changes would then also facilitate the achievement of other neoliberal aims: self-managing citizens allow slimming down the state apparatus.

Regimes of practices are, of course, not coherent and delimited regimes. Instead they interlock, and enforce each other (Mattissek 2008 in Füller & Marquardt 2009: 93). As, for example, agency is invested in individuals, they need to be controlled through technologies of performance to oversee whether they use their capacities optimally and carry out the (self-)governing as intended. In this way, disciplining takes place indirectly (Dean 2010: 202). Also, if a state representative has clear benchmarks to attain, responsiblised citizens can take over the task of evaluating his or her performance (Dean 2010: 198). For the analysis of the governance of waste waterscapes in Delhi's informal settlements, the following question thus needs to be answered: *Which types of regime of practices are at work to govern citizens' and state representatives' interaction with waste water?*

The following section integrates the developed research questions into a framework for analysis.

7 A framework for analysis: The production of waste waterscapes in Delhi's informal settlements

The last section of this chapter intends to pull the different strings together that have been touched in the previous sections. The aim is to present a framework for the geographical analysis of the waste waterscapes in Delhi's informal settlements that will be undertaken in the following chapters (see Fig. 7).
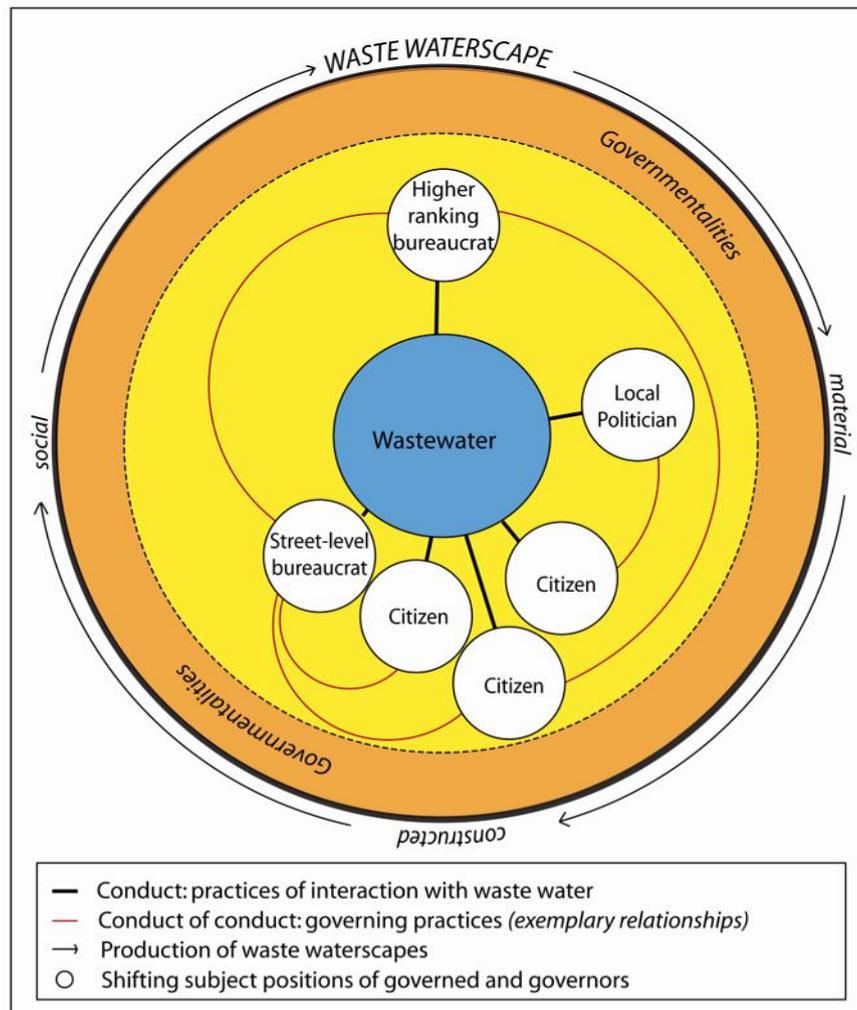
Fig. 7: The production of waste waterscapes: A framework for analysis. (Draft: A. Zimmer)

The waste waterscape is conceived of as a material, constructed and social space, as elaborated on in section 1 of this part. Following the perspective of Smith (1990), this space is particularly interesting in terms of the processes of its production. The central research question of this thesis therefore is: ***How are the waste waterscapes of Delhi's informal settlements produced?***

To operationalise this question, the concept of governance has been used in section 2 of this part. The research question has therefore been reformulated as: ***How are the waste waterscapes of Delhi's informal settlements governed?***

The following sections have developed an understanding of waste water governance that is predicated on practices: In section 3 of this part, the literature on the everyday state drew the attention of the analysis towards the day-to-day interactions between state representatives and citizens. Following this, section 4 of this part defined everyday governance of waste waterscapes as a negotiation process around waste water that takes place in these day-to-day interactions.

While the governance literature elaborates on different types of interactions, it has no theory on power relations to offer, a vital flaw in my opinion. In section 5 of this part, Foucault's works on governmentality was thus used to look into the ways governmental power works in multiple arenas and relationships. Accordingly, governance interactions can be analysed by looking into different actors' governing practices. Governing practices in the waste waterscapes were conceptualised as those practices by which actors try to 'conduct' each others' waste water-related 'conduct' in a powerful way. These practices were shown in section 6 of this part to have four dimensions: seeing and knowing waste water, forming subjectivities and using technologies of government in the waste waterscape. Together, they form a regime of practices. Four types of regimes of practices were introduced in order to understand how the shifts in governmentalities are related to changing practices.

This conceptualisation of the process of production of waste waterscapes raises four subordinate research questions, presented in the following.

7.1 Governmentalities in Delhi's waste waterscapes

Governmentalities, as discussed in this part, section 5, designate an acceptable way of governing. The first subordinate question thus is:

A) What are the governmentalities currently at work in Delhi? (see part IV and V)

To answer the main research question we need to analyse first which ways of governing waste water in informal settlements are currently accepted in policy-making circles in Delhi. This analysis is based on a review of grey and secondary literature. In part IV, a short overview of the historical development will be given to show how waste water evolved as a problem of urban governance. Through a discussion of current visibilities of and 'truths' on waste water in international debates and in Delhi, and pertaining policy interventions, the chapter analyses how waste water is problematised, and whose waste water-related conducts are in the focus of governance reforms.

In part V, the analysis narrows down to the question of waste water in informal settlements. In order to do so, informal settlements are embedded in those policy discourses which characterise them as a problem. Discourses on two types of informal settlements, JJ Clusters and Unauthorised Colonies are sketched out to identify which governing practices are characterised as acceptable under current governmentalities. Finally, interventions that aim at solving the perceived 'problem of informal settlements' will be discussed.

7.2 Everyday governing practices in Delhi's waste waterscapes

After this analysis of governmentalities, the study focuses on two research areas that represent two types of informal settlements. The empirical interest lies in answering the second subordinate question:

B) What are the practices of everyday waste water governance found in informal settlements? (see part VI and VII)

The aim is to analyse everyday governing practices between state representatives and inhabitants that work towards governing people's interaction with waste water.

To do so, parts VI and VII begin with elaborating the practices that produce the material waste waterscape in the informal settlement: settling on the land, building and using waste water infrastructure, and securing waste water flow. From a Foucauldian perspective on government, these practices constitute the conduct of subjects, the way subjects interact with waste water. They constitute thus one of the relationships of humans with 'things' governmental power comes to bear on. If households dispose of their waste water in storm water drains, this is a practice state representatives might want to prevent. If scavengers refuse to clean the drains, this is a practice citizens will complain of to their political representative.

Following this, governing practices of residents and state representatives will be analysed. These governing practices form the 'conduct of conduct' – the intent to direct the other's interaction with waste water. Based on the elaborations in section 6 of this part, four dimensions of governing practices will be studied with the help of the following questions:

- *How is waste water seen by different actors? Which relationships with waste water are seen as problematic?*

- *What do different actors know about waste water? What are the 'truths' they formulate about waste water problems, and other actors' relationships with waste water?*

- *Which subjectivities are encouraged in interactions between the state and inhabitants of informal settlements? How do these subjectivities work towards influencing people's waste water-related practices?*

- *Which devices are utilised in governing? Which specific powerful patterns of intervening in other people's relationship with waste water or infrastructure are apparent between state representatives and inhabitants of informal settlements?*

Following this, a synthesis of the described governing practices will answer the question:

- *How do these four dimensions come together in a regime of practices to govern citizens' and state representatives' interaction with waste water? Which types of regime of*

practices are at work to govern citizens' and state representatives' interaction with waste water?

While answering these questions, special attention is given to identify where ways of seeing and understanding waste water diverge; similarly, it is of interest to enquire in how far residents of informal settlements accept or reject subjectivities suggested to them. The focus is thus not on a homogeneous set of practices, but rather on the diverging and conflictive character of waste water governance. This character is also apparent when attempting to understand governing practices in terms of regimes of discipline, performance, agency, or citizenship. Accordingly, the governance of waste waterscapes is no straightforward process of designing infrastructure or shaping waste water-related practices: it is a highly political process in which power relations are inscribed at every moment.

7.3 Discussing the production of waste waterscapes in Delhi's informal settlements

Research question B) will be studied in two different types of informal settlements. This allows a juxtaposition of the results in part VIII. The third subordinate question addressed here is:

C) What are the commonalities and differences in everyday practices of waste water governance in JJ Clusters and Unauthorised Colonies?

It is assumed that major differences exist between the practices of governance in both types of informal settlements. The question about commonalities and differences in everyday practices of waste water governance will be looked at with regard to residents as well as state representatives in the wards and zones.

Parts IV-VII will be reviewed through an investigation of both governmentalities on the one hand, and everyday governing practices in informal settlements on the other. This investigation turns to the fourth question:

D) What is the relationship between governmentalities and everyday governing practices in informal settlements?

This relationship is not assumed to be straightforward: governmentalities are not simply translated into practices, nor do practices necessarily refer back to governmentalities. Part VIII therefore attempts at identifying overlaps and fault-lines between notions of how to govern waste water in an acceptable way, and visibilities, knowledge, ways of forming subjectivities and the use of technologies of government that play a role in everyday interactions of street-level bureaucrats and local politicians with residents.

After analysing these waste water governance processes, the thesis will return to the research question on the production of space. It is through the comparison of both research areas, and of both governmentalities and everyday practices of governance, that the space-producing effects of waste water governance will be discussed. These refer to the production of the material, the constructed, and finally the social space of the waste waterscape in Delhi's informal settlements. Before attempting to answer the research question of this thesis, however, it is essential to discuss the methodology used to investigate the raised issues.

III Methodology and Fieldwork

In the course of doing this PhD, I adopted an open approach towards research and methodology, being guided by preferences for a constructivist paradigm in the social sciences (Meier Kruker & Rauh 2005: 14; Reuber & Pfaffenbach 2005: 110). This openness stimulated gradual adjustment of the theoretical framework with which to understand observations and interviews.

I entered the field with the concept of the waterscape; only after the first fieldwork I started concentrating on the ideas on the everyday state, and slowly engaged with the governance literature. After the second fieldwork, finally, Foucault's concepts were added to grasp what I had seen in the field. The approach was thus far more inductive than deductive (Herbert 2000: 552). The theory chapter therefore is – and this methodological as well as the empirical chapters will be – the result of a difficult process of "vibrant, recursive conversation between theory and data" (ibid.: 564).

Accordingly, the methodology used to make sense of the information received an overhaul to accommodate Foucault's genealogical approach (Tamboukou & Ball 2003: 19-20). This late adjustment was possible, because "doing genealogy", as Tamboukou & Ball (ibid.: 15) note, "is almost inseparable from writing genealogy". Nevertheless, difficulties of combining social constructivism and Foucault's genealogical approach arose because qualitative methods normally fall into a hermeneutic approach that seeks to uncover meanings (Meier Kruker & Rauh 2005: 23; Reuber & Pfaffenbach 2005: 114). In contrast, Foucault's analytical methodology lies, according to Dreyfus & Rabinow (1986), "beyond structuralism and hermeneutics". This means that the interpretative way in which I first looked at my data had to be complemented by other methods, elaborated on in section 2 of this part. Including Foucault's concepts also stressed the importance of secondary data (see this part, section 3.4) in order to unveil shifting discourses and different problematisations of waste water and informal settlements in a larger historical perspective.

1 Foucault's genealogical approach for the analysis of waste waterscapes

A Foucauldian methodology is based on two procedures – archaeology and genealogy – that come together under the umbrella of problematisations. To recall, problematisation is the central piece within Foucault's methodological approach (Lemke 1997: 341) and is based on showing that e.g. current forms of governing waste water are all but evident (Foucault 1997: 54; Dean 2010: 31). Problematising means scrutinising from a distance, making something look

awkward and unfamiliar. While this perspective is something that should be common to all research projects, Foucault lends to problematisations a specific meaning. According to him, problematising allows analysing phenomena through the relationships between forms of thought, and forms of practices (Lemke 1997: 341). Looking at these relationships puts questions of 'how' into the foreground of the investigation (Foucault 1991b: 47), in my case: how are the waste waterscapes in Delhi's informal settlements governed?

Archaeology is the main methodology Foucault adopts in his early works (Dreyfus & Rabinow 1986: xx). Through it, he tries to understand the nexus between knowledge and power that works towards the acceptability of certain phenomena and situations (Lemke 1997: 50-51). He looks at discursive formations in order to analyse what it means for certain statements to have appeared (Dreyfus & Rabinow 1986: 51). In going about deciphering this archaeology, Foucault moves from discovering the point of acceptance of a phenomenon towards analysing what makes it acceptable (Foucault 1997: 53). At the same time, acceptability is never total: contradictions exist and knowledge is contested so that struggles about this acceptability are the focus of analysis (ibid.: 54).

Genealogy is a methodology Foucault turns to in his later works (Discipline and Punish and The History of Sexuality) (Dreyfus & Rabinow 1986: xxi). This approach includes a major reversal of the weight given to discourse: Foucault now understands the discourse to be part of a multitude of regulative practices that can be discursive as well as non-discursive (ibid.: 103). Genealogy looks into the causes for the appearance of a phenomenon or situation. It refuses the assumption of a principal root cause; instead it attempts to understand the conditions for the appearance of the studied phenomenon made up by a multitude of elements (Foucault 1997: 57). This entails isolating these different elements through which power works. These elements constitute a varied gathering: technologies and "micropractices" (Dreyfus & Rabinow 1986: 185; see also Füller & Marquardt 2009: 97) are named here, as well as "relationships of interaction between individuals or groups" (Foucault 1997: 57), or "subjects, types of behaviour, decisions and choices" (ibid.). In a second step, the interplay between these elements is analysed (Dreyfus & Rabinow 1986: 175; ibid. 194). Certain practices of governing, for example, or waste water-related practices, are therefore to be investigated in the context of their "complex interconnections with a multiplicity of historical processes" (Foucault 1991b: 75). Ultimately, therefore, the genealogical procedure never reaches the point of theoretical saturation aimed at in other qualitative approaches (Tamboukou & Ball 2003: 14). This methodological approach has been called "interpretative analytics" by Dreyfus & Rabinow (1986: 104). Its interpretative

character, however, is not expressed in a hermeneutic search for the depths of meaning in cultural practices. Rather, it interprets the "coherence" (Dreyfus & Rabinow 1986: 124) of practices by taking an "overview from higher and higher up" (ibid.: 106-107). This distancing from practices is realised through problematisation; and in the overview, the history and organisation of practices become apparent (ibid.: 124).

Following this interpretation, an analytical approach asks: "what is the effect of what they are doing?" (ibid.: 123). Foucault holds that interconnected elements work towards advancing power relationships – power gets hold of "more and more dimensions of social life" (ibid.: 192). The different elements such as discourses, practices and technologies have therefore a social function (ibid.: 143). Yet, Foucault insists, the coherence between these elements is not totalising – it is rather slipping between contexts, and therefore remains fragile. In a similar vein, Füller & Marquardt (2009: 96) rightly caution against overlooking the empirical richness of elements and effects of power. Power relations, they remind the researcher, are always frail and stir resistance. Plurality and opposition should therefore be taken seriously in the analysis.

2 Which methods to choose?

But how can the researcher realise this ambitious methodological programme? Foucault's attention to concrete localised practices (ibid.: 98) fits well with the decision to undertake an empirical study. In order to study waste waterscapes in an empirical way, therefore, Delhi was chosen as a field site for reasons laid out in part I. To render justice to the diversity of waste waterscapes, two informal settlements were selected as case studies (Mayring 2002: 42; Lamnek 2005: 313; Reuber & Pfaffenbach 2005: 119). This decision facilitated analysing the obtained text (in the form of notes, interview notes, and documents) and pictures (such as photos, maps, and results of participatory, visual methods) in relationship to its local contexts (Flick 2004: 30; Mattissek 2005: 207). The empirical research has thus been carried out predominantly in two residential areas, one *jhuggi-jhompr*i Cluster (JJ Cluster), and one Unauthorised Colony. Besides, visiting several government offices allowed setting the findings of the colonies into the broader picture of the city, so that elements of a multi-sited ethnography have been part of the research process as well (Marcus 1995). All in all I spent 12 months in Delhi for empirical research.

2.1 Choosing research areas

In the literature on urban sanitation, informal settlements are invariably problematised as areas of greatest concern – which moreover receive least attention by political leaders (Ali 2003;

Chaplin 2007: 6; Black & Fawcett 2008: 39, see also part IV). While some authors lump all kinds of informal settlements together, other suggest that significant differences exist in the entitlement to public infrastructure and services of different categories that fall under the concept of slum in India (Banerji 2005: 5). In part I, I have mentioned that JJ Clusters increasingly face eviction and destruction since the new Millenium. In contrast, Unauthorised Colonies are in the process of getting regularised. Interested by this differential development, I decided to do a comparative study between one JJ Cluster and one Unauthorised Colony. I assumed that governance practices would be very different due to the distinct relationships to the city and its authorities.

In February and March 2008, I came to Delhi in order to choose my research areas. This search took me to 22 informal settlements in the whole of Delhi where I conducted informal interviews and observed the waste water situation. First attempts at identifying suitable areas with the help of Delhi Jal Board[24] did not prove fruitful, so that my visits were soon oriented by the Eicher Map indicating JJ Clusters, and with the help of the Delhi Development Authority's list of Unauthorised Colonies having requested regularisation (DDA no date). Assistance was also provided through the Centre for Science and Environment, and a field visit with the NGO Foundation of Development Research and Action was helpful. Criteria for the selection of study sites were discussed at length with these practitioners as well as experts from the Department of Geography, Delhi University, the Heinrich Böll Foundation, and colleagues at home. Field notes were used to keep track of basic information regarding the infrastructure and the relations between citizens and their Municipal Councillors as well as within the settlement.

A first important point for selection consisted in choosing a JJ Cluster that was listed,[25] and where a majority of residents had received tokens.[26] This provided for a certain minimal security of tenure and stability. Also, I decided to choose relatively old settlements. Both, relative security and age combined, it was assumed, would ensure that negotiations around infrastructural upgrading and waste water services took place, as inhabitants were settled and had made the areas their homes, and minimal entitlement to services existed. Since I wanted to compare two different types of informal areas, I had to keep a maximum of other factors identical. I finally settled on two areas which were of the same age (from the early 1980s onwards) and had about the same size (around 800 households). Both areas were not connected to the sewer line and discharged their waste water through storm water drains, so-called *naali*.

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[24] Delhi Jal Board is the Delhi Water Board, under whose jurisdiction the sewer network is.

[25] The Delhi Development Authority distinguishes between listed and unlisted slums. Only the former are officially entitled to minimal state services, see part V.

[26] So-called V.P. Singh tokens were given to inhabitants of JJ Clusters in the early 1990s as a proof of residence in the course of resettlement policies (Ghertner 2010a: 191).

Also, both areas had a problem with the waste water outlet. While in the JJ Cluster the bigger drain towards which the *naali* led was clogged, in the Unauthorised Colony water gathered in an open low-lying area. Stagnation was thus common in both areas. Since inhabitants had to invest time again and again to end stagnation, the waste waterscape was highly contested – conflicts with the political representatives were apparent and quarrels with municipal scavengers were the order of the day. These conflicts proved that citizens problematised the waste waterscape and this assumably in a different way than state representatives – a fact that would serve me as entry point into the analysis.

2.2 Choosing respondents

Since I was concerned with the micro-dynamics of governance, individuals and groups of neighbours were the basis of my investigation. On the side of officials, respondents were easy to identify: I spoke with the political representatives at Municipal and State level; and I mainly interviewed staff of the Department of Environment Management Services, responsible for cleanliness and scavenging, and the Slum and JJ Department, both of the Municipal Corporation of Delhi. Through research I became aware of the different hierarchical levels, so that I conducted interviews according to my growing knowledge. The full list of interview partners is shown in appendix I.

In the communities, the process was more tentative. Random sampling at the beginning was substituted by theoretical sampling as time went by (Meier Kruker & Rauh 2005: 55; Reuber & Pfaffenbach 2005: 152). At first, I randomly spoke to whoever was willing to give their time for an interview or informal chat. After understanding the inner structure of the settlements better, I decided to pick respondents from each of the different regional, caste, and religious groups in the JJ Cluster. Since the different groups had different occupations, this included structuring the sample according to economic criteria, and partly education. After my visit in the rainy season, I decided focussing my research more on those areas that suffered most from overflow and stagnating waste water, following the assumption that greater difficulties would allow me to expand my understanding of governance practices especially by the inhabitants.

In the Unauthorised Colony, initial random sampling gave way to a procedure in which I consciously choose to interview respondents from the three different types of street – mud, brick, and concrete – in all matters. Also, some houses were buried under the current level of the street, while others had been rebuilt to match that level. Since the reconstruction of houses demanded significant investments, I assumed major financial differences between the

households and picked respondents accordingly. This assumption, while only applicable to those houses inhabited by the owners, was useful as the great majority of households did live in their own houses.[27] In the rainy season it became clear that overflow concerned mainly streets no. 14 and 15 and those living in low houses, so that I did not have to readjust my sample to gather the knowledge of the more exposed inhabitants separately. I made it a point to attempt maintaining the gender balance between my respondents. Once areas and respondents had been chosen, different methods were used to collect data.

2.3 Applying qualitative methods

The research started as an explorative venture into the waste waterscapes of Delhi's slums with the aim of "discovering something new and develop empirically grounded theories" (Flick 2004: 18, *own translation*). Quantitative methods were thus discarded.

However, methods beyond discourse analysis that are used in a Foucauldian analysis are rarely discussed in the literature (Bührmann & Schneider 2007: n.p.). Qualitative interviews as well as ethnographic observation are mentioned to be useful for understanding the heterogeneity existing beneath and besides official statements as collected in government reports etc. (Füller & Marquardt 2009: 98-99). Tamboukou & Ball (2003: 20) note that ethnographers inspired by genealogy use the same methods as ethnography in general – namely interviews, observations, fieldwork notes etc. – but make them "function in different ways" by interrogating their data differently. Yet, from a genealogist point of view, qualitative methods are not unproblematic. Interviews can be seen as part of an ongoing practice of confessions in the Western culture that aims at people's production of truth about themselves (Bastalich 2009: 1). Observation and mappings are reminders of practices of surveillance. Tools of Participatory Urban Appraisal show a proximity to technologies of agency. A critical perspective on these methods is therefore necessary to caution the researcher against their interventionist and extractive use and the power relations they create. Being aware of the technologies of government in which research is inscribed refers the researcher to an especially self-reflexive position. This reflection is, however, not alien to qualitative methods. Most importantly, it is a central piece of ethnography.

2.3.1 Ethnography

Ethnography is said to be expressed more through an attitude than through a fixed list of techniques (van Donge 2006: 183). Van Donge (ibid.: 182) claims that a lot of what ethnography actually means can be expressed through the notion of an "anthropological eye" that observes

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[27] The question of house owners and renters will be taken up in chapter VII.

its surroundings in a self-reflexive manner. An ethnographic attitude, even more than a qualitative methodology in general (Meier Kruker & Rauh 2005: 17), includes awareness about the own positionality, emotional reactions and logics (Herbert 2000: 553; ibid.: 563). Section 4 of this part bears witness to parts of this self-reflexive process. Ethnography entails an attention to everyday practices through as little invasive methods as possible, i.e. mostly through observation which can be more or less participative (Meier Kruker & Rauh 2005: 57; Reuber & Pfaffenbach 2005: 125; van Donge 2006: 180). Benefits entail being able to contrast what respondents *say* to what they actually *do* (Meier Kruker & Rauh 2005: 57).

I cannot claim to have conducted full-fledged ethnographic research during my fieldwork. However, ethnographic elements have played an important part in gaining insights. Ethnographic observations took place during my research mostly in the JJ Cluster, once my language skills had improved, and in group interviews that tended to be rather relaxed normal afternoon conversations between neighbours or family members. In these situations I enjoyed stirring what some groups seemed to enjoy doing anyways: gossiping about their neighbourhood – and I learned immensely about social relations within the areas (Jervis Read 2010: 55). In some groups, and especially in the Unauthorised Colony, however, gossiping had a very negative connotation, and especially talking to outsiders about conflicts or shameful problems like alcohol consumption within the colony[28] was seen as very bad, so that this kind of interactions did not occur there. Ethnographic observation also helped in understanding waste water-related practices and governance practices. Participation in festivals (see this part, sections 4.3 and 4.4) also provided me with opportunities of participant observation. Mostly, however, ethnographic observation was useful in government offices, as I witnessed interactions amongst staff, and between staff and citizens. Waiting time before meeting politicians could equally be used to experience how interactions with residents were structured.

2.3.2 Interviews

Despite these ethnographic elements, qualitative interviews were the most important method used (see Photo 2). In my interviews I adopted a very open style, being more interested in 'getting people to talk', rather than searching for concrete answers to pre-formulated questions. However, my styles also varied, being probably most ethnographic towards the middle of the

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[28] During a general problem ranking this lead to an old lady taking out the mentioned problem of young men gathering in the street at evening to drink alcohol with the words: "This is something we can take care of ourselves, leave it." (241109SH)

fieldwork, while insecurity in the beginning, and a looming deadline towards the end made me fall back on a more rigid interview style.

Photo 2: Stepping out of the interview situation to take a photo. Inside the house, life goes on, while a neighbour has joined the conversation. Second from left is my first research assistant, Manoj. (Photo: A. Zimmer, October 25, 2008)

They thus contained elements of informal chats, narrative interviews as well as problem centred interviews (Meier Kruker & Rauh 2005: 65-67; Reuber & Pfaffenbach 2005: 129). Interview forms can not be clearly separated (ibid.: 131). While narrative interviews ideally reduce questions to a minimum, stimulating respondents' narration, problem centred interviews are organised through a field manual that is handled in a flexible manner. If people had time and were in the right mood, narrative elements would prevail. In these situations, questions led people to narrate certain incidents, or interviewees shifted between topics, including stories on events like weddings, or problems like obtaining ration cards, getting children admitted in schools, or personal issues such as marriage, into the interview situation. Interviews nevertheless centred on the following aspects:

- life in the settlement
- waste water-related problems
- possible solutions to these problems, strategies for solutions
- public service provision
- the relationships with government staff and politicians
- the relationships with neighbours
- the meaning of citizenship, and treatment in government offices/by politicians

Some narrative interviews we conducted with respondents during the first fieldwork were complemented by problem-centred interviews in order to cover those topics left out the first time. Also, numberless informal conversations helped clarifying information and statements we received in interviews.

Interviews in the colonies were held in Hindi, except two interviews in a mixture of Hindi and English; in offices, the interview language would depend on the respondents' choice with a large majority opting for Hindi. This meant that in the beginning of my fieldwork, phases of translation interrupted the interview after every few minutes; towards the end of the fieldwork the need of translation had greatly decreased and clarifications were given after longer time intervals. Interviews were preferably undertaken inside respondents' houses in order to allow a degree of privacy. If respondents were comfortable with their neighbours, and suggested to talk outside in the semi-public space in front of houses, we would do so, mostly leading to the interviews turning into group discussions (Jervis Read 2010: 56).

Interviews were especially useful for gaining insights into ways of seeing waste water and knowledge inhabitants had developed, as they revealed which waste water-related problems were addressed, and how they were explained. Interviews also provided insights in technologies of government, when discussing how people would react to waste water-related problems. Finally, discussing respondents' understanding of citizenship and their interactions with representatives of the state allowed focussing on this aspect of their subjectivities.

2.3.3 Participatory Urban Appraisal

Participatory Urban Appraisal (PUA) is the urban sibling of Participatory Rural Appraisal (PRA) (Köberlein 2003: 62). Introduced in the 1980s and 1990s, the intention of PRA was to overcome the quantitative approach that prevailed in development practice – the so-called "tyranny of the quantitative" (Beazley & Ennew 2006: 190) – and often entailed a dominant position of the researcher/expert (Kumar 2002: 29; Brockington & Sullivan 2003: 60).

PRA was developed by a group of researchers around Robert Chambers from the Institute of Development Studies in Brighton (see among others Chambers 1994). It is mostly based on visual techniques (Kumar 2002: 44) that aim at maximum participation of the researched in the process. PRA shares with ethnography the emphasis on a respectful and self-reflexive attitude in research (ibid.: 47).

Despite high hopes in Participatory Urban Appraisal at the onset of my research I got quickly disillusioned with this approach. I felt that while people enjoyed having a 'guest' in their house talking with them (even in the form of an interview), they were wary about Participatory Urban Appraisal. They had the impression that they were supposed to do work for me, and that they did not receive any compensation for it. My budget did not allow providing material compensation, as happened in other projects (Sakdapolrak, personal communication). In this

context, Cooke & Kothari (2001) speak of the "new tyranny" of participation, criticising that participants are overburdened. As such, participatory, and seemingly empowering research can turn out to be just another tool in a regime of agency: inhabitants are expected to take active part in the research process, even though they primarily assist the researcher and not necessarily benefit in the project. Also, despite visual techniques, for some people in the JJ Cluster the degree of abstraction of rankings was very difficult to tackle; the idea of ranking certain problems outside their context seemed alien. Instead, people highlighted aspects such that e.g. mosquitoes are a bigger problem in the evening hours, or if electricity is gone so that fans cannot be used as a protective measure. Finally, conducting group exercises was impossible: First, people were busy in securing their livelihoods in different ways and there was no way of scheduling a common meeting. Second, relationships in the neighbourhoods were often tense in the JJ Cluster, and in the Unauthorised Colony, women were not supposed to 'roam around' (see this part, section 4.4). Third, in group discussions, those with the loudest voice, most affirmative personality or greatest authority would unfailingly dominate the discussion, while others kept talking at the sides, so that it was impossible for me to gather the really interesting part of the exercise – the discussions it generated. Others again, kept silent altogether. Moreover, Brockington & Sullivan (2003: 62) point to the fact that information divulged in public, and in a group gathering, seldom is politically neutral – adding an extra layer to the interpretation. As a consequence, I reduced the weight of Participatory Urban Appraisal in my research significantly, and instead, relied more on interviews. Also, the few Participatory Urban Appraisal methods I used were conducted with individuals or families (mostly leading to the head of household choosing the outcome). Some of these people did enjoy Participatory Urban Appraisal exercises, so that they offered a good entry point into discussions with them. A list of exercises carried out as well as their description are available in the appendices II and III.

The daily activity schedule was initially utilised to understand in which activities waste water is generated. The general problem ranking was used to understand how much people feel affected by waste water in comparison to other problems in the colony. The ranking of waste water-related problems was used to discuss the way waste water affects people's lives and how residents problematise this, as well as the seasonal changes that are associated with these problems. Also, strategies for resolving the named problems were discussed. In the balloons and stones exercise (Kumar 2002: 275), people's theories about factors affecting the waste water situation positively and negatively were evaluated, providing insights in waste water 'truths'. Mapping was conducted in the JJ Cluster by three respondents as a starting point for own

mapping purposes rather than as a participatory tool, but revealed interesting and unexpected insights leading to further discussion.

2.3.4 Overflow calendar, mapping and socio-economic profiling of streets

To handle contradictory information on the situation of overflow of open drains in the JJ Cluster I asked for the cooperation of a shopkeeper who had proven reliable and who sat in the worst affected street day in, day out. He agreed to hold an overflow calendar for me, in which he noted down morning and evening hours of overflow from the drains. The idea had been to continue the exercise for one whole year. Yet, after four months, the street got newly constructed, after which overflow did not occur any more. He therefore discontinued the calendar and did not resume his entries when the rainy season started (at which time I was still in Germany). However, the data provided give an idea about the amount of time people are affected by overflow.

Photo 3: Participatory mapping. One inhabitant of the JJ Cluster maps the settlement, while his friend gives an interview. *(Photo: A. Zimmer, November 05, 2008)*

In order to understand the layout of the colony and its network of drains and other basic infrastructure, mapping was undertaken. Especially in the JJ Cluster, this was a challenging exercise, much facilitated by input from participatory mapping exercises (see this part, section 4.3 and Photo 3), because no map existed here. In the Unauthorised Colony, mapping was facilitated through the layout plan that had been drawn in the process of regularisation. During the second fieldwork phase the basic map was used to map further details, such as the number of floors houses had or – in the Unauthorised Colony – the fact if houses were below ground level. Finally, thematic maps were made to localise accumulation of solid waste and areas of overflow during the rainy season. These maps have been digitalised in Adobe Illustrator.

Another exercise I introduced towards the end of my fieldwork in order to understand better whether different locations in the Unauthorised Colony and the JJ Cluster corresponded to

economic differences was a socio-economic profiling of streets in the Unauthorised Colony, and of areas in the JJ Cluster. For that, I asked which occupation the different members of the household had, and if people lived on rent or not, and mapped this information accordingly. In the Unauthorised Colony, these data were used to compare mud, brick and concrete streets. In the JJ Cluster, it was used to compare a low lying area prone to overflow, and a higher area without overflow experience where houses tended to have two storeys.

2.4 Reviewing the literature

Extensive literature review was undertaken throughout the time of the PhD. I systematically analysed publications of international agencies, such as the World Bank, World Health Organisation, UN Habitat or UNICEF. Even more important were Indian laws, and reports and policies of Indian government institutions like the Ministry or Department of Urban Development at National or State level, Central Pollution Control Board, Delhi Jal Board, and the Delhi Development Authority. At municipal level, partly unpublished data of the Slum and JJ Department and the Department of Environment Management Services were of importance. This grey literature review was complemented by a thorough analysis of literature of all social sciences that dealt with waste water and informal settlements, particularly in the Indian context, or more specifically in Delhi.

This literature review served two purposes. On the one hand, literature was screened for the purpose of gathering information and enhancing my understanding of the subject matter. On the other hand, scientific literature, and even more so grey literature and official documents were treated as part of various discourses with a specific way of problematising waste water and informal settlements. Legal documents were analysed as to the effect they have on the waste waterscapes, while at the same time furthering my understanding of information obtained through interviews especially with the bureaucracy and politicians. Grey literature as well as English language Indian newspaper clippings were used to locate local statements in the broader discursive shifts of the city. Newspaper articles, expressing relatively obviously the perspectives of Indian middle classes, provided means to contrast opinions of my (almost exclusively) working class respondents in the colonies.

2.5 Processing qualitative data

Processing qualitative data is a major challenge in that standardised procedures are rarely helpful and the heterogeneity of the material is great. Nevertheless, the theoretically informed analysis is what makes the quality of qualitative work, so that documenting the analytical step of

processing the data is of utmost importance (Reuber & Pfaffenbach 2005: 117). Processing took place in between research phases, and informed further adjustment of the chosen methods. Gathering and processing data therefore have to be understood as a circular process, even though being presented here as two separate procedures.

In a first step, qualitative data need to be pre-processed; in my case I chose to note down observations in the form of field notes. Interviews were documented in the form of a record (ibid.: 185). These records were written down in English after translation by my interpreter, with more and more literal Hindi expressions being noted down with time to achieve more originality of the text. The fact that interviews were conducted in Hindi helped in taking a maximum of notes in the process of the interview between the phases of translation, so that protocols can claim to be relatively exhaustive records of the translated text (although by no means being free of interpretations and constructions, see Reuber & Pfaffenbach 2005: 158-59). These protocols were moreover supplemented with explanations and clarifications in discussions I held with my assistant at the end of each day. I took notes from Participatory Urban Appraisal exercises; this partly happened during phases when the conversation was taking place in Hindi, partly after fieldwork. For reasons of confidentiality all produced records were given a code that consists of the date of the conversation, the two first letters of the name of the main interview partner, and if I talked to a state representative with an abbreviation that designates his or her post or affiliation. A list of these abbreviations is given in the appendix I.

The most important step in analysis when working from a Foucauldian perspective is the way interviews and other data are used. While most of the qualitative research works with a hermeneutical approach to text (ibid: 175), Foucault's analysis is different from this kind of interpretation. He is not interested in interpreting what speakers 'really' want to say – he refuses to go beyond the actual statements in search of some assumed deeper meaning. Instead, his interest lies in the understanding of practices in their "positivity"; he takes them at face value (Lemke 1997: 39).

I therefore looked at data from the point of view of genealogy. I did not employ discourse analysis, as favoured following the archaeological strand of Foucauldian analysis. This, I feel, cannot be done without perfect mastery of the language, and would moreover be difficult in a foreign cultural context. Instead, I chose to concentrate on unearthing the connections between different sets of statements and non-discursive practices (Bührmann & Schneider 2007: n.p.; Füller & Marquardt 2009: 99) because according to a genealogical stand, data processing needs

to concentrate on "the specific connection between text and context" (Mattissek 2005: 207, *own translation*).

Statements in different types of literature were analysed with the help of the analytical grid of governmentality (Foucault 2010: 180; see part II, section 5). The ways of seeing waste water and informal settlements and the 'truths' circulated about both were highlighted, and technologies of government expressed in official projects and interventions identified. The results of this analysis are presented in parts IV and V.

Interviews were analysed through thematic coding following Flick (2004: 271-78) with the help of Atlas.ti software in order to identify the heterogeneous patterns of discursive practices. Thematic coding was developed especially to compare different actor groups with regard to their views and perspectives. It therefore seemed appropriate for the analysis of data from different state representatives and different communities within the research areas. Coding was first done for single interviews. The obtained categories were then expanded by analysing further interviews. Finally, different interviews were compared on the basis of certain categories (ibid.: 273; Reuber & Pfaffenbach 2005: 165), so that groups of interviews emerged that presented specific answers to my research questions.

These data, together with observations, results of Participatory Urban Appraisal, and maps were scrutinised with the help of the analytical grid of four dimensions of practices of governing – ways of seeing and knowing, formation of subjectivities, and use of technologies of government – introduced by Dean (2010: 33). The aim of this exercise was to understand the regimes of practices at work and to distinguish different types of regimes of practices found in the field (Füller & Marquardt 2009: 99) as well as their overlap and contradictions. The results of this analysis are presented in parts VI and VII.

3 The fieldwork: Reflecting on empirical research

The described methods were obviously not applied in a sterile, static environment. Rather, they were applied in a very dynamic space in which I was only one out of (approximately) 16.7 million inhabitants, and in which daily lives centred on more than on waste water. What might have sounded as a rather straightforward work programme in section 3 of this part was therefore embedded in my everyday experiences of fieldwork. Doing fieldwork was a multi-layered process. Not only were there multiple sites – two colonies and a fair amount of offices, together with some two thousands of kilometres on scooter, and more in metro and on cycle rikshaws – and multiple timings. There were also layers of social relations building up, shifting identities (Apentiik & Parpart 2006: 36), interpretations that went back and forth as my understanding

increased, and various negotiation processes between myself, my assistant and the respondents about terms and concepts, about where and when to talk and where and when to listen, and also, when to interrupt. In group discussions, there would be the big problem of whom to listen to, too.

To work in the colonies, for me, has been a challenging process – and an incredibly rewarding one. Especially in the beginning, unknown to my respondents, tall, blonde, and with very little Hindi in my baggage, I would often feel like an animal in the zoo – attracting crowds of children who all wanted to shake hands, being taken pictures of by daring young men with fashionable mobile phones equipped with cameras, or commandingly being called by old ladies "aunty is calling you!". As people started knowing me, things changed a lot, and with it, new challenges arose, until in the end I had to ignore emails with love poems, decline an invitation to go on a private motor bike trip to the Taj Mahal, and answer the sixth phone call of the day by my excited 18 year old female friend from the JJ Cluster.

In between these experiences, I tried to concentrate on my topic – waste water – often seemingly disappearing beneath the social relations it was embedded in and that I engaged with.

3.1 Working in Delhi

My first entry into Delhi was in August 2007. I had heard quite some opinions on Delhi, most of them not exactly favourable. I reached in the early hours of the morning, excited to smell India again after six years, and surprised that it was not too hot – an impression I revised when I woke up after some hours of rest at around 11 a.m. That time, I fled Delhi on the next day to climb up the Himalayas and only dared coming back beginning of September. I then engaged in getting to know this city I had chosen as my 'field'.

During hour-long bus drives, to the amusement or interest of other travellers the Eicher map always on my knees, I tried to get some orientation. I met people from the Heinrich-Boell-Foundation, the Center for Science and Environment (CSE), and The Energy Resources Institute (TERI) to get first information on my topic. I enjoyed living a sort of normal life in the city after a month of struggling with the role of tourist, even if for the whole month I lived in Paharganj – a microcosm of tourism most Delhiites have not set foot in.

My research has allowed me coming back to Delhi three more times, and most of the write-up took place there, too. I made it a point to experience the rainy as well as the dry season, for obvious reasons. Each time I stayed longer: first I spent two months for pre-study (Apentiik & Parpart 2006: 39). During that time, discussing my topic with experts from the Delhi University, The Heinrich-Böll-Foundation, and the National Institute of Urban Affairs helped immensely. I

then stayed four, finally five months for fieldwork from October 2008 to February 2009, and from July to December 2009. During this second time, as well as during seven months of writing from September 2010 to April 2011, I was affiliated to the French Centre de Sciences Humaines in Delhi, providing me an institutional context in which to work and exchange ideas.

During most of that time, especially the South of Delhi was completely dug up for the preparations of the Commonwealth Games in October 2010, and the related extension of the metro network – huge public expenses that stood in stark contrast to the lack of investment in my research areas. From bus I changed to scooter which enabled me to discover back streets, heat and rain in combination with traffic jams, but also the helpfulness of rikshaw drivers and other travellers regarding finding my way – or a nearby repair shop. I moved into a shared apartment with two other Germans in the South of Delhi, preferring the comfort of making friends to staying close to my research areas. Thinking about moving into the colonies I worked on I feared that living with or close to some neighbours might block communication with others (Leslie & Storey 2003b: 89). I definitely decided not to shift, when I found out that huts in the JJ Cluster were only free for rent if someone not able to pay his or her debt were thrown out by the money lenders. I definitely did not want to become part of that story.

3.2 Working with field assistants

During the course of my fieldwork I had three assistants, the last of which has been most important for the PhD. Manoj was my first contact in Delhi in terms of research. A former research assistant of a colleague in Cologne, and MPhil in Geography from Delhi University he was a great help in getting me in touch with that institution, my two other assistants, and in trying to explain me GIS. He also came to the field with me a couple of times, and had the honour to be my host for the first Indian wedding I experienced – definitely an unforgettable night. Rajesh, his batchmate, then came with me during two months for the pre-study, introducing me to a larger part of academic life in India, as well as to the (until now) hottest part of Indian cuisine, delicious dishes prepared by his Rajasthani mother. Both of them being male certainly helped entering the field and starting the conversations with local headmen and politicians (Scheyvens et al. 2003: 132).

It was at the wedding just mentioned that I first met Chandramukhee. We kept in touch to become friends first, and only during my first real fieldwork phase did we agree to work together. During the months together, we have become serious colleagues as well as close friends. Doing her MPhil in Geography at Delhi University too, and having worked with qualitative methods before, Chandramukhee quickly grasped what my aims were. She was my

cultural as well as language translator (Burja 2006: 174), and was very attentive to my European needs in terms of work organisation. Nevertheless, working with an assistant was challenging. I often wished I would understand better so that I could interact directly with the people myself. Especially in the beginning, we used extensive discussions over coffee after the fieldwork to clarify interviews and observations (ibid.: 177). Slowly my Hindi got better, so that in September 2009 I went to one of the colonies alone while she had some obligation back at home in Patna. I had come to map, not to interview, but still it was a challenging experience. Realising that I was not completely lost without her made me feel more confident. In the other colony, too, I had an experience without her one day, where I noticed that my language skills had improved quite considerably. The investment in term of time I had undertaken to learn Hindi started to be rewarded (Leslie & Storey 2003a: 136). Still, I was too anxious of loosing information to go for interviews alone. Despite my frustration her presence was a great help – in terms of observations that she shared with me, in terms of negotiating the content of unclear phrases, and also, of being able to let go and relax for a little while when she was talking. Attention did not focus only on me, and that was very welcome from my part. Although people associated her with me, they also felt that she belonged to them: "You must know that", she heard very often. She thus had an ambiguous role of go-between which both sides acknowledged. She also noted that I provided her with the opportunity to get in touch with parts of her own society she had not interacted with before. Experiences in government offices helped her make up her mind regarding her own career: she became motivated to do what her parents wanted her to do and prepare for the Union Public Service Commission exams.[29] Once I came back to Germany between the two fieldwork phases, the situation turned around for a brief moment: in a dream during the first days of being back I saw both of us doing research in Tannenbusch, Bonn's low income area, with me as her assistant. I do think the experience would be worth while.

3.3 Interacting in the *Jhuggi-Jhompri* Cluster

My first visit to the JJ Cluster I would finally decide to work on was in February 2008, on a pre-survey aimed at identifying my research areas. At that time I worked with Rajesh, who had endured several visits on which I unfailingly pointed out the most dirty, stinking and revolting parts with excitement. Reaching the JJ Cluster, we were quickly encircled by a group, one member of which introduced himself as *pradhan*, or local headman. When hearing that we wanted to know about drains, he escorted us hurriedly through the colony, reaching the

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[29] UPSC organises the exams that ongoing bureaucrats of the Indian Administrative Service have to pass.

blocked, covered drain he showed us with anger in his voice and we just managed to involve him in a brief conversation on which to base our decision before finding ourselves outside of the settlement again.

I returned anxious but armed with curiosity and good advice by my colleague who worked in informal settlements in Chennai eight months later. Trying to 'read' the area I quickly realised that there were parts where people would call us inside and throw any curious noses out, while in other parts, large groups would gather, testing my assistant's skills at translating and allowing the kids to cling to me. Slowly trying to accommodate to the noisy, cheerful ways, we took refuge every now and then in the quieter parts. Communication patterns varied accordingly: while large groups literally spoke with many voices and didn't want to follow my obsession with waste water, talking with single respondents inside their house allowed for more focused conversations conforming to my ideas of interviews. I learned that fieldwork is not a totally controllable process.

I quickly improved my vocabulary on all the things 'dirty': drain, garbage, mosquitoes, stink, worms constituted some of the first words I learned in the field. With better language skills, I started relaxing more when my assistant, afraid of breaking the flow of ideas, allowed respondents to talk for five minutes without translating in between. Most people loved having us sit with them. But few had enough time or interest in talking with us for a longer time, especially after finding out that we were there to write a book. '*Kya karvaenge*', what will you get done, would quickly become another phrase in my vocabulary – and one that until the end made me feel sad and uncomfortable, questioning the purpose of what I was doing. Without my assistant's tips and tricks it would have been difficult to get as many respondents as we did.

The fact that most respondents thought me to be much younger than I actually was helped at least overcoming girls' and women's shyness, and hopefully lessened the perception of a power divide between them and me to some extend (Scheyvens et al. 2003: 149). My being a foreigner also eased relations as I clearly was not part of caste society (ibid.: 151). As for my assistant, I was happy to find someone, who, coming from a middle-class family, had so few prejudices and reservations against sitting on the floor, looking into overflowing drains and drinking tap water in the cluster. She would often point out how things were reminding her of her *naani*'s, her maternal grandmother's village in Bihar – a fact which made her feel at ease, and made the respondents at ease with her, too. Also, she did not share especially female middle-class inhibitions so that on our last visit we both laughed our heads off when one of our respondents

whom we had felt close with since a long time agreed to teach us all the 'slang'[30] people used in quarrels; my assistant's vulgar vocabulary must have at least doubled that day!

Multiple interpretations took place during these hours under fans switched on especially for us. Not everything could be planned, as topics would come up spontaneously. Differences between my assistant's and my English, as well as between her and our respondents' Hindi played a role besides the translation between the two languages – and further reading between the lines was often necessary (Burja 2006: 172). Many things could not be asked as directly as I intended to in the beginning.
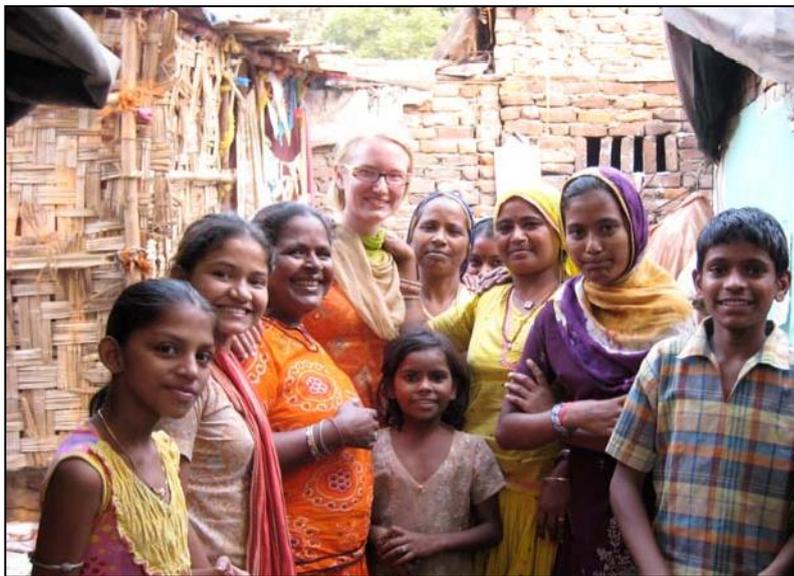
Photo 4: A group of respondents with me. Only when seeing this photograph, I realised how much taller I was than the other women. (Photo: A. Zimmer, October 23, 2008)

Next to the interviews, mapping represented important parts of the methodology. I also took photos. But taking out the camera would invariably lead to people asking me to take their 'snaps' or have a piture taken with them and myself (see Photo 4). Instead of taking pictures of muck I ended up with numberless images of families and neighbours, or young children called for that rare occasion. Mapping, in contrast, led to groups of children following us through the lanes and helping us by shouting '*yahin rasta nahin!*' (this lane is closed) once they saw that this is what we were interested in. Besides the rather straight lanes in the Eastern part, I was convinced I would not be able to map the rest of the mazy colony. Several attempts of mapping by respondents had not produced the outcome I needed for a map (although bringing interesting results). I started to be convinced that mapping was impossible when I had the luck to meet a young lover of geography, who authoritatively dismissed my and his friend's doubts: "I can map the whole cluster, no problem". His map has been the key to the riddle the lanes towards the West posed to me and with minor changes we finally managed to complete our task.

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[30] Slang, in the Indian context, refers to insults and swear words.

One of the major challenges of the fieldwork were eating and drinking. Eating, because for being in the field at two, when women were free, I had to leave my flat just before lunch time; drinking, because I could not – until the end – bring myself to use the community toilet block. I started drinking less, despite my fear of a bladder infection and dehydration. Relief came towards the end of the first field work, when we befriended a woman who had the extremely rare luxury of a private latrine. A visit to her place became part of our routine, providing me with a feeling of immense comfort. It is with her that we stayed over night after a wedding we got invited to (see Apentiik & Parpart 2006: 37 for the experience of joining in social events). Moreover, the wedding was an opportunity for the young men previously annoying me a bit to prove immensely protective. Ever after, the groom's mother considered me as a sort of family member. It is with them that we celebrated Navratri in 2009, when I had come back for the second fieldwork period, dancing Dandiya in the streets at night.

For many, the second fieldwork phase from August till December started with the question "Is your work still not completed?" Re-entry in the field took time – we wanted to hear, and people wanted to share the latest gossip: Babies born, marriages fixed and broken, a new concrete lane, the national elections. A greater sense of familiarity was established, people were excited to see the photo of my family – thanks to my brother's then three kids at least big enough to represent a proper family picture, although even my mom wore jeans!

For some, the frustration that I did not get anything done grew. For others, intimacy grew which meant more stories on unhappy marriages or beating mothers and mothers-in-law. It also meant more confidence in speaking about quarrels among neighbours, a delicate subject in such a small and open space. When I left for the second time, the question invariably was "When are you coming back?" I think, both them and I were happy to realise: when I come next time, it will not be for work, it will just be to visit. Switching roles, however, might prove not to be as easy as I am expecting it (Cupples & Kindon 2003: 230).

3.4 Interacting in the Unauthorised Colony

My first visit to the Unauthorised Colony (UAC), too, was in February 2008. Reaching there one afternoon with my assistant who was thrilled as he was living just nearby (while I, in rikshaw and bus, had a two hours drive to come there), I was amazed to find people were busy pumping out a huge pool of waste water that had gathered in an open space full of garbage. The colony being Muslim meant that the overwhelming majority of people I saw on that first day were male (see Photo 5). But it also meant, elders would strictly command youngsters to keep their distance. A part of that first visit was spent in the relaxing quietness of a doctor's practice. Besides the

layout of the colony being easily understandable, the doctor, talking in a mix of English and Hindi, showed me a map that had been prepared for the ongoing regularisation process. Clearly, I was in a very different setting.

Photo 5: A group of men has gathered after prayer. Women, in contrast, do not pray at the mosque, and are not supposed to 'roam around'. *(Photo: A. Zimmer, December 28, 2008)*

I came back in December 2008, after the first field work period in the JJ Cluster, and found that working here was very different too. In the Unauthorised Colony, talking with older men gathering at the doctor's before or after *namaaz* (the prayer) was easy –

getting to talk to the women, however, required knocking at doors and trying to convince slightly suspicious and busy housewives to let us in. Women, we heard, were not supposed to 'roam around', and some rather strange looks were thrown at us through burqa veils in the streets. My short sleeves were probably a provocation already, and when one sunny day I forgot my *dupatta*[31] and wore a scarf only, I understood only afterwards that the laughing comment "oh, you are feeling warm today!" by a passing lady was probably a criticism.

Despite, or because of this fact, I was amazed to find that especially the old men were treating us with greatest respect. Somehow, my assistant being Hindu and me officially Christian,[32] made us stay outside the circle of their community and it was assumed that different rules applied. Also, pursuing the goal of a PhD was widely acknowledged as a worthwhile and respectable enterprise (Jervis Read 2010: 63).

Polyphone group discussions were rare here – but the thrill of seeing a foreigner, too. While older men enjoyed discussing politics, we had to convince the women that they, too, had something valuable to say (ibid.: 56) – and that it was worth interrupting their work for talking

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[31] A *dupatta* is a long scarf that is used to cover the bust.
[32] A fact I did not clarify for my own convenience (Scheyvens & Storey 2003: 159).

with us. Nevertheless, we met outspoken and defiant old women, including one that referred back to us with the irony of strategic knowledge on how development works: "If you have come to improve things I can exaggerate also – have you come for that?" (131109VA). While she made this dilemma obvious, others might have chosen the same strategy implicitly (Reuber & Pfaffenbach 2005: 116; Apentiik & Parpart 2006: 37). We tried to minimise that factor through triangulation of methods and data sources.

Taking photos in the colony, too, was a different experience altogether: especially women shied away from the camera, and there was less life on the streets. I took much less photos in total, and hardly any of my respondents. People did not ask for the paper photos; while in the JJ Cluster I was constantly reminded that I owed pictures and the distribution was a sensitive diplomatic undertaking as all people on the photo wanted a copy of it – a request I could not always satisfy. Strangely, the whole atmosphere made my assistant and me switch into a more professional mode: we befriended few, had more difficulties even to remember respondents' names, and the experience was less intense at a personal level. Men became our key informants, while earlier the gender balance had been more or less maintained.

Coming back a second time, the doctor was disappointed not to receive a proper gift from Germany. His affection for us cooled down remarkably and he seemed to accept that we were there to do our job. Other people too, were disappointed – but not with us, rather with the new Member of Legislative Assembly (MLA). While enthusiasm of the first Muslim MLA ever (elected in December 2008) had been great and hopeful in winter, I came back in August 2009 to witness zero change. This time I could join for the festival of Eid[33] (Apentiik & Parpart 2006: 37) to witness the condescendence with which the same MLA had come to convey his wishes for his voters – and to get an interview granted in public which then never materialised.

The Unauthorised Colony also meant for me 35 km, or 1.5 hours on the scooter, one way. While going to the JJ Cluster had been 45 minutes on the scooter plus 45 minutes in the metro with my assistant, this trip was long and lonely. But it permitted me to cross the Yamuna and the Akshardham Temple, witness the rapid expansion of the metro network and the constantly changing net of highways and flyovers in the Transyamuna area.[34] I saw the floods in 2009, and people displaced from the floodplains;[35] I enjoyed sharing the road with numberless cycle rikshaws and buffaloes, and experienced exasperation at needing 30 minutes for the last 2 km

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[33] Eid is the 'sugar festival' at the end of the holy month of Ramadan.
[34] The Transyamuna area is the part of Delhi which lies East of the Yamuna.
[35] These floods were much less heavy than the ones described in part I, occurred in 2010.

with my assistant that I picked up at the bus stand due to constant traffic jam. Trying to contour it led us through more unauthorised colonies in full road construction – leading to the experience described in part II. The trip became part of our research, and I owe it to Chandramukhee that she took the stress with a lot of humour.

3.5 Interacting in the offices

Experiences we had while trying to get in touch with officials, too, became part of research: accessibility of state actors was one criterion I was curious about. To my own surprise, interviewing bureaucrats became my favourite. While the top layers of the service remained tight-lipped and preached the official version of whatever topic I addressed, I discovered that in the lower hierarchies people were like balloons full of stories and of dissatisfaction – it just needed a little pique to burst it and get them gossiping about superiors, the service as such, and citizens. The remoter the office was from the centre, the more enthused people were about talking to us. We drank endless cups of tea, were offered biscuits or other snacks, and once even the rikshaw fare back to the metro station. At the same time, being in the offices allowed us to observe the interactions between the staff members – often very cheerful amongst those at the same step of the hierarchic ladder, and ice cold between superiors and their subordinates. Especially the relationship between scavengers and Sanitary Superintendants was one of almost open conflict and voices were raised more than once. Our research took on an ethnographic dimension which I highly valued. Conducting interviews was easy, and interesting side topics came up, teaching us about devotional songs, Delhi's history, and energetic chakras according to vedic science. Clearly, some of the Engineers would have loved to study something else, but opted for a secure career instead.

It was my luck that the Director-in-Charge of the Sanitation Department had a brother living in Cologne. After talking to his niece on the phone in German – while at his office inside the football stadium at ITO[36] – he granted me maximum support, although I never managed to actually get a proper meeting with him. Yet, he facilitated my interview of the Deputy Commissioner, and never got tired of referring me to his Engineers.

In the case of politicians, the situation was different. There was no overarching organisation to go through to reach them all, and offices mostly meant homes. The reactions of the representatives of the two colonies were asymmetric: in the JJ Cluster, the Member of

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[36] ITO refers to an area of government related buildings near Delhi Secretariat, on Vikas Marg, named after the Indian Tax Office.

Legislative Assembly (MLA) was very open to talk to us and gave us three long interviews. Yet, his son, the Municipal Councillor, ignored us outright and later even stopped taking our phone calls. In the Unauthorised Colony, on the other hand, we went to the Municipal Councillor's house time and again, and her husband's background in geography motivated him to share his knowledge with us. But the closest we got to interview the Member of Legislative Assembly was an appointment at his residence to which he did not turn up. Before and after that we only spoke to his assistant. Sitting at politicians' residencies provided us with chances at ethnographic evidence, witnessing how voters approached their representatives. And here too, different topics floated around, until one day my assistant and I got our horoscopes read by the JJ Cluster's MLA's personal astrologer. I do not know if his detection of my "aggressive nature" was the reason, but ever after we felt the MLA had started avoiding us. But maybe we had just overstretched his patience, too.

All these experiences, while resulting in 'data' in the form of interview transcripts, became part and parcel of the research itself. They were part of the context in which to understand the interviews. They showed us practices and revealed the unsaid. And they changed me, slowly and gradually, changed my approach to the governance process, and directed me firmly towards an understanding of governance as outlined in part II. The results of this process that concern my understanding of the waste waterscapes of Delhi's informal settlements will be presented in the following four chapters.

IV WASTE WATER GOVERNMENTALITIES

This thesis is concerned with the waste waterscapes of Delhi's informal settlements. Waste waterscapes were conceptualised in part II as spaces whose production processes are highly dynamic, and influenced by changing waste water governmentalities. This chapter aims at answering the research question: ***"What are the waste water governmentalities currently at work in Delhi?"***

To do so, I begin by tracing the historical development which produced waste water as an object of government in Europe and in British India. The development is characterised by two salient features: first, waste water governance turns out to be a by-product of governing other, more prominent objects of government, such as public health, sanitation, and more recently, water and water bodies. Second, waste water governance was and continues to be a power-laden process that is predicated on Othering groups or individuals (Spivak 1985: 252) who are labelled as less clean, ritually pure, or hygienic.

Today's waste water governmentality in Delhi is analysed from section 3.2 of this part onwards. Because governmentalities are rationalities which find their expression in practices (see part I, section 5), the analysis looks into ways of seeing and knowing waste water in Delhi, as well as pertaining technologies of government. I have argued in part I how governing waste water has recently received new impetus due to India's strong ambitions as a rising international power. Although leading to an enhanced visibility especially of urban waste water amongst policy-makers, the following sections will show that debate in Delhi continues to be structured by more prominent challenges of urban governance, namely sanitation and river pollution. This has important repercussions on waste water governance: Data on waste water are produced within these discursive contexts. Based on these data, calls for reforms are formulated. Section 5 of this part investigates how and by whom these appeals for change are put into practice on the ground to understand how waste waterscapes of informal settlements are affected. Studying current initiatives, it turns out that no agency is actually responsible for governing waste water where no connection to the sewer network exists. Also, waste water governance here is formulated almost exclusively from within the sanitation debate. Governing practices in the context of sanitation are directed at municipalities, but also continue to target above all marginalised groups of the urban society: scavengers and inhabitants of informal settlements.

Before following this argumentation, however, we shall first look into the question how waste water is defined.

1 What is waste water?

From a point of view of natural sciences, waste water is defined as "water that has been transformed, mostly polluted, through domestic, commercial and industrial use, as well as storm water" (Leser 2001: 13; *own translation*). Domestic waste water is further divided into two main components: first, water that has been used in activities like washing, bathing and cleaning; and second, water that contains excreta. To distinguish differently harmful substances, the first component is labelled grey water (used water), the second black water (used water and excreta) (Mougeot 2006: 79-81; Rechenburg & Kistemann 2009: 81-82).

Different parameters are used to determine the quality (or pollution level) of water and waste water in the natural sciences. The scientific discourse about water quality is framed quite homogeneously by standardised quantitative methods (Karpouzoglou 2012: 55-57). On the one hand, criteria in relation to human health are used, such as declaring water fit (or not) for consumption, or for bathing (WHO 2008: 1; CPCB no date). On the other hand, criteria in relationship to other organisms are employed which focus on the ability of water bodies to sustain higher life forms. In India, the content of coliform bacteria (found in faeces), pH levels, dissolved oxygen, biochemical oxygen demand, and free ammonia are used to categorise water quality levels for "best designated use" (ibid.).[37] These approaches show how waste water is inextricably linked to water and water bodies, but equally to questions of human health. The remainder of this chapter will demonstrate how these definitions and categorisations of waste water play an important role in spelling out three discursive fields of official waste water discourses.

But the question 'what is waste water?' can be approached from a point of view of interpretative social sciences as well. Here, waste water – its three components of waste, water and excreta – are assumed to have a social meaning. Yet, this meaning is not necessarily fixed. "Waste", as Hawkins (2006: viii-ix) puts it, is "a flexible category grounded in social relations". It is not a fixed category or material entity, such as in the natural sciences, but rather a concept which has different meanings according to the social and historical contexts in which it is used. Campkin & Cox (2007: 2-3) draw a picture of shifting problematisations and practices. As an example, human faeces were long coveted as a precious resource in agriculture and only slowly were associated with disease (Gandy 2005: 526). Prevailing theories of health and sickness

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[37] In the European Union, river water quality is similarly assessed by looking into chemical and physio-chemical parameters such as the thermal conditions, oxygen content, salinity, acidity, nutrient content, as well as chemical pollution parameters (European Parliament and Council 2000: Annex V 1.1.1).

influenced notions of dirtiness or cleanliness (Campkin & Cox 2007: 1), as section 2.1 of this part will show. Waste water is thus something which is considered more or less dangerous and injurious to human health at different times. Today, waste water (and especially black water) is considered a major health hazard.

Moreover, waste water is 'dirty' water. The problem of cleanliness and dirt has been introduced in anthropology by Douglas (1988). She argues that rules of cleanliness and handling dirt are attempts to reproduce and express a specific social order (ibid.: 2-3), because dirt is "essentially disorder" (ibid.: 2). She draws an analogy between rituals of cleanliness and the maintenance of boundaries within any given society. Which are these boundaries, and how does differentiation work? On the one hand, criteria of body cleanliness and practices of individual hygiene are used to identify different social groups. An example is the case of 19th century England, where the smell of people was a strong class indicator, so that prevention of body odour was used to state social distance from the working class (Gandy 2005: 257; Black & Fawcett 2008: 21). On the other hand, the contact with things conceived as dirty is associated with certain social groups. Taking the example of the caste system in Hinduism, Douglas (1988: 123) points out how contact with excreta, among others, is a traditional marker of the lowest ranking *dalit*[38] communities rendering them ritually polluted and polluting for general caste Hindus. Accordingly, assigning lower social positions works in two ways: First, by labelling certain people or communities and their bodily practices as 'dirty' (Campkin & Cox 2007: 5-6), and second, by delegating work that is perceived as 'dirty' to them (Cox 2007: 12).

Following from this, waste water which is conceived of as 'dirty', represents something socially repulsing, and proximity to or contact with waste water can be considered polluting in a ritual way and/or leading to social exclusion of certain groups. Related practices to avoid or provoke contact are something by which societal boundaries are expressed. Accordingly, to associate certain groups with waste water, or to assign handling waste water to them thus functions as a social practice of Othering (Spivak 1985: 252), where the Other is constructed as dirty and polluted, while the own group is presented as clean and pure.

Working on waste water in Delhi's informal settlements, meanings of waste water and human-waste water relations play an important role at two levels. First, the colonial rulers used distinctions of dirt and cleanliness in a racist context to legitimise European domination of the Indian population (Anderson 1992), an observation that will be elaborated in section 2.2 of this

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[38] Dalit is the self-ascriptive term of those communities considered traditionally to be casteless or 'untouchable' (Basu 2011: xi-xii).

part. Today's state representatives tend to do so in a context of class[39] to control residents of informal settlements, a tendency visible in this part, section 5.2.3, and especially in part VI. Second, the caste society draws rigid lines of distinction between those handling waste (and especially human waste) and those who do not, and declares the former as 'untouchable'. One could possibly argue that this division has been used at least until the recent past to legitimise the differential privileges or disadvantages of certain members of society, and continues to do so to a certain extent (Fuller 1996: 12-29). Today, this legacy plays an important role for interactions between inhabitants or state representatives and scavengers.

2 Historical developments

To conceive of waste water as a problem of urban governance is not self-evident. In fact, it is interesting to note the length of the struggle that led to its formulation as a major object of government in Europe during the 18th and more so, 19th century. The following section will present a brief overview of developments in Europe and colonial Delhi.

2.1 Developments in Europe

Problematising waste water is a practice which started from concerns over human health. Following Foucault, the growing interest in waste water can be read as part of the development of a governmentality which aims at encouraging population and economic growth (Gandy 2005: 527). Foucault (2007: 12-20) himself traces part of this development when recounting how in the 18th century, the idea of circulation in and opening up of the enclosed city space is gaining prominence in the discourse of urban planning. These ideas were motivated by the need for economic exchange as well as by a problematisation of "overcrowding" (ibid.: 17) in view of an increasing attention to the health of the population. The growth of cities posed questions about the viability of such unprecedented accumulations of human beings (Johnson 2006: 89). Public hygiene therefore became a "global project" (Foucault 2007: 117) and was finally enlisted in the duties of the state (McGranahan et al. 2001: 33; Black & Fawcett 2008: 7).

Ironically, what first caught the attention of administrators in this context was the odour of waste water, as the miasma theory related disease to bad smells (Gandy 2006: 18; Johnson 2006: 121). In order to prevent these dangerous smells, the governmentality of the 18th century

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[39] Most probably, caste is also an aspect in the interaction with residents of informal settlements. Interviews however, did not reveal this clearly, so that I restrict myself to an interpretation of class boundaries. The fact that caste was not problematised openly is certainly due to the strong "delegitimation of caste inequality in the political and legal arena" leading to "a more or less acceptable public discourse about status coded as cultural difference" (Fuller 1996: 13).

started to regard giving "direction (…) to stagnant water" (Moheau 1778 in Foucault 2007: 22) as the state's responsibility. This task became more pressing as water closets were introduced into the market during the second half of the 19th century, leading for the first time to the creation of black water in urban areas.[40] Waste water quantities in cities increased dramatically and became more harmful to human health. Repeated cholera outbreaks occurred. In Britain, the movement of Sanitary Reformers, amongst them very prominently Edwin Chadwick, pointed to the social and economic costs of insanitary conditions (Chadwick 1842). Within the framework of the miasma theory, and a governmentality which placed public health on the state's agenda, the private technological innovation of the WC therefore gradually led to the development of first public sewer systems (Laporte 2003; Gandy 2006; Johnson 2006; Black & Fawcett 2008).

The problematisation of waste water as source of bad smell was stable throughout most of the 19th century. It was finally shifted towards its capacity to pollute drinking water through a series of cholera outbreaks in (the then only partly sewered urban area of) London in 1854 and 1866 which allowed the development of a theory about the disease's water-borne character. While unpleasant smells slowly slipped out of the field of 'vision', water quality and the disposal of sewage were now squarely and definitely introduced into the public perspective on health and longevity (Johnson 2006: 207). Because drinking water was partly procured from the polluted river Thames, this shift in perspective also introduced river pollution into the public discourse as an object of government.[41] The findings further pushed the development of a city-wide sewer system for London that was finalised under the aegis of Joseph Bazalgette, then Chief Engineer of the London's Metropolitan Board of Works, and led to sewage disposal far downstream of London (Black & Fawcett 2008: 14-16).

2.2 Colonial anxieties

Through colonialism's concern for the health of British troops abroad, the discourse of sanitary reform reached British Indian cities in the second half of the 19th century (Chaplin 1999: 149; Prakash 1999: 128; Mann 2007: 2; Sharan 2011b). In Delhi, sanitation became one of the key worries – together with safety – of the colonisers with regard to urban planning especially after the Mutiny or First War of Independence in 1857-1858 (Prashad 1995: 4; Mann 2007: 3) and the subsequent transmission of government from the East India Company to the Crown.

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[40] Before, excreta were disposed of as (relatively dry) night soil, and used as manure (McGranahan et al. 2001: 34).

[41] Persisting beliefs in the miasma theory, however, played an important role here, too, as evident from the influence London's 'Great Stink' of 1858 had on policies and allocation of funds (Black & Fawcett 2008: 15).

The European discourse on sanitation and the technological advancements of water-borne sewers met with a situation,[42] where Shajahanabad's formerly excellent underground sewerage system built in the 17th century had become dilapidated through lack of maintenance and declining water levels in the river Yamuna that could no longer guarantee sufficient flushing (Prashad 2001: 120; Mann 2007: 8; Sharan 2011b). In 1867, the Report on the Sanitary Condition of the Punjab (to which Delhi belonged at that time) recommended the construction of covered sewers that would lead into the Yamuna, as cesspools endangered the water supply through percolation and the air through evaporation[43] (Mann 2007: 12). The implementation suffered from the unwillingness of the Empire to invest in public infrastructure of its colonies (ibid.: 22). Despite the high visibility of waste water, the development of a sewer system was thus hampered, and the execution of sewer works only began in 1893. Even so, as a result of financial constraints, the underground drain system was never executed in a manner sufficient to reach the whole of (Old) Delhi[44] (Prashad 2001: 121). Excreta and rubbish, therefore, kept being managed through sweepers, scavengers, and bullock carts,[45] transporting the waste outside the city (Prashad 1995; 2001: 126). Although these technologies came to be regarded as backward and in need of replacement by the colonial authorities, the latter insisted on their operation for financial reasons (ibid.: 114; ibid.: 128). Also, the colonial discourse assumed that Indian rivers were inherently different from European rivers, and could thus assimilate a greater proportion of waste water. Instrumental here was the distinction between sullage and sewage: most notably discharging the first into the river was considered an acceptable practice (Sharan 2011b). But the (lack of) infrastructure development was not only linked to financial reasons; it was also tied to political motivations: As a way of punishing Delhi for having been the centre of the rebellion in 1857, the British Government of India deliberately hindered the development of infrastructure in the walled city (Mann 2007: 11). While European quarters at Civil Lines had already been favoured before, the construction of New Delhi to the South of (Old) Delhi between 1911 and 1931 made the technological gap even more obvious, as the new capital was equipped with a state-of-the-art waterborne sewerage system (ibid.: 28).

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[42] Drainage and sewers systems, and even water closets in India go back a long time. First evidence of water closets and brick drains for waste from individual houses are reported from the Harappan civilisation in the Indus valley (2300-1800 BC) (Mann 2007: 25; Black & Fawcett 2008: 10).

[43] The latter concern points to the still prominent Miasma theory.

[44] Thetown planned and built by the Mughal emperor Shah Jahan in 1639, is today known as Old Delhi in contrast to New Delhi, built by the British 1911-1931.

[45] For a short period of time, transport was even secured by a tramway (Mann 2007: 25)

Yet, colonial relations of power were not restricted to financial and political power. "Sanitation", as Prakash (1999: 129) puts it poignantly, came to "represent(…) a new order of knowledge and power", through which colonial rule could be established with a claim to scientific legitimacy; it became a technology of government in its own right. The power that 'sanitation' unfolded is to be understood through its mobilisation in a context of a colonial Othering of India and its inhabitants. 'Dirtiness' was essentially linked to Western concepts of the 'natives' (Chakrabarti 1991: 15; Prashad 2001: 117). Discussions around adequate toilet systems – dry or water borne – revolved around questions of racial inferiority of Indians (Mann 2007: 13), assuming that "to the masses of the people, sanitation is foolishness" (unspecified quotation[46] in Prashad 2001: 124). The "'civilizing' mission of the empire" (Campkin & Cox 2007: 6) as perceived by the British included therefore on the one hand changing the behaviour of local populations; on the other hand, distance had to be maintained between the British and the 'natives' to prevent infection and pollution.

First, the focus of the coloniser was very much on the practices of the colonised, depicted as sources of ill-health and nuisance (Anderson 1992; Prakash 1999: 130). In contrast to European citizens, colonial subjects were not trusted to undertake major acts of self-government: the state, in the eyes of sanitary reformers, had to achieve its aims through tight measures of discipline (ibid.: 131). As an expression of this, "controlling defecation and urination became (…) core issues of British urban sanitary politics" (Mann 2007: 25); a disciplinary governmentality prevailed. Second, and following from this, cleanliness and hygiene in the city was inherently associated with racial segregation (Sharan 2002: 33). Infrastructure was therefore built on a model of a *cordon sanitaire* between 'native' and colonial quarters. Especially in Delhi, where British settled next to the existing Indian city of (Old) Delhi, paranoia of contamination through the 'natives' fuelled the desire for segregation, rendering even more emphasis to sanitation (Dupont 2004: 159; Mann 2007: 5). This went so far as to claim a separate drainage system for white quarters and separate trenches for Europeans' excreta (ibid.: 20; ibid.: 27; Sharan 2011b). Othering then practically worked through the production of an "unhealthy place (…) as Europe's Oriental Other" (Mann 2007: 10). The provision of sewer lines in Delhi constitutes therefore a technological innovation that "do[es] not work in a realm of pure science, but (…) within a complex network of social relations" (Prashad 2001: 130) – in this case, social relations of racism and colonialism: unequal infrastructural upgrading produced the 'dirty native city' required for the colonial logic. By ascribing 'dirtiness' to the Indian population and its cities, the highly

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[46] This quote apparently stems from a report that replies to a general inquiry "on the question of sanitation and hygiene in the social consciousness of the natives" ordered in 1888 by Dufferin (Prashad 2001: 124).

unequal social order of colonialism could be maintained: Othering justified the 'civilising' colonial rule (Mann 2007: 28)

In this context, the dualistic treatment of the city space (Gandy 2006: 7) seen above can also be understood as a way of governing colonial subjects through 'arranging things': The refusal to build piped sewer networks in large areas of the Indian part of Delhi produced insanitary conditions which in turn aimed at encouraging subjectivities in the colonised that would accept the foreign rulers. Through the sewer system, power relations were quite literally inbuilt into the city: the infrastructure worked as the technological part of governing practices.

After the brutal retaliation for the First War of Independence, and more so after the First World War, increase in local self-government in the colony lead to growing influence of the propertied Indian classes under the British regime (Prashad 1995: 4; Gooptu 1996). This development encouraged the accentuation of the discourse on sanitation while giving a specific classist edge to it: Now "the poor", Gooptu (ibid.: 3245) concludes, were constructed as "the main source of filth and squalor", and thus as a danger to the middle classes. As in London, here too, a specific disease played a major role in spelling out social boundaries: the plague that affected Indian cities at the turn of the century was instrumental in forming an image of "overcrowded" areas as main "plague spots" (ibid.: 3246). The discourse Gooptu traces in four major cities of Uttar Pradesh clearly points to a convergence of the discourse on slums with the one on sanitation – poor people's living quarters are equated with dirt and insanitary conditions. In Delhi, meanwhile, lack of sanitation was blamed not only on the poor, but also on independent sweepers' practices by the colonisers and the local elite alike, and the Municipal Committee enforced draconian reforms to bring them under control from the 1880s onwards (Prashad 1995: 8-14; Mann 2007: 28).

2.3 The newly independent Municipality

The spatial segregation inherited from the colonisers persisted after Independence with British New Delhi becoming a separate Municipality, the New Delhi Municipal Council (NDMC). Another part of the city was set apart for the military and formed Delhi Cantonment. The vast majority of the city, however, was included in the Municipal Corporation of Delhi (MCD). Despite this continuing segregation, the aim of city-wide service provision – including universal coverage of the sewerage system – could not be easily dismissed any longer in the new democracy.

The framing of waste water in the language of health and sanitation persisted, too. The new Municipal Corporation of Delhi addressed waste water in its Municipal Corporation Act in the

context of public health (chapter XVII) following the Western bio-political discourse. Within this context, however, the notion of nuisance is instrumental in the ban of waste water, garbage and faeces from public space. Citizens are obliged not to create any nuisance. It is specified that

> "No owner or occupier shall allow the water of any sink, drain, latrine or urinal or any rubbish, filth and other polluted and obnoxious matter to run down on or to, or be thrown or put upon, any street or into any drain in or along the side of any street except in such manner as shall prevent any avoidable nuisance from any such water, rubbish, filth or other polluted and obnoxious matter." (GoI 1957b: Art. 357.2)

Further, open defecation and spilling of "rubbish, filth and other polluted and obnoxious matter" on public streets and places are prohibited under Chapter XIX, Public Safety and Suppression of Nuisances. It is interesting to dwell on the notion of nuisance a little longer. In the Delhi Cleanliness and Sanitation Bye-laws, 2009, of the Municipal Corporation, nuisance is defined in the following way:

> "'Nuisance' includes any act, omission, place, animal or thing which causes or is likely to cause injury, danger, annoyance or offence to the sense of sight, smell, or hearing or disturbance to rest or sleep, or which is or may be dangerous to life or injurious to health or property" (Municipal Corporation of Delhi 2009)

The concept of nuisance is related to ideas of orderly, convenient and obstacle-free public life. It is "an inherently aesthetic category defined in terms of codes of civility" (Ghertner 2010b: 149, drawing on Diwan & Rosencranz 2001), and mobilised within a moralist discourse. This discourse puts forwards bourgeois norms of how cities should look like. The central place of the notion of nuisance in the Municipal Corporation Act therefore already forecloses the "bourgeois environmentalism" that Baviskar (2003: 90) identifies at work in the Delhi of the turn of the Millenium. It shows that while the racist discourse might have retreated in domestic policies after Independence, processes of Othering within the class society always remained very visible in the context of sanitation.

3 Ways of seeing waste water today

Today, both observations remain valid: First, waste water is addressed through other, more powerful debates. Second, processes of Othering remain inscribed in waste water governance, subjecting especially scavengers and residents of informal settlements to governmental power. The following sections look into international debates and then turn to ways of seeing waste

water in contemporary Delhi in order to present the compartmentalisation of waste water discourses.

3.1 Current international debates

Waste water is embedded in various discourses that place it in relation to other perceived problems. Three main headlines can be identified under which waste water is discussed in international policy circles and scientific discourses today: 'water resource management', 'public health', and 'sanitation'. In all three debates, an integrated perspective on waste waterscapes in their political dimension is at best marginally addressed. Also, in all three, waste water shows a certain tendency to be overlooked: it seems to lack its own discursive space (Karpouzoglou & Zimmer 2012).

3.1.1 The water management debate

Waste water is discussed as part of 'water resource management' debates (e.g. Asano 1999; Buechler & Scott 2006; Rees 2006; Varis et al. 2006), being defined purely in a natural scientific way (see this part, section 1). In this discourse, waste water suffers from relative invisibility when compared to its seemingly more important sibling, drinking water. As drinking water is such a prominent issue in development and policy circles, waste water is mostly an add-on, treated jointly with water, but in the process getting less focussed attention. A strand of discussion emphasises, however, the importance of waste water for questions of water supply: waste water has the capacity to pollute water resources; yet, it is also considered a potentially significant water resource after treatment and recycling (Bouwer 2003: 125; Rees 2006: 25; Furumai 2008: 343). In urban areas, waste water is conventionally treated centrally in sewage treatment plants of different technological design, constituting an example of an 'end-of-pipe' technology that purifies waste water after collection (US EPA 2004: 9-13). Because of the prohibitive costs of this conventional system, on-site solutions for treatment are increasingly discussed (ibid.: 49-50). In the absence of a functional treatment system, waste water is discharged into rivers untreated, creating the above named pollution problem (UNEP et al. 2004: 54).

Water management debates moreover address waste water in the context of its evacuation. Stagnant waste water (such as in topographically low points) is rarely welcome in cities (Jones & Macdonald 2007). But how to achieve evacuation of waste water? In the majority of urban areas, artificial drainage systems have been created to evacuate storm and waste water as fast

as possible.[47] This system might be located underground – such as in the case of sewers – or on the ground. Movement of waste water is due to gravity or pumping (Tilley et al. no date: 87). Systems can be either combined for storm- as well as municipal/industrial waste water or collect both types of waste water separately. Separate drainage systems are regarded as advantageous, as they allow better calculation of waste water quantities, lower the volumes that need to be treated, and avoid spills of pollutants through overflows inbuilt in combined systems for heavy precipitation incidences (US EPA 2004: 7).

In the case of an open combined drainage system on the ground (like the one found in the research areas), solid waste often mixes with waste water, so that there actually is a solid waste-water-excreta mixture in the drains. In that case, movement of waste water along the gradient of gravity is inhibited as solid waste blocks the drains. If drains are made of porous material, infiltration happens endangering the quality of ground water supplies (UNEP et al. 2004: 50). Otherwise, waste water evaporates or stagnates. Because the tractive force of water depends on the speed of its flow, solids tend to settle in slowly moving or stagnant water (Goudie 2007: 399-400). This process is known as sedimentation and reduces the capacity of drainage systems significantly. With reduced capacity of drains, waste water can overflow onto streets or adjacent areas, exposing human beings to pollutants and bacteria.

3.1.2 The public health debate

The effect of exposure to waste water on lives and livelihoods has been addressed from the point of view of public health (Black & Fawcett 2008; Schuster-Wallace et al. 2008; Rechenburg & Kistemann 2009; UNU-INWEH 2010; Ur-Rehman & Zimmer 2010; Sakdapolrak et al. 2011). This debate, too, uses the natural scientific definition of waste water.

In section 1 of this part I discussed how parameters to measure water quality are based among others on the harmfulness of substances for the human body. Water is problematised as the source of several so-called water-related diseases. This term groups together the following transmission routes: Water-washed diseases are those transmitted through contact of contaminated water with the skin or the eyes; water-borne diseases are transmitted through ingestion of contaminated water; water-based diseases are transmitted through invertebrate organisms who live in water; water-related vector-borne diseases are transmitted by vectors, such as mosquitoes who need water to complete their life-cycle (WHO 1988). Black and Fawcett (2008: 72) point out how in fact water-borne and water-washed diseases would better be

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[47] We will see below how this paradigm of waste water evacuation has been criticised in recent years.

termed faeces-related diseases, as they are transmitted through coliform bacteria. Both categories of diseases are therefore effectively transmitted through black water, bringing waste water into the focus of public health debates. But other water-related diseases, too, are connected to waste water: if storm water stagnates in residential areas because drainage is insufficient, e.g. vectors can develop.

Worldwide, the most important diseases which are of concern with respect to waste water are malaria as vector-borne, and diarrhoea as water-borne or water-washed diseases causing an estimated 500,000 deaths and 1.4 million child deaths per year respectively (Prüss-Üstrün et al. 2008: 7-9). Preventive measures that are based on preventing exposure to waste water are discussed in the context of the sanitation debate.[48]

3.1.3 The sanitation debate

In close relation to the public health debate, yet with a slightly different focus, waste water is discussed in the context of sanitation. Here, the interpretative definition of waste water is much more prominent, as the sanitation discourse places health as well as dignity in the foreground. The goal is to avoid direct contact between humans and excreta. Basic sanitation was included in the Millennium Development Goal No. 7 in 2002 (Winkler 2012), after it was first forgotten while drafting the list of goals.[49] Now, target 7c aims at halving the proportion of population without sustainable access to safe drinking water and basic sanitation[50] (UN no date). The UN has recognised the right to sanitation (together with the right to water) as a human right in 2010 (UN General Assembly 2010), deriving it from the right to an adequate standard of living.[51] Sanitation is framed clearly as an issue of human dignity in this context (UN General Assembly 2009: 18; Winkler 2011: 13). Additional interpretations trace the right back to the human right to life and the right to health, pointing to the close connection between public health and sanitation discourses (UN General Assembly 2009: 9-11; ibid.:14; ibid.:14).

In the last years, the sanitation debate has been taken forward from a more technical point of view based on a discourse focused mainly on "numbers of toilets" (Mehta 2011), and numbers of those covered by the sewerage system (Ruet et al. 2002; Deb 2004; Mavalankar & Shankar

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[48] Other preventive measure, of course, are formulated in the context of medical care.
[49] Showing once more that water is much more prominent in public discourse than waste water or sanitation.
[50] "Basic sanitation" includes the "disposal of human excreta to prevent disease and safeguard privacy and dignity" (UN Water 2008: 2).
[51] The human right to sanitation specifies that sanitary facilities have to be "adequate". This means that facilities have to be available in sufficient number, they have to be safe from a point of view of health and technical standards, culturally and socially acceptable, physically accessible, and affordable (Winkler 2011: 16f).

2004). From a point of view of waste water, the earlier focus on latrines, toilets and sewer lines is highly problematic because several models of latrines and WC actually contribute to waste water production. With increased coverage of water-borne sanitation facilities, exposure to waste water can effectively increase, too (as seen in this part, section 2.1). A case in point is one of the research areas, as will be shown in part VII. Similarly, the sewerage system, if not combined with effective treatment facilities, as outlined above, contributes to exposure to excreta downstream of points of discharge into water bodies.

In the context of the Millenium Development Goals efforts were concentrated on measuring increase in coverage of specific technical varieties of toilet or latrine facilities, considered 'improved'[52] (UN 2010: 60-62). In 2005, sanitation was still defined as "interventions (usually construction of facilities such as latrines) that improve the management of excreta" (WSSCC & WHO 2005: VII). In 2010, in contrast, UN Water states that sanitation refers to the "collection, transport, treatment and disposal or reuse of human excreta, domestic waste water and solid waste and associated hygiene promotion" (UN Water 2008: 2).[53] To make the connection between excreta, waste water and solid waste more explicit, the term environmental sanitation has been introduced in recent years (WSSCC 2010: VI). Recognising that in many practical situations these components cannot be treated separately, environmental sanitation attempts to include sullage, storm water and solid waste into the considerations and address challenges in an integrated manner. It is recognised that individual technical solutions such as latrines or toilets need to be understood as parts of sanitation systems, defined as "'packages' or groupings of components that work together to move and treat wastewater" (Lüthi et al. 2008: 3). The debate thus increasingly acknowledges the importance of waste water.

The sanitation approach often places strong emphasis on responsibilities of affected community to achieve solutions. For instance WASH (Water, Sanitation and Hygiene for All) campaigns focus on behaviour change of individuals or communities to achieve better health outcomes (Kar & Chambers 2008; WSSCC 2010). In the context of environmental sanitation, too, focus is on the agency of households: The prominent approach, promoted by the WSSCC, is the "household-centred environmental sanitation" approach. It highlights the fact that the way forward is to rely

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[52] The WHO defines "improved sanitation" through specific technical parameters of different types of latrines and toilets (Unicef & WHO 2008). Governments might again use other criteria in their statistics, pointing at the difficulty to compare data (see section 4.1 of this part) (McGranahan et al. 2001: 45; Ur-Rehman & Zimmer 2010: 42).

[53] The Special Rapporteur on the Human Right to Safe Drinking Water and Sanitation has offered very recently an encompassing definition of sanitation. According to her, it designates "a system for the collection, transport, treatment and disposal or reuse of human excreta and associated hygiene" (UN General Assembly 2009: 20), and thus includes a stronger focus on 'black water'.

on individuals' and communities' capacities to decide on, manage, and implement solutions (WSSCC 2011). While these approaches aim at participation and empowerment of those excluded from sanitation benefits so far, projects formulated in this context thus run the risk of continuing to frame sanitation in an Othering language that identifies groups or individuals whose sanitation-related practices are not clean, and pose a risk to others.

3.2 Seeing waste water in Delhi: Producing objects of government

International debates on waste water have an impact on framings of waste water in Delhi today. This section studies problematisations of waste water based on literature reviews, as well as interviews with senior officials in the Headquarters of National, State, and Municipal authorities. While concerns of public health are still on the agenda since colonial times, river water quality has been added to the list of objects of government.[54] Waste water is addressed here, as in the international arena, through discourses on these more powerful objects of government. It remains relatively invisible – a fact that has important repercussions on the ways waste water is governed.

3.2.1 Those exposed to waste water: Sanitation, dignity and health

Waste water is prominently problematised in the context of sanitation and public health (see this part, sections 3.1.2 & 3.1.3). The weight of this discourse in independent India can be traced back to Mahatma Gandhi who famously stated that sanitation was more important than Independence (Unicef India no date). His remark was mostly pointed towards diminishing health impacts of unsafe excreta disposal.[55] As highlighted in section 3.1.3 of this part, the sanitation discourse is structured in powerful ways through development agencies who frame the debate in terms of access figures. Since access figures are at the heart of this debate, lack of reliable

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[54] Waste water is also seen in relationship to the situation of scavengers who clean dry toilets, but also open drains, and dispose of the faeces and solid waste. Scavenging of excreta is an occupation which, according to the caste system, is relegated exclusively to members of the Bhangi (or Valmiki) caste. Valmiki are dalits and contact with members of this community is considered polluting by general caste Hindus (Pathak 1991: 1). Traditionally, social discrimination of scavengers has therefore been deeply entrenched in Indian society, and until today notions of ritual purity, and practices of untouchability are found amongst certain groups, as suggested in section 1 (Fuller 1996: 12ff). Since 1993, manual scavenging is forbidden by law in India (Employment of Manual Scavengers and Construction of Dry Latrines (Prohibition) Act, 1993). In 2006, the Delhi Government passed the Commission for Safai Karamcharis Act to address issues of scavengers' rights (GNCTD 2006a). Unfortunately, this aspect of the waste water debate is beyond the scope of this thesis, and its effects seem to be minimal in contrast to ongoing forms of discrimination. I will show in this part, section 5.3.3 how in contrast to these preoccupations, scavengers continue to be assigned the subject-position of the governed in recent governance reforms. I am aware of the irony of again placing scavengers' dignity at the margins, i.e. the footnotes of this study, although this reflects the marginal position of this debate.
[55] A second aspect of his remark is the elimination of scavenging.

data is deplored (Chandra & Aneja 2004), and existing numbers are contested. A major part of the literature therefore discusses numbers of those having access to toilets and those covered by the sewerage systems, and focuses on explaining the failure to reach universal coverage (see e.g. Ruet et al. 2002; Deb 2004; Mavalankar & Shankar 2004; Langergraber & Muellegger 2005; van Dijk & Sijbesma 2006; Chaplin 2007; Tayler 2008). This focus on infrastructure means that waste water is almost invisible.

A related strand of literature problematises the living conditions, health risks and coping strategies of those who do not have access to sanitation facilities. As exposure to waste water is central here, its visibility is relatively increased (Hardoy et al. 2001; McGranahan et al. 2001; Ali 2006b; Joshi & Morgan 2007; Singh 2009; Sakdapolrak 2010). Especially informal settlements are seen as deprived in terms of exposure to waste water. The literature here shows a convergence of the sanitation discourse with the debate on informal settlements as spaces of risk. We will return to this in part V, section 2.1.1.

A perspective on those exposed to waste water partly contests the number game played out in the literature on infrastructure coverage. Mehta (2011) explicitly criticises the quantitative focus to push for a more experience-based, ethnographic perspective on waste water. However, questions of how to incorporate qualitative data (and even more so citizens' situated knowledge of the everyday) into broader policy frameworks and procedures of decision-making are open (Karpouzoglou & Zimmer 2012).

3.2.2 The receiver of waste water: River pollution

Waste water is also debated in relationship to rivers and their pollution, drawing on the international debate on water management and public health, but also due to religious concepts of rivers as goddesses (Haberman 2006; Maria 2006: 125). The debate on rivers is, as is the sanitation debate, highly fragmented and contested.

The water quality of rivers such as the Yamuna has been most prominently placed on the agenda in Indian administrative and policy circles from 1956 onwards. The 'wake-up' is attributed to a severe jaundice outbreak in Delhi following a flood in which waste water from the Najafgarh drain polluted municipal water supply (Sharan 2011a). Following this, the Central Pollution Control Board was set up to tackle water pollution in the 1970s (Karpouzoglou 2012: 47). In recent years, public attention to the river has grown considerably, for public health but even more so for environmental reasons. This enhanced visibility of the Yamuna in Delhi is amongst others attributable to the interventions of the so-called civil society. Challenged by a Public Interest Litigation, the Supreme Court in 2001 ordered the restoration of bathing quality in the

river Yamuna latest by 2003 (CSE 2007: 88). The prominent Centre for Science and Environment problematised the de-facto status of the Yamuna as a "sewage channel" in its book with the same title (ibid.). Numerous NGOs have sprung up to fight for better water quality of the river – We for Yamuna, Yamuna Jiye Abhijan, and Pani Morchha are just the most active ones.

The environmental perspective has, however, partly led to an alliance between middle-class interests with river quality concerns. This has become manifest by new exclusionary mechanisms being articulated through the language of environmentalism (Sharan 2002; Baviskar 2003). This particular expression of the debate shows a convergence between discourses on informal settlements and those on pollution, dirt, and lack of sanitation, which can been seen in analogy of the colonial Othering of the 'natives', or middle class Othering of the poor before Independence (see this part, section 2.2). Ghertner (2010b: 145) sums this perspective up as: "Seeing the slum, seeing pollution." Showing that the environmental crisis of the Yamuna was reduced to pollution from a nearby informal settlement, he documents how the 'green' agenda was used as an argument to dislocate the Yamuna Pushta settlement in 2004, while other structures – such as a bus depot, the Akshardham temple and the Games village for the 2010 Commonwealth Games – were allowed to come up in the riverbed (Kaur & Singh 2006: 28). He points at the instrumental role that the notion of nuisance – so prominent in the MCD Act – has played here (Ghertner 2008).

Till date, an encompassing vision of the river in relationship with concerns of environmental and social justice is formulated only in embryonic form (Sharan 2011a). Ecological problems are largely addressed in isolation from the social and political landscape of cities (Zimmer 2012b). In this context, Karpouzoglou (2012: 118-19) notes that an integration of health-related parameters into procedures of evaluating water quality and a shift away from the monitoring of water pollution at the point of discharge – i.e. a closer integration of the public health debate with the water management debate – might show a way forward.

4 Truths about waste water: Getting to know the object of government

The compartmentalisation of the waste water debate presented in the last section has significant effects on waste water governance. Knowledge is produced within different perspectives on waste water to construct objects of government and underpin governmental interventions. First, certain data are produced about these objects of government. Second, reasons are identified that explain the problematic data. Because waste water is visible only through the lenses of sanitation and river pollution, knowledge is also partial. Certain aspects

remain invisible, and therefore, unknown. These aspects will be highlighted in the respective sections.

4.1 Data on waste water in Delhi

Regarding sanitation, access numbers are the most important data that are collected. The existing figures indicate that in India in the year 2008, 74% of the urban population were estimated to have access to improved sanitation, while 19.2% of the urban population were thought to practice open defecation (WHO & Unicef Joint Monitoring Programme for Water and Sanitation 2010).[56] In Delhi, 74.1% of non-slum population has access to improved sanitation, 23.1% to unimproved sanitation, and 2.6% go for open defecation. Yet, slum population only has safe access to 23.9%, while 56.3% use unimproved facilities and 19.1% have to go for open defecation[57] (International Institute for Population Sciences & Macro International 2009: 31). This huge gap makes informal settlements a preferred site for governmental interventions with respect to urban sanitation.

From a public health point of view, this lack of access results in a situation, where 7.5% of all deaths in India are attributable to deficiencies in safety of water, sanitation or hygiene (Prüss-Üstrün et al. 2008: 38). By far the highest number of these deaths is due to diarrhoea and its consequences. India thus is positioned 104th amongst 152 WHO member states for which data are available. Expressed in disability-adjusted life years,[58] water, sanitation and hygiene-related diseases are even responsible for an estimated 9.4% of all years lost (ibid.: 39). Here, India ranks 81 out of 135 WHO member states for which data are available.

In accordance with the substantially lower access figures, public health implications are identified especially amongst the residents of informal settlements (UNDP 2006: 48-51). Singh (2009: 187) states that "[i]n disadvantaged informal residential setting, deficiency of sanitation and wastewater disposal infrastructure provision by the civic bodies leave households and communities in an almost 'do-it-yourself' situation". This results in increased exposure to waste water in informal settlements, and subsequently higher morbidity (ibid.: 207; ibid.: 212). In line with this finding, Sakdapolrak (2010: 317) shows how slum residents bear catastrophic economic

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[56] NIUA estimates that coverage by "safe sanitation" in metro cities (>1 million inhabitants) was 59% in 1999 (NIUA 2005a: 111). Numbers of coverage of septic tanks and Low Cost Sanitation do not exist (NIUA 2005a: 38).
[57] The NSSO (2003: 28) has very different results with 70% of notified slums and 22% of non-notified slums having access to septic tanks or flush latrines.
[58] Disability-adjusted life years, or DALYs , compute all life years lost in a population due to disease or disability.

costs of disease burden, with up to 22% of monthly incomes lost due to direct or indirect costs of ill-health.

Regarding access to sewerage in Delhi, figures vary widely between 71% (NIUA 2005b: 115) and 55% of the population (GoI Ministry of Environment & Forest & GNCTD Planning Department 2001: 43). In slums, however, these numbers drop drastically: The NSSO (2003: 29) estimates that none of the notified, and 3% of non-notified slums in Delhi are connected to underground sewerage lines.[59] An estimated 6000 km of peripheral, and 136 km of trunk sewer lines exist in Delhi (CPCB 2004: 2). From sewer lines, sewage is pumped through 36 pumping stations into 27 operational Sewage Treatment Plants (ibid.: 5).

Map 2 shows the location of these plants and the main sewer lines in Delhi. Although the capacity of these plants is below requirement, existing Sewage Treatment Plants actually work under capacity most of the time. This is due partly to the fact that more than 50% of the trunk sewers are damaged or silted, partly to frequent power cuts that inhibit pumping (ibid.: 2; Singh 2009: 54-56).

The sewage in this case gets diverted into the storm water drainage system (GoI Ministry of Environment & Forest & GNCTD Planning Department 2001: 43). This storm water drainage system moreover is used for evacuation of human waste where sewer lines do not exist. Because storm water drains are mostly not covered, solid waste often accumulates in them. This system is flawed: The open drains have a slope of 1/150-200 inch (~0.6%), as opposed to slopes that are five to ten times steeper (3-6%) in sewers (050109VE-ENG), because they have been constructed "exclusively for storm water" drainage (120308BA-DJB). With lower slope (and thus slower flow) any solid material such as faeces and garbage is much more likely to deposit in the open drains (see this part, section 3.1.1).

Open drains then have to be desilted regularly; an activity not carried out often enough to prevent their blocking and subsequent overflow, as will be seen in following chapters. Also, Delhi follows a policy of covering storm water drains in the last years. With this practice, solid waste might be inhibited from falling into the drains; yet, desilting will become more difficult, as manual cleaning will be carried out through manholes exclusively (050109VE-ENG).

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[59]Although at an India-wide level, numbers are better, with 30% of the notified, and 15% of the non-notified slums having access to sewer lines.
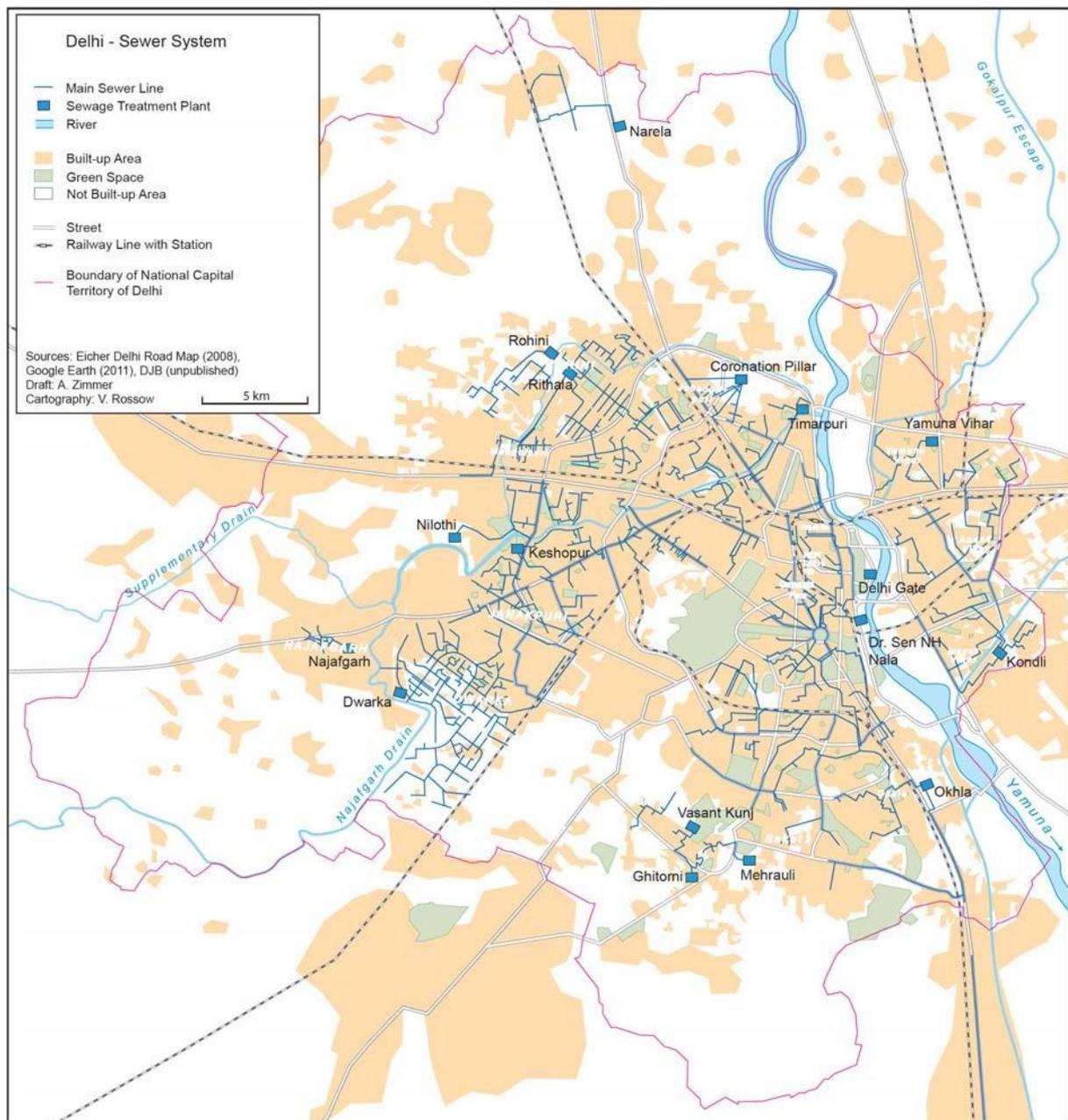
Map 2: Delhi's sewer system – location of sewage treatment plants and main sewer lines.

Because the importance of the storm water system in the discharge of waste water remains largely unacknowledged – and waste water here remains invisible between the debates on sanitation on the one hand, and river pollution on the other – data on it scarce. No figures exist about the total length of this drainage system, no maps locate drains in space. The percentage of silted drains is not recorded. No quality monitoring happens in storm water drains of residential areas. Instead, eclectic lists of bigger drains circulate in offices.[60] In 24 major drains, four

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[60] And recently, in the cyberspace (see e.g. MCD Department of Environment Management Services 2012), listing 564 drains for the whole of the MCD area.

parameters of water quality[61] are measured by the Delhi Pollution Control Committee (Delhi Pollution Control Committee 2012). Especially the Najafgarh drain is in the focus here as this drain (actually a former rivulet) is one of the pollution hotspots of India (Nema & Agrawal 2003; Nag 2007). Exposure to waste water through storm water drains, especially in the rainy season when drains frequently overflow (see part I), is poorly understood. Even less is known about its effects on residents, in terms of health but also with respect to questions of dignity, self-respect, or subjectivities (Karpouzoglou & Zimmer 2012).

Extensive knowledge production begins again when waste water has reached the river. It is estimated that a mere 45% of Delhi's sewage is treated, and that in turn 1,789 million litres of untreated waste water are discharged into the Yamuna every day through the 19 major drains (CPCB 2004: 2). From an environmental point of view, it is therefore deplored that the Yamuna resembles more an open waste water drain than a river outside the Monsoon season. In this period of the year, the full volume of Yamuna water is diverted North of the city for drinking water purposes; the urban part of the 'river' is then made up exclusively of drain water, i.e. waste water. Current figures of water quality in the river are consequently dismal. The Delhi stretch is declared biologically dead, as levels of dissolved oxygen are near zero once the river enters the city (CSE 2007: 89). Also, coliform bacteria counts are several millions above the permissible levels for bathing standard (ibid.: 90; see also GoI Ministry of Environment & Forest 2009: 46).

Because existing data in all the different debates are considered highly problematic, they are considered by different actors – scientists, politicians, as well as activists – a call for action. The situation has to improve, and waste water has to be governed more successfully. Knowledge production therefore includes the explanation of data and the formulation of possible solution. Four powerful discourses can be identified.

4.2 Explaining the dismal figures and proposing solutions

Different institutions and people put forward very different explanations for the fact that a large part of Delhi's population is frequently exposed to grey as well as black water, and for the continuing ecological crisis of the Yamuna. These range from a lack of infrastructure related mainly to financial and planning constraints, to a critique of networked infrastructure, to wrong ways of governing waste water and a lack of political will, and finally faulty practices of

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[61] Namely, the pH, the total suspended solids, the chemical and biological oxygen demand.

inhabitants. Explanations in turn guide suggested policy interventions. Therefore, different suggestions spell out contested waste water governmentalities: Which ways of governing waste water are accepted – and which ones are perceived as problematic, and therefore unacceptable?

4.2.1 A lack of infrastructure: Investment and planning are needed

In section 3.1 of this part I have discussed how the sanitation debate as well as the water management debate focus very strongly on infrastructure provision. In both contexts, lack of infrastructure is used to explain unsatisfying data. Inequality in access is difficult to justify in India's democratic society, and its critique has been strengthened recently by the recognition of the human right to water and sanitation (UN General Assembly 2010), discussed above. Insufficient access is also – as seen in part I – unacceptable for a country that attempts to leave behind the label of developing country. Accordingly, the expansion of the piped network and an increase in numbers of sewage treatment plants is the preferred solution advanced for the restoration of the river Yamuna, as well as the panacea to reduce, or even inhibit citizens' exposure to waste water.

These statement are reflected in large sections of the water and sanitation infrastructure literature where lack of infrastructure is ultimately blamed on three factors: First, lack of financial means (Banerjee 2001: 98; McGranahan et al. 2001: 5; Prasad 2002: 267; Deb 2004: vii; Mavalankar & Shankar 2004: 318); second, lack of proper planning (McGranahan et al. 2001: 87; Zérah 2005: 129; Jenkins & Sugden 2006: 7-8); and third, Delhi's exponential population growth (Shukla 1999: 309; Chandra & Aneja 2004: 2; Singh 2009: 5). All three themes converge in a vision where with time and investment, universal coverage of the sewer system will be achieved.

This focus on infrastructure and planning is for example found in the higher offices of the Delhi Jal Board (DJB) and the MCD Slum Department and Engineering Wing when discussing waste water problems in informal settlements. A representative of the DJB sums up the problem by stating that facilities are lacking in JJ Clusters: "In jhuggis [JJ Clusters], basic amenities are a problem. Instead of first developing amenities, then people follow, there it is the other way around." (270109BA-DJB). This lack is traced back to planning failures or interference with rational planning. The Slum and JJ Department, too, highlights the lack of planning and the illegal status of JJ Clusters to explain the absence of sewers (241108KU-SLUM; 201009VE-SLUM). Interviewees also tend to frame their explanations in terms of a "root cause" (270109BA-DJB; 271009ANONYMOUS): The density of JJ Clusters is named here (050109VE-ENG; 201009VE-SLUM), which is ultimately blamed on the problem of population growth (270109BA-DJB; 271009ANONYMOUS).

In contrast to these explanations, critical voices point out that planning infrastructure is not a politically neutral exercise. Rather, class relationships are important to explain persistently unequal infrastructure provision. They argue that the elites and middle classes have captured a large amount of public investment in order to obtain sewerage systems, while working classes have not been able to do so ({Chaplin, 2011 #792: 8van Dijk & Sijbesma 2006: 11; Black & Fawcett 2008: 36; Kundu, A. 2009). Entitlement of the poor to public services is generally lower than that of non-poor citizens (Banerji 2005: 5). Lack of power of the poor is related to their conceptualisation as outside the sphere of citizenship, leading to a denial of citizenship-based rights such as provision with public infrastructure (McFarlane 2008b: 106). This argument will be discussed further in part V, section 3.

4.2.2 The wrong kind of infrastructure: Decentralised options should be favoured

In contrast to the first explanation, especially environmental NGOs but also several development agencies have started criticising the model of fast evacuation of waste water from urban areas, and the pertaining technologies of water closets and piped sewerage in recent years. Environmental discourses have played a role here in reformulating policy goals (Narain 2002). Moreover, the extremely high costs of sewer systems might be inhibiting for developing countries (UNEP et al. 2004: 47). Precisely the insistence on the network is portrayed as a reason for failure to improve water quality in rivers and reduce citizens' exposure to waste water (van Dijk & Sijbesma 2006: 13; CSE 2007; Tayler 2008: 31).

As an alternative, new forms of on-site sanitation solutions, so called "ecological sanitation" options are being discussed (e.g. GTZ 2003; Langergraber & Muellegger 2005; CSE 2008; Sustainable Sanitation Alliance 2008; Tayler 2008). These include latrines where urine and faeces are separated at source, and usually favour composting and recycling of faeces as fertiliser, or treatment of waste water in a decentralised way (Tilley et al. no date: 16-25). Especially from the perspective of environmental NGOs, ecological sanitation is the way forward, and efforts are undertaken to investigate the viability of decentralised options in densely populated urban areas (Heeb & Gnanakan 2003; Slob 2005). Questions regarding the management and potential recycling of human waste in non-agricultural areas, and the need of space for, as well as the issue of mosquito breeding in open waste water treatment ponds remain, however, unanswered today. Also, the transfer of technology in different cultural contexts is problematic. In Europe, dry toilet systems are advocated. However, the specific Indian conditions of manual scavengers make these systems illegal in the subcontinent (see footnote 52). Instead, emphasis here is on twin-pit pour flush latrines, such as the ones advanced by Sulabh International (Pathak 1999).

From the side of the state, the focus is on low cost technological solutions mostly in order to reduce public expenditure and make the technology accessible to all. Yet, the Ministry of Urban Development points out that the relatively wide sewer network in Delhi should lead to all city areas being connected in the future; other cities, however, might not be able to emulate this model (290109NI-UD). Accordingly, the Delhi Master Plan 2021 attributes only an interim and "short range" (DDA 2006: 135) role to decentralised options, which should allow future connection to sewer lines. Effects of this discourse on waste water governance in Delhi is accordingly minimal.

4.2.3 The wrong governance: Strengthen coordination, implementation and participation

A further explanation put forward blames lack of universal coverage and ongoing exposure of certain parts of the population to waste water on faulty governance (Hardoy et al. 2001: 383). This term implies a host of arguments, and needs to be unpacked.

Rather mild critique is couched in the language of governance, when lack of coordination between government agencies, lack of accountability of service providers and unclear responsibilities are identified as causes for failure to reach the whole city, and especially, the urban poor (Ruet et al. 2002; Deb 2004: 19-20; Zérah 2005: 147; Jenkins & Sugden 2006: 7; Sijbesma & Van Dijk 2006: 23). A related argument holds that while asset creation gets a lot of attention, operation and maintenance suffers from (intellectual as well as financial) neglect (Banerjee 2001: 96 290109NI-UD), leading to the malfunctioning of existing infrastructure. Partly, this state of affairs is related to a lack of devolution of power to local levels of governance, such as municipalities (Banerjee 2001: 97; Hardoy et al. 2001: 383). Yet, there is also a strong discourse on failure of municipalities, and in general of lower ranks of the administration to deliver: lack of implementation of policies on the ground is blamed. In this context, Sharan (2011a) goes so far as to attest an "obsession with implementation" in policy circles. Failure to push for implementation, in turn, is frequently attributed to a "lack of political will" (McGranahan et al. 2001: 317; Mavalankar & Shankar 2004: 5; Jenkins & Sugden 2006: 7). Some authors explain this lacking will with the fact that all matters related to faeces still remain a taboo (ibid.: 7; Black & Fawcett 2008). Commitment to sanitation, as opposed to water, is supposedly less attractive for politicians (ibid.: 75).

More radical critique under the name of governance aims at participation of non-state actors. Attempts of the state of governing waste water all by itself are therefore less and less accepted. On the one hand, neoliberal scholars favour the involvement of the private sector to enhance

the financial status but also the managing capacities of service providers (Deb 2004: 27). These ideas fit with global financial policy discourses that put forward conservative budgetary policies (Banerjee 2001: 160; Gandy 2005: 538-39).

On the other hand, governance failures mean the lack of involvement of the so-called civil society (Tayler 2008: 40). This leads to calls for recognition of the demand for sanitation and preferences in types of latrines and waste-water disposal options (Deb 2004: 22-23; Jenkins & Sugden 2006: 2). More far-reaching is the claim for meaningful participation in decision-making processes as seen also in the context of environmental sanitation debates (Scheinberg & de Bruijne 2005: 8; see this part, section 3.1.3).

Partly, NGOs have been advocating community-built and -managed toilet blocks in slum areas. Some celebrate this development as a way forward to grassroots democracy (Appadurai 2001; Burra et al. 2003) or at least a reason for hope (Chaplin 2007). Others, however, view this development critically because of the dominant role of NGOs as self-proclaimed representatives of the poor (Hardoy et al. 2001: 392; McFarlane 2008a: 3). Some finally interpret the new partnerships as a tool in discharging the state of its responsibilities in times of neoliberal governmentalities (Chandhoke 2003).

4.2.4 The wrong practices: Behaviour change has to be achieved

Finally, citizens' wrong practices are blamed for health hazards as well as deteriorating water quality in the Yamuna and problems of insufficient drainage. There is a strong (more or less explicit) link which is made between these supposedly wrong practices and those groups who are either poor, or less educated, or have migrated to the city from rural areas. It is here that continuing tendencies of Othering in the context of waste water governance are most visible. This discourse, mostly present in policy-making circles, has two strands.

The first strand responsibilises residents with respect to the pollution of the river. Non-core activities of the Yamuna Action Plan I (YAP) for example aimed at awareness creation and public participation to achieve better water quality. The plan concentrated on highlighting the importance of infrastructure maintenance and solid waste management. It also problematised religious activities, such as worshipping the river by offering flowers and other objects of devotion, and the cremation of the dead on pyres on the *ghats*[62] (GoI Ministry of Environment & Forest 2002). YAP I therefore advocated relatively unsuccessfully the use of electric crematoria, and led to fencing of all bridges over the Yamuna with high metal grills. The Performance Review

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[62] Ghats are fleets of steps leading to the river, meant for worship.

of 2002 states that this part of YAP I was "not very effective" (Alternate Hydro Energy Center IIT Roorkee 2002: 8): as allocation of funds was small, "people are barely aware of the programme and the details are obscure to most of them" (ibid.: 9). More strongly focused on residents of informal settlements, and far more violently, this explanation for river pollution was used in 2004 to displace the Yamuna Pushta JJ settlement of an estimated population of more than 150,000, as discussed above (Dupont 2008; Bhan 2009; Ghertner 2010b).

The second strand focuses on the waste water situation in informal residential areas. According to this discourse, exposure to waste water in residential areas prompted by overflowing drains is the fault of (mainly poor) citizens who dispose of their solid waste in storm water drains.[63] Interviews with representatives of the MCD Slum Department and Engineering Wing as well as the Delhi Jal Board (DJB) showed the prevalence of this discourse amongst higher administration officers: DJB and Engineering Wing pointed out that people connected to storm water drains whose lesser slope inevitably leads to sedimentation, choking and subsequent overflow. Therefore, the representative of the Engineering Wing opined that "if the people can be disconnected, most problems will be resolved" (050109VE-ENG). Moreover, residents of informal settlements are seen as reluctant to abstain from open defecation, and are said to throw garbage in streets and drains, further contributing to both drainage problems as well as health risks. An officer of the Slum Department perceived that if infrastructure such as toilet blocks was provided in these settlements, it would be damaged as residents would mishandle it (240909KU-SLUM). He continued: "Somewhere they have choked the drains; they put the garbage in there when they clean their jugghis [huts]. They are not much educated, they don't get this kind of training; the class is like that." The statements show clearly that to the state, practices of residents in informal settlements are not acceptable. Because these practices are discursively linked to education, educative as well as punitive measures are suggested as solutions to problems of exposure to waste water.

5 Recent reforms in waste water governance: Implications for waste waterscapes in informal settlements

Governmentalities are translated into ground realities through practices (see part II, section 6.1.4). The ways of seeing and knowing waste water presented above point to several possible

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[63] In the 'Reader Friendly' version of the Delhi Master Plan lack of drainage is blamed "mainly (…) [on the] encroachment of slum dwellers along the drains which causes choking of the drains" (Singh 2007: 208), although the dumping of solid waste into drains (regardless of the type of colonies where this happens) is also recognised as a reason of blocks.

solutions which should be employed to solve what is perceived as problem – exposure to waste water, and river pollution. Which governmentalities find their expression in recent governance reforms?[64] And what are the effects of the compartmentalised waste water debate, as well as of the Othering tendency in waste water governance, noted above, on waste waterscapes in informal settlements?

Because of the compartmentalised debate, different agencies are responsible for water, health and sanitation. Reforms in these three areas are thus not integrated with the aim of best waste water governance. Rather, efforts are undertaken separately from within the debates on river pollution and sanitation to tackle pollution and exposure to waste water. With regard to informal settlements, unconnected to the sewer system, it turns out that governing waste water takes place almost exclusively from within the sanitation debate.

5.1 Increasing the coverage of the sewer network or trapping drain water?

Within the river pollution debate outlined above, recent initiatives focus very prominently on the extension of the sewer network. This focus is not new, and its effect is visible from the first governmental interventions on river pollution onwards. Concerns in Northern India were addressed most prominently by the Ganga Action Plan starting in 1984. In 1993, the related Yamuna Action Plan (YAP) was initiated. YAP focused mainly on the extension of sewer lines and sewage treatment plants in order to control water pollution.[65] In 2011, it is expected that YAP's phase III will be approved soon. Under this phase, 1,656 crore Rs (~250 Mio. €) of Japanese loans would be spend with a focus on expanding Delhi's sewer system in order to tackle pollution (The Hindu 2011c). The 2005 Jawaharlal Nehru National Urban Renewal Mission (JNNURM), too, formulates the goal of providing 100% coverage of water and sanitation services in cities by 2021 (GoI Ministry of Urban Development 2006: 7-8; Rama Rao 2009: 229).[66] Moreover, the National Ganga River Basin Authority was founded in 2009 and led to the formulation of the National Ganga River Basin Programme (NGRBP). While the Government of India invests 556 million USD, the World Bank has granted financial support of 1 billion USD to this project on May 31, 2011. Plans are (among other goals) to vastly expand the sewer systems and number of sewage treatment plants in the basin (World Bank 2011a).

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[64] Obviously, waste water has been addressed through the years by a plethora of initiatives e.g. the Urban Basic Services Programme or the Environmental Improvement of Urban Slums Scheme (Chaplin 1999: 152; GNCTD Planning Department 2011a: 102ff). All these initiatives have not enhanced the situation substantially. To discuss all these initiatives would lead beyond the scope of this thesis.
[65] Non-core activities also included the construction of public toilet blocks.
[66]The JNNURM is supposed to become the umbrella programme for all basic service-related schemes.

In addition to these initiatives, Delhi Jal Board has advanced the project of three major interceptor sewers along the main storm water drains in Delhi to capture the waste water from unsewered areas, a project sanctioned in 2010 ({Engineers India Ltd., 2008 #740}CSE 2009). This project is interesting because it demonstrates the effect of the compartmentalised waste water debate very powerfully: The construction of interceptor sewers exclusively concentrates on concerns of pollution in the river Yamuna – while it abandons the idea of access to sanitation for inhabitants of Delhi's informal settlements completely. It thus seems to be acceptable to ignore sanitation and public health here, while river pollution cannot be tolerated. This initiative might therefore mean that coverage by the sewer system remains a far dream.

However, future developments are unclear, as heavy investment is flowing into extending the network at the same time. The data of the State Government reveals that the expansion of the sewer network enjoys high priority. On top of State resources, National funds such as the discussed Jawaharlal Nehru National Urban Renewal Mission (JNNURM) and National Ganga River Basin Project (NGRBP) allocate money for this purpose.[67]

 But how does governing waste water work while residential areas are not connected? Where no sewer lines exist, waste water governance takes place largely from within the debate on sanitation. The next sections discuss governing interventions in detail.

5.2 The National Urban Sanitation Policy

By law, sanitation is the matter of the States (The Constitution of India 7th Schedule, List II, 6. & 17., see GoI 2007 (last amendment)). Therefore, the National Government can only formulate a legal and policy framework in order to reform waste water governance from within the sanitation debate. The National Government has formulated the National Urban Sanitation Policy (NUSP) in 2008.[68]

5.2.1 Forcing people to talk about sanitation

Showing that the marked priority of water debates – visible in the large investments seen above – is noted by policy-makers in Delhi, the major aim of the NUSP was "to force people to talk about [sanitation]" (290109NI-UD). The policy recognizes that sanitation is important in order to

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[67] JNNURM money is allocated to Delhi, and sanctioned projects can be seen under (GoI Ministry of Urban Development 2011). NGRBP, however, allocated money to "priority infrastructure investment" in the whole Ganga Basin. Because this project is so new, no details are found yet about planned projects in different cities or States (World Bank 2011b)

[68] The formulation of the policy was supported financially by USAID and the World Bank through the Cities Alliance to which both are members, and executed by the National Institute of Urban Affairs (Cities Alliance 2011; World Bank 2011c).

meet the Millenium Development Goals (GoI Ministry of Urban Development 2008: 2), pointing to India's wish to perform in terms of development. In this line of thought, two important points are a critique of open defecation (ibid.: 2; ibid.: 5) and the aim to overcome the cultural bias against sanitation-related work (ibid.: 5), both markers of 'backwardness' in the development discourse.

The policy focuses on environmental sanitation (ibid.: 1), integrating solid waste management, drainage as well as the safe disposal of excreta. Although this is partly motivated by concerns of the environment, these take a back seat in comparison to public health (ibid.). In a personal interview, a representative of the Ministry emphasises the problematisation of waste water in a social context more than in an ecological one:

> "the environment was not the main thing. (…) It is more about urban infrastructure provision, since this is the mandate of our Ministry, and also, there is the health aspect, because (…) [lack of sanitation] costs so many lives. Also, there is an Act which demands to eliminate scavenging, so we have to provide proper toilets, and even from a human rights perspective people went to the Human Rights Commission for the right to defecate in a proper place. I mean, legally you could drag someone to court for not eliminating scavenging." (290109NI-UD)

For her, central issues thus range from standards of urban infrastructure to health hazards and the right to have toilets, and finally to the elimination of manual scavenging.

The debates discussed in section 3.2 of this part find their expression in the policy in several ways: A major lack of urban infrastructure is acknowledged. Regarding criticism of networked infrastructure, the importance of safe management of on-site structures is recognised in the Policy (GoI Ministry of Urban Development 2008: 4). Especially in "difficult existing situations (e.g. dense areas with on-site systems draining into nalis [storm water drains]" (ibid.: 25) – a euphemism for informal settlements – the Ministry suggests to States that step-wise upgrading of on-site solutions might be realised. Questions of governance are addressed when the Ministry calls for a greater role of NGOs in order to increase participation and lower public expenditure (ibid: 21; ibid.: 27). But not only NGOs, also the private sector should contribute to achieve universal access: the representative of the Ministry adds corporate social responsibility to possible sources of financial support (290109NI-UD). She also criticises a lack of political commitment at State level (290109NI-UD), pointing to a problematisation of a 'lack of political will' and of implementation. Behaviour change plays a major role in the goals formulated by the policy. This point which indicates that processes of Othering are at work here will be taken up in detail in section 5.2.3 of this part. For the time being, Delhi has not formulated a State Policy under this framework yet.

5.2.2 Technologies of performance for India's municipalities

In the shadow of the NUSP, India has embarked on a 'National Rating and Award Scheme for Sanitation for Indian Cities' through the Ministry of Urban Development. The scheme represents a practice of performance used to put pressure on municipalities. It ranks all 423 cities above 100,000 inhabitants on the basis of several points, including freedom from open defecation, safe management of waste water and storm water, collection and safe disposal of solid waste and services to the poor. This might further increase pressure on municipalities to address the situation in informal settlements.

On May 10, 2010 first results have been released (GoI Press Information Bureau 2010). While none of the cities reached the status of "healthy and clean", only four ranked in the second category. Delhi's three municipal areas get very different ranks: New Delhi Municipal Corporation is on number 4, Delhi Cantonment on number 5, but the large area of MCD ranks only 168, and is thus declared in need of "considerable improvement". With this result, it lags far behind India's other metropolises like Kolkata, Chennai, Greater Mumbai, Pune and Hyderabad. But next to direct rewards or punishment, the ranking allows going a step further in working on municipal practices. The head line of the Times of India summing up that the big metropolises of the country have been put "to shame" (The Times of India 2010b) shows very clearly how technologies of performance ought to work: being ashamed of performing worse than others, this feeling is supposed to translate into a better self-government of the actor, in this case, the urban local body.

5.2.3 Technologies of agency for residents of informal settlements

The NUSP further targets educational initiatives at individual citizens and communities who supposedly have the wrong practices and thus contribute to waste water-related problems. Section 4.2.3 of this part has shown that the discourse on behaviour change refers mainly to residents of informal settlements. Residents are supposed to learn that their practices are wrong and take responsibility for their acts by changing their behaviour. Educational initatives thus form part of practices of agency although they are simultaneously inscribed in larger attempts at disciplining certain populations. Through such programmes, inhabitants are assigned the subject-position of the governed, and powerful relationships are established.

The NUSP highlights the importance of awareness programs to prevent choking of drains and eliminate open defecation. Behaviour change, together with awareness creation, comes first in a list of policy goals (GoI Ministry of Urban Development 2008: 3). People should be encouraged to adopt "healthy sanitation practices" (ibid.). Consciousness regarding sanitation is considered

"the first step in making the cities 100% sanitized" (ibid.: 15). The Policy recommends an encompassing information, education and communication strategy (ibid.: 7) to the States. According to the representative interviewed, this strategy needs to target especially the male population:

> "behaviour change is an important aspect too, the awareness, because people have a very casual attitude towards defecation. Maybe women, because of the shame issue, they are more inclined in using a toilet, but men are happy to do it anywhere, so there is a big awareness campaign which is going to take place." (290109NI-UD)

Criticising people's perceived apathy, the representative of the Ministry of Urban Development deplores Delhi's "government mindset". She is slightly optimistic, though, because "I don't think people are looking at the government so much, they are upwardly mobile now" (290109NI-UD), pointing at possible strategies of self-help in terms of infrastructure provision, once incomes rise. In accordance with these observations, Sharan (2002: 34) notes that "there is a new optimism [amongst policy makers] that managing the environment can be made an individual responsibility". From the National Government, however, the idea of educating the inhabitants of informal settlements remains vaguely spelt out.

5.3 The institutional set-up and the role of scavengers

The 74th Constitutional Amendment authorises the States to delegate public health, sanitation conservancy and solid waste management amongst other responsibilities to the municipalities (GoI 1992). This includes the sweeping of streets and cleaning of storm water drains. Governing waste water from within the sanitation debate therefore prominently takes place at the level of municipalities as well. In order to understand who are the main actors in governing waste water here, the next section looks into responsibilities in Delhi.

5.3.1 Responsibilities

The institutional set-up in Delhi – with its three layers of government – is complex, and the water and sanitation sector is no exception (Maria 2006: 117-18). The Delhi Development Authority, a body under the National Government set up among other tasks for developing planned colonies, is responsible for providing drainage facilities in its residential areas (GoI 1957a, Art. 6). The responsibility of draining waste water in the rest of the Municipal Corporation of Delhi – including all informal settlements – is split between the State and the Municipal level of governance and several bodies. The set-up is, to use a euphemism, confusing. Responsibilities

for handling waste water are spread between several departments, reflecting the categorisation of waste water in storm water and municipal or industrial waste water identified in this part, section 1.

First, the sewer system is entirely the responsibility of the Delhi Jal Board (Delhi Water Board), a parastatal body at State level (GNCTD Department of Law Justice & Legislative Affairs 1998: Art. 9 (1)e). Second, the storm water drains – in theory for storm water only, but effectively the recipients of waste water where sewer lines do not exist, as seen in this part, section 4.1 – fall under the responsibility of several agencies of both governance levels. Apparently, plans have been discussed for modifying this set-up, but have been rejected so far. The Delhi Jal Board, in a letter annexed to the Delhi Master Plan 2021, states: "to create one single agency for the management of surface drainage and sewerage is a cumbersome subject because lot of agencies are involved in the management of surface drainage whereas [the] sewerage system is managed by DJB" (DDA 2006: A-18).

Therefore, until today, building of drains is mainly divided between four agencies.[69] Large drains with a capacity of more than 1,000 cusecs[70] are built and maintained by the Flood and Irrigation Department of the Government of National Capital Territory of Delhi (271109KU-IFD; Singh 2009: 56). Smaller drains within residential areas are built by the Engineering Wing of the Municipal Corporation. Inside JJ Clusters, however, the MCD Slum and JJ Department is responsible for drain construction. Yet, under major roads which fall in the jurisdiction of the Public Works Department of the Government of National Capital Territory of Delhi, building of drains is with that agency (050109VE-ENG).

Desilting and cleaning of drains is completely under the MCD, as this is considered part of sanitation conservancy and merges with solid waste management where drains are open and used for solid waste disposal. Drains up to four feet wide (i.e. ~1,20m) are with the Department of Environment Management Services (DEMS), while bigger drains (including those along the PWD roads since 2008) are under the Engineering Wing for that matter (050109VE-ENG). In order for DEMS to clean drains in JJ Clusters also, the Slum and JJ Department pays an undisclosed amount of money to DEMS (021209SI-DEMS). The different responsibilities of the various agencies are illustrated in figure 9.

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[69] To my knowledge, at least one more agency, the parastatal Delhi State Industrial and Infrastructure Development Corporation, is also responsible for road construction which includes construction of open drains to the sides. The quoted letter of DJB in the appendix of the Master Plan names "General Wing, MCD, CSE (MCD) [the earlier Conservancy and Sanitation Engineering Department, now divided in Engineering Wing and Department of Environment Management Services], DDA, PWD [Public Works Department], Irrigation and Flood Department, Govt. of NCT of Delhi etc." (DDA 2006: A-18).

[70] Cusecs = m³/sec of water flow.
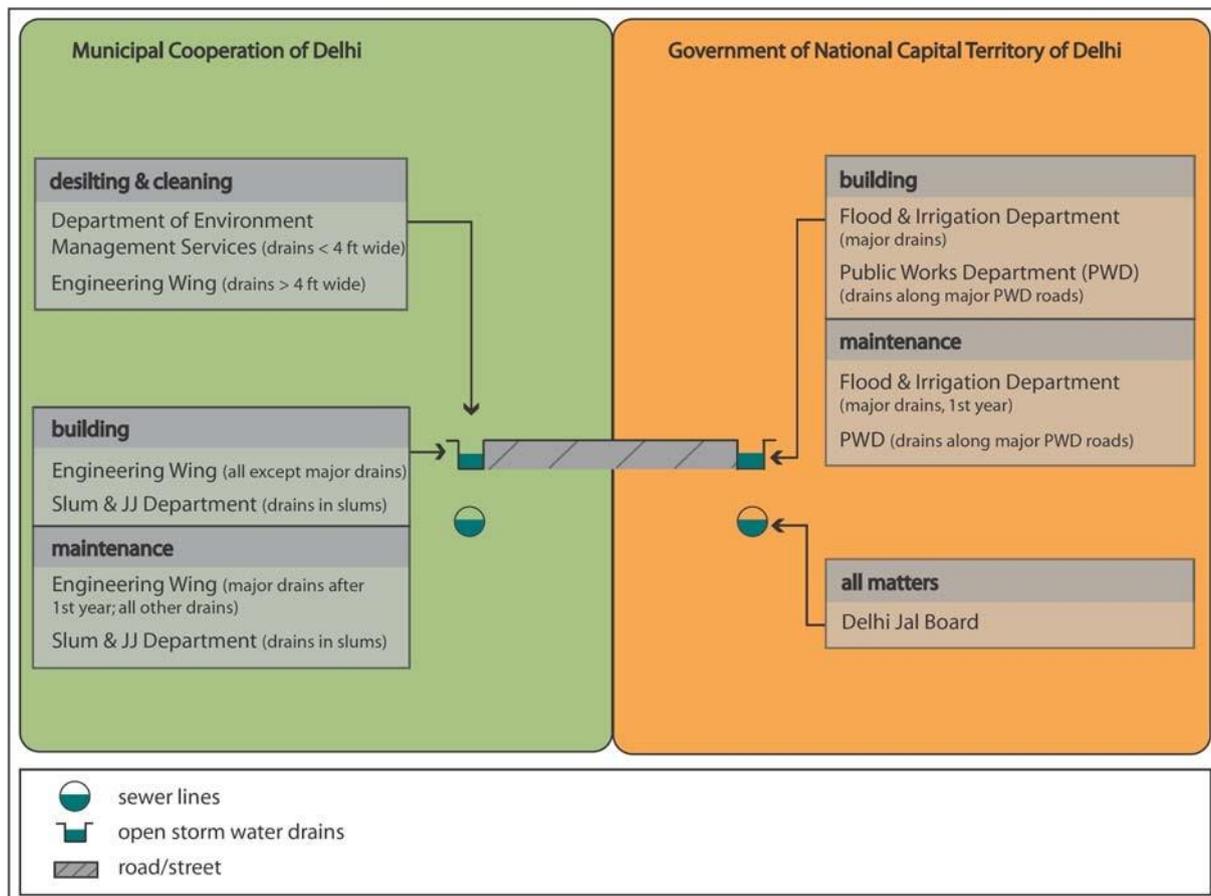
Fig. 8: Responsibilities in the waste water governance. (Draft: A. Zimmer)

Due to the institutional fragmentation, the absurd situation arises, that while Delhi Jal Board has the mandate to govern sewage, DEMS, which in theory is not concerned with municipal waste waters, ends up governing large parts of it – and especially the part produced in informal settlements – because it manages the cleaning of storm water drains. That this fact is not acknowledged is made explicit in the letter of the Conservancy and Sanitation Engineering Department (predecessor of DEMS, as discussed below) in the appendix of the Delhi Master Plan: here the department holds that its responsibility consists exclusively in the "disposal of storm water drainage" (DDA 2006: A-36). There is no responsible state actor therefore which assumes waste water governance in unconnected areas. De facto, however, DEMS is the main actor to look at, as in the absence of sewers, cleaning of internal drains is crucial to maintain drainage and avoid exposure to waste water.

Yet, between the Slum and JJ Department and DEMS, too, responsibilities for cleaning drains in JJ Clusters are shuffled around at least discursively: In an interview with an officer from the Slum and JJ-Department, he denied that sanitation was part of his tasks: "We are not providing [any sanitation service in the JJCs]" (241108KU-SLUM). He explained that waste water drains were

cleaned by DEMS. Moving on to the DEMS offices, however, I learned that "slum clusters are exclusively dealt with by the Slum Department, even the drainage. […]There are territories which have been defined; within their [Slum Department's] territory we do not go" (241108SU-DEMS). Only more than a year later I got to know that DEMS received funds from the Slum and JJ-Department to take over cleaning tasks (021209SI-DEMS), and even then, written evidence of this was not made accessible.

5.3.2 The Department of Environment Management Services (DEMS)

DEMS was set up in 2000, separating the engineering and environmental mandates from the earlier Conservancy and Sanitation Engineering Department. This move followed the formulation of the Municipal Solid Waste (Management and Handling) Rules (071108HA-SI; 241108SU-DEMS; The Gazette of India 2000). DEMS' new mandate is to maintain hygiene and cleanliness in the city, and to do so, the Department has an extensive decentralised structure. It is represented in each of Delhi's 12 zones by one or two Sanitary Superintendents, each assisted by one or more Chief Sanitary Inspectors. In the administrative units under the zones, the wards, DEMS is represented by a Senior Sanitary Inspector as well as one or more Assistant Sanitary Inspectors, a number of Sanitary Guides, eventually MATS[71] (i.e. scavengers and sweepers with supervising responsibilities), and finally the sweepers and scavengers (in Hindi *safai karamchari*) (see Fig. 10).

A yardstick rule is used to calculate the necessary number of scavengers in one ward. If drains are up to nine inches (~ 23 cm) deep, one scavenger has to look after 3500 running feet (little more than 1 km) of drain. Between nine inches and four feet (~ 1.20 m), one scavenger has to look after 2500 feet (~ 760 m) (230909SU-DEMS).

In total, the Department employs around 78,000 *safai karamcharis* (The Times of India 2010a). It is estimated that 90% of the scavengers belong to the Valmiki caste[72] (071108HA-SI). *Safai karamcharis*, counted as class D employees, are recruited locally at the DEMS headquarters through an open application process, but recommendations of the union of scavengers or individual staff are de facto needed to get appointed (041109AK-DEMS). In a first step, staff members are employed as substitutes. At zonal level, the Sanitary Superintendents have a list of substitutes and allocate work days amongst them on a rotation basis.

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[71] Although insisting that MATS was an abbreviation, none of our interview partners could explain the full form of this designation.

[72] Valmiki, as mentioned before, refers to the Bhangi caste. As all interview partners chose the designation of Valmiki, the thesis follows this wording.

Fig. 9: Department of Environment Management Services – organisation in the zones. (Draft: A. Zimmer)

Scavengers then get employed as daily wagers, who earned a maximum of 3,784 Rs/month in 2009[73] (230909SU-DEMS). Only after several years of service a promotion onto a permanent post can take place, after which *safai karamcharis* are paid between 12,000 and 18,000 Rs/month[74] (230909SU-DEMS). Moreover, this promotion is bound to a vacancy, as the Municipal Corporation has put a ceiling on new recruitments (041109AK-DEMS), and the process is rid with corruption (071108AN-SK; 160109SK-G; 150109MU-MATS). To date, 32,220 permanent employees are assisted by 43,415 substitutes and around 2,481 daily wagers (The Times of India 2010a).

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[73] This refers to a month in which daily wagers attend work for a minimum of 15 days, and is according to the Central Government Minimum Wages Act.

[74] This is according to the Central Government Pay Package.

If scavengers are literate, they can receive the designation of MATS which gives them supervising responsibilities, although their formal rank (and pay) remains that of a *safai karamchari*. If they pass the Sanitary Inspector Diploma, they can get promoted further to Sanitary Guard and Assistant Sanitary Inspector (ASI). For the ASI level, however, 50% of the staff is recruited directly through the Delhi Subordinate Services Board competition. For higher posts, recruited staff is promoted by seniority principle (041109AK-DEMS).

5.3.3 Technologies of surveillance for Delhi's scavengers

Substantial efforts can be observed at municipal level in order to discipline administrative staff in the wards and prevent absenteeism and what is perceived as negligent exercise of duties. The discipline of scavengers is recognised to be essential for attaining cleanliness, an argument visible already in colonial times, and shortly after Independence (Delhi Municipal Corporation Act, (Art. 387); GoI 1957b).[75]
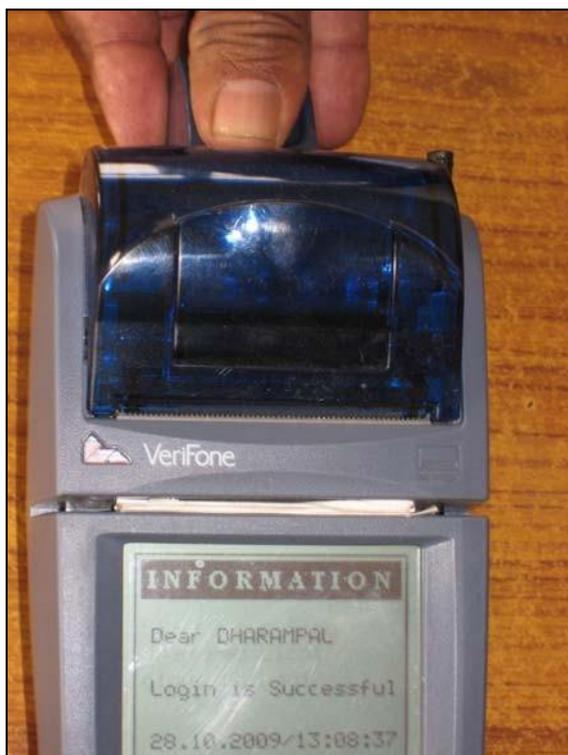
Photo 6: The biometric attendance machine. (Photo: A. Zimmer, October 28, 2009)

Within DEMS, first attempts at controlling ground staff entailed the techniques of attendance calls in the morning and in the afternoon as well as 'rounds' the Sanitary Guide took to supervise scavengers' performance. More recently, a new device has been introduced: In 2009, the Department proudly presented its biometric attendance machine that takes the fingerprints of scavengers twice a day (see Photo 6). The period of time in which data can be transferred to the headquarters is short, so that late arrivals are equated to not attending work. This device not only centralises control over attendance, thereby attempting to shortcut ways of signing in scavengers who do not show up by corrupt Sanitary Inspectors or Guides; it also prevents the practice of subcontracting other people to do the work in place of the employed scavenger, which is quite common (Shinoda 2005: 139).

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[75] The article states that scavengers are not permitted to resign or absent themselves without one month of prior notice in case they are publicly employed, or 14 days, in case they work on private premises.

As a result of introducing the biometrical attendance machine, several irregularities have been uncovered; the most striking of which is the existence of 22,853 'ghost employees' of DEMS, i.e. employees who receive salary, but do not actually work (The Hindu 2010b). In the investigations of this number, it also turned out that the Department is employing much more than the sanctioned 10% substitute *safai karamcharis*. While DEMS held that the substitutes created confusion and were unjustly labelled as 'ghost employees', the police has recently opened an investigation to verify the identity of these *safai karamcharis* (The Times of India 2010a; zeenews 2010). These effects show how the technology of government introduced by the Department to conduct scavengers' conduct is now used by higher authorities to control the hiring practices of DEMS itself.

6 Concluding remarks

What can be learned from the above deliberations about the waste water governmentalities in Delhi for the analysis of waste waterscapes in informal settlements? First of all, waste water governance has received new impetus in the context of Delhi's ambitions to become 'world class'. This impetus is predicated on the fact that waste water is inherently associated with dirt, and 'dirty cities', where residents are exposed to waste water and rivers are polluted through untreated waste water discharge, are not acceptable for India any longer.

Starting from as early as the 18th century, it is not tolerable for a state to remain inactive if its citizens die of avoidable water-related diseases. The recent decision to recognise sanitation as a human right moreover highlights that it is unacceptable today if states do not make efforts to protect their citizens' dignity with respect to defecation. This leads to global relations of power, in which processes of Othering assign to certain states the position of the governed. These processes target nations of the Global South, labelled as 'developing countries' among others on the basis of health- and infrastructure-related rankings. Quantitative data are gathered on both access to sanitation facilities and river water quality. These data are moved within a discourse of development, working towards a global hierarchy between industrialised countries, with 100% coverage and clean rivers, and developing countries, with 'backlogs' in providing access and polluted streams. The figures function, in Foucauldian words, as technologies of government. If a state wants to leave the label of developing country behind, it has to achieve better public health figures, and ensure its citizens have access to improved sanitation. India's attempt to improve access to infrastructure and public health can therefore be read as an attempt to break away from the image of developing country, and to leave the position of the governed.

This translates into a situation where to fit with India's growing international ambitions and the desire to attract Foreign Direct Investment, Indian cities – and especially the capital Delhi – have come under increased pressure: municipalities as well as citizens ought to 'perform' better in terms of sanitation. There exists consent about the fact that exposure to waste water and river pollution should be avoided. This makes waste water (and related practices) an urgent object of government, albeit one visible only through the lenses of either water, health, or sanitation. Governing practices target the Municipality, as well as marginalised groups, such as scavengers and inhabitants of informal settlements.

In recent years, several reforms have been brought on the way, which affect the waste waterscapes in Delhi's informal settlements. These are informed by international debates on water management, public health and (environmental) sanitation. This compartmentalisation has effects for how waste water is governed. The institutional set-up and management of waste water, for example, shows that a split between sewage and other forms of waste water persists since colonial times. Already under the British, sewage and sullage were distinguished. Today, sewage and storm water are dealt with through different governance levels, with sewerage infrastructure being the responsibility of the Delhi Jal Board, and storm water infrastructure falling into the jurisdiction of several agencies (see this part, section 5.1.1). As a result of a situation, where sewage is discharged through storm water drains however, institutions not equipped to deal with sewage are in fact put in charge of its handling.

For informal settlements which are not connected to sewer lines, this means that only storm water is governed officially. Waste water governance in contrast takes place without even acknowledging it, and no state actor has the official responsibility for it. Waste water governance, here too, is based on two distinct debates.

Within the water debate, reforms of waste water governance focus on the sewer system. A slow recognition of the role of decentralised sanitation options, especially for informal settlements, seems to take place. Till date, however, this recognition is formulated mainly at international level and outside state agencies. Public investments in India are still concentrated on piped infrastructure. The goal to achieve full coverage of the sewer system by 2021 remains (DDA 2006: 135), and heavy investment takes place currently to realise this aim. However, as long as informal settlements remain unconnected, governing waste water here takes place mainly from within the sanitation debate.

In the context of sanitation, governing practices have been continuously couched in the language of 'nuisance': it is acceptable to govern those who supposedly create 'nuisances'. In colonial time, both colonisers and Indian elites were fighting against 'nuisances', created by 'natives' and the 'poor', respectively. After Independence, 'nuisance' was the central concept around which waste water governance was formulated in the Delhi Municipal Corporation Act. The new Millennium has witnessed an increased use of the notion of 'nuisance' within a logic of bourgeois environmentalism, as seen in this part, section 3.2.3, in an attempt to control waste water-related practices of populations residing in informal settlements. As in informal settlements poor groups and Scheduled Castes are overrepresented when compared to the total population (Chandrasekhar & Gebreselassie 2008: 90-92), this can been seen as a continuous targeting of economically weaker and lower caste members of society.

The debate on nuisances shows that waste water governance, especially with respect to informal settlements, continues to function within processes of Othering. Mann (2007: 10) notes how the 'dirty native city' was required for the colonial logic: By associating 'nuisance' with the Indian population, the highly unequal social order of colonialism could thus be maintained. The same holds true for the social order between classes or castes: with the 'dirty poor' (residing in informal settlements) or *dalits* as the middle-class or general caste Other, governmental interventions directed at controlling economically weaker and socially deprived sections of society can be legitimised as necessary to maintain public health and order.

Governing waste water in the context of sanitation also continuously works with the help of disciplinary tools. These have taken modern forms: biometric attendance machines or rankings are technically innovative devices in the attempt to govern those who do not 'perform' as expected. Behaviour change, too, has been advocated from colonial times onwards. Today, however, measures to achieve behaviour change include more and more technologies inscribed in regimes of agency. Regimes of agency in Delhi (as elsewhere) target predominantly those populations that have less income, and less formal education, i.e. the residents of informal settlements. Before turning to governing practices in informal settlements in Delhi, these areas will be discussed in more detail.

V Delhi's informal settlements

This thesis is interested above all in the analysis of waste waterscapes in informal settlements. Part IV has shown how waste water governance there is predicated upon processes of Othering, criticising inhabitants' practices as less clean and hygienic. But it is important to integrate these findings with larger processes of governance that centre on informal settlements.

In part I, informal settlements had been defined as "i) residential areas where a group of housing units has been constructed on land to which the occupants have no legal claim, or which they occupy illegally; ii) unplanned settlements and areas where housing is not in compliance with current planning and building regulations (unauthorized housing)" (UN Department for Economic and Social Information and Policy Analysis 1997: 43). This part of the thesis tries to understand the phenomenon more in depth. The aim is to analyse how waste water governmentalities in Delhi effectively combine with ideas about how to acceptably govern informal settlements to contribute to the production of waste waterscapes in these areas.

The argument is that informal settlements in general are considered as spaces of risk. This conception has two dimensions: on the one hand, they are understood to present risks to their residents, such as exposure to waste water. The introduction has already problematised that residential areas in Delhi have extremely different standards of living and public service provision (GNCTD 2006b: 44-56). Regarding waste water, this means that the vast majority of informal settlements are located in the blanks of the sewer map. On the other hand, informal settlements are seen as presenting risks to the rest of the city because they are unplanned and exhibit a lack of control of authorities. Under this overarching perception, however, the two types of informal settlements found in Delhi – JJ Clusters and Unauthorised Colonies – are constructed very differently. While the discourse on JJ Clusters focuses on nuisances they supposedly create for residents of better areas, the discourse on Unauthorised Colonies depicts them as spaces of opportunities that should be integrated into the urban fabric under certain conditions. This in turn leads to different technologies of government in both areas: JJ Clusters increasingly face demolition and partly resettlement initiatives and are governed by a regime of discipline; Unauthorised Colonies in contrast are in the process of getting regularised and are engaged through a regime of citizenship. This development points to a growing divide between the ways residents of informal settlements are addressed in the governance processes in Delhi and calls for a separate investigation of the different types of informal settlements.

1 Informal housing in Delhi

Delhi has a large stock of informal housing (ibid.: 44). To distinguish different types of housing, residential quarters (so-called 'colonies') are categorised in eight groups: formal planned colonies, regularised-unauthorised colonies, urban and rural villages (especially the former now absorbed into the urban fabric), resettlement colonies, notified slum areas, and informal unauthorised colonies as well as *jhuggi-jhompri-* or JJ Clusters (GNCTD Planning Department 2010: 169). This thesis is centred on informal areas, i.e. Unauthorised Colonies (UACs) and JJ Clusters (JJCs). While UACs conform to the definition quoted above under point ii) – unplanned housing without compliance to planning regulations –, JJCs fall into the category defined in point i) – housing on land occupied without legal title – of the same definition.
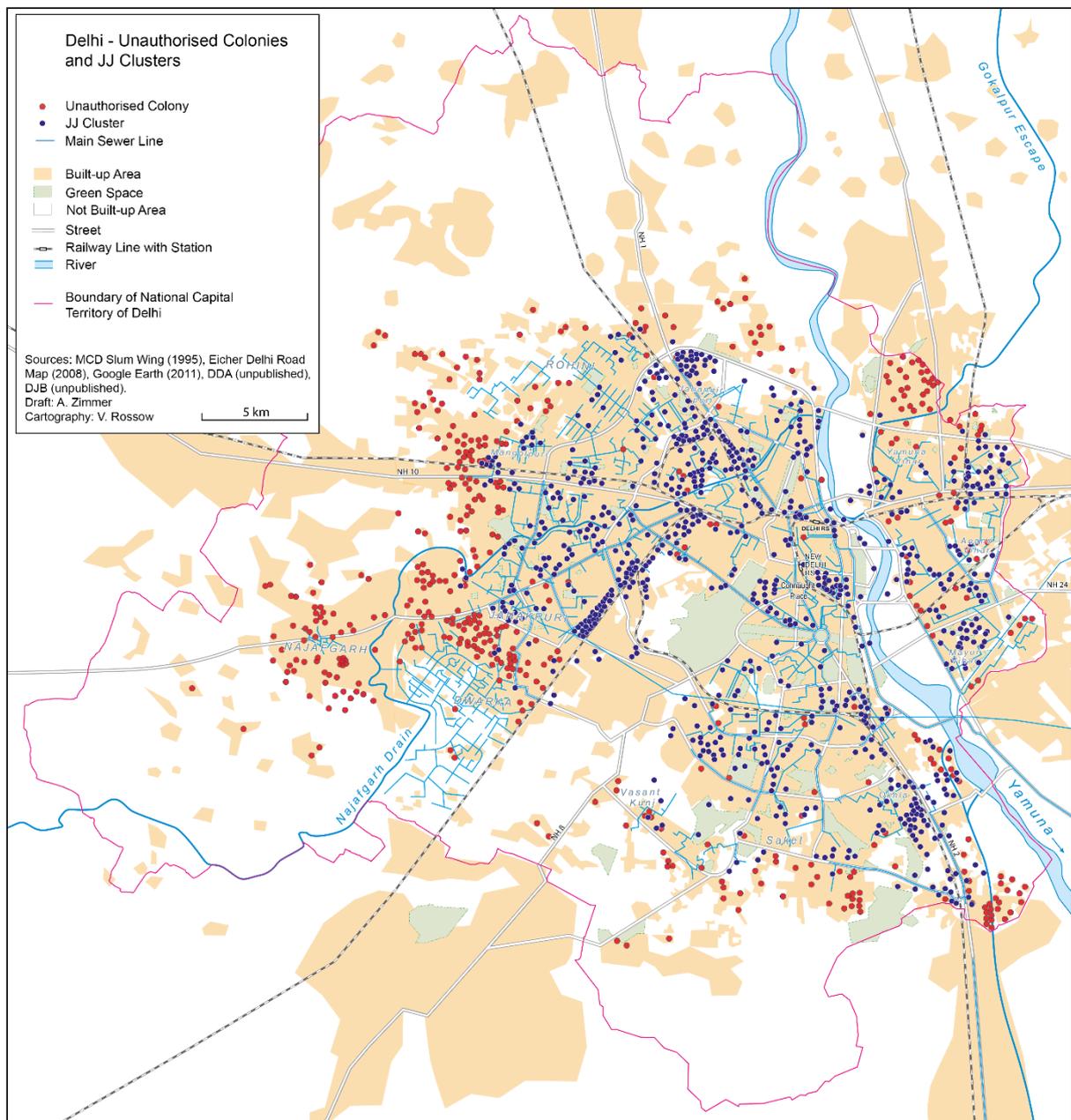
Map 3: Location of Unauthorised Colonies and JJ Clusters in Delhi in relation to the sewer network.

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Map 3 shows the location of these settlements in Delhi in relation to the sewer network. First, it is interesting to notice that UACs are concentrated at the periphery of the urbanised area. Especially in the West, several large clusters of UACs exist, but the Southern and North Eastern fringes also show a high incidence of UACs. JJ Clusters, in contrast, are found in an equal manner all over the urban area, with high concentrations especially along railway lines. Second, particularly the location of UACs corresponds to a striking degree to the blanks of the sewer map, as noted above. That this is less clear for JJCs is due to the generally much smaller size of these settlements as compared to UACs. The following sections will shed more light on both categories of informal settlements in terms of available data.

1.1 Jhuggi-Jhompri clusters (JJCs) – squatter settlements

JJ Clusters are commonly assumed to be the first foothold in the city for migrants who cannot afford housing on the formal market (Bijulal 2004: 2; Sivaramakrishnan et al. 2005: 107). They consist of more or less stable housing structures[76] on public or private land that has not been acquired by the occupants. Despite a wide-spread perception that JJ Clusters offer only temporary shelter, most of them are in fact "established communities" (Mitra 2003: 45; Sivaramakrishnan et al. 2005: 107).

Estimates for the number of people living in JJ Clusters vary significantly from source to source (e.g. Misra et al. 1998: 210; Asthana & Ali 2004: 287). Dupont (2008: 83) recounts how after continuing increases for several decades, the number of JJ residents counted 3 million (or 27% of the urban population) in 1998, to then fall sharply to 2.1 million (or 19.1%) in 2001 following evictions and resettlement initiatives. She is, however, wary about the correctness of available data.[77] The last survey of JJ Clusters in Delhi is of 1994. At that time, 1078 clusters existed in the capital. The settlements counted in that survey are considered 'listed', while newer clusters are not listed, and thus enjoy even less degree of recognition. Recently, the Delhi Urban Shelter Improvement Boards has published a list of JJ Clusters, counting 685 settlements. The board however adverts to the fact that these numbers are not based on a door-to-door survey, but are a "rough assessment" (DUSIB 2011b).

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[76] In India, it is commonly distinguished between *kaccha* housing (made of wood, stapled but loose bricks, plastic sheets, cloth etc.), *semi-pakka* housing (with brick walls, but plastic or wooden roofs), and *pakka* housing (with brick walls and stable roof structures).

[77] It is also important to notice that population data is derived from the approximation of five members per household; the units counted are households, not individuals. This method will be critically discussed in part VI.

Table 1 shows the development of numbers of JJ Clusters and estimated inhabitants since 1994. Inhabitant figures are obtained by multiplying the number of *jhuggis* (dwellings) by five. Since the new Millennium, the numbers have decreased continually.

	Number of JJ Clusters	Number of *jhuggis*	**Number of inhabitants**
1994	1078	480,929	2,404,645
1998	1100	600,000	3,000,000
2001	728	429,662	2,148,310
2011	685	418,282	2,091,410

Table 1: Numbers of JJ Clusters, *jhuggis* and estimated numbers of inhabitants. (Sources: MCD Slum Wing 1995; Dupont 2008; DUSIB 2011a)

55% of Delhi's JJ population is made up of Muslims and Scheduled Caste citizens[78] (Bijulal 2004: 5). JJ Clusters are also characterised by high percentages of poor households; the situation is slightly better in listed than in unlisted JJ Clusters (Mitra 2003: 82). Poverty thereby affects mostly big households, the illiterate, construction labourers or unemployed people, and female-headed households (ibid.: 88-90).

1.2 Unauthorised Colonies (UACs) – non-conforming to the Master Plan

Unauthorised colonies (UACs) in Delhi are defined as residential areas "where no permission of concerned agency has been obtained for approval of layout plan and/or building plan" (The Gazette of India 2008). Most of them are in fact located in violation to the Master Plan, or have come up on private land which has been subdivided illegally. It also includes housing which has been built without respecting building bye-laws (Srirangan 2000: 16; Dupont 2005: 317-18; Baud et al. 2010: 363). While residents may have purchased their plots from the original land owner, most new owners obtain only a power of attorney for a maximum of 99 years to attest the transaction, and the transfer of ownership cannot be registered (Water Aid India 2005: 28). UACs thus fall into the category of "semi-legal" settlements (Bähr & Mertins 2000: 23), in contrast to other forms of informal housing where residents have no documents of land tenure at all.

UACs have been interpreted as a response to the demand for housing by the lower-middle and working classes which is not met on the formal market, where land development policies are restrictive and de facto exclude private development (Dupont 2005: 315-16). The uneven infrastructural development of UACs also offers a variety of spaces for residential and industrial use with differential price levels in close proximity (Benjamin 2005: 252). As early as 1961, 118

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[78] The author uses the word slum. Although not specifying if he is talking about JJ Clusters or slums according to the Delhi or Census definition, his use of the term slums for JJ Clusters is apparent among others on p.24.

UACs existed on Delhi's urban fringe (Jain 1990: 172). Today, at least 1640 UACs exist in Delhi (DDA no date).[79] No map has been published on the locations of UACs so far, so that map 3 offers in fact totally new insights into their concentration along the urban fringes.

Estimates of the population of UACs in the literature vary between 0.5 and 3 million, or roughly 25% of the population of Delhi (Dupont 2005: 311; Water Aid India 2005: 27; Ali 2006a: 435). The examination of the documents handed to the Department of Urban Development in the course of the UACs' regularisation (see below), however, indicates that 8.2 million people, or roughly 49% of Delhi's inhabitants live in UACs (GNCTD Department of Urban Development 2011c).[80] Socio-economic studies on the population of UACs are rare. Available sources indicate that these colonies house around 65% low-income households and 18% middle-income households (Jain 1990: 172). Dupont (2004: 168) reports that in an UAC of eastern Delhi, 44.3% of households had a monthly income below 2,000 Rs.[81] 91.9% of the household heads had migrated to the UAC from outside Delhi, while 8.1% had lived elsewhere in Delhi before (Dupont 2005: 332-33).

The difficult data situation described here shows that populations residing in JJ Clusters as well as Unauthorised Colonies remain "semi-invisible" (Black & Fawcett 2008: 36) to their governments, although they in fact constitute more than half of Delhi's inhabitants. How, then, in this opaque field of visibility, are these areas governed at national, State and municipal level? Governance processes address informal settlements first and foremost through an overarching 'slum' discourse, which largely equates 'informal settlement' with slums.

2 Governing the 'slums'

It is important to recall from part II that governing practices attempt to intervene in what is considered a problem. Through the notion of 'slum', informal settlements are constructed as such a problem – an object of government. But the term 'slum' remains illusive. There are several definitions, namely the one used in the *Slum Areas (Improvement and Clearance) Act, 1956,* the one employed by the Census 2001, and in Delhi, the term 'slum' is used not only for informal colonies but for JJ Clusters, unauthorised colonies, urban villages, resettlement colonies, and slum areas notified under the National Slum Act (Ali 2006b: 437-39). In a majority of the literature, again, 'slum' is used to designate JJ Clusters.

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[79] This is the number of UACs that have applied for regularisation.
[80] These documents are for 1641 UACs who have applied for regularisation. The actual number of UAC residents might therefore in fact be even higher than that.
[81] In this source, unauthorised and unauthorised regularised colonies are grouped together. Data are from 1995.

This leads to a major lack of clarity when it comes to data about informal settlements, and lack of comparability between data at national and urban level as well as between different sources. Estimates for the total slum population of the National Capital Territory for example vary grossly between 18.5% (or 1.9 million) (Census of India 2001)[82] and 53% (Singh 2000: 29). In the following I will use the word 'slum' only when tracing the slum discourse; otherwise, I will stick to the designation of informal settlements as an overarching term, and use JJ Clusters and Unauthorised Colonies to distinguish between both types of areas.

2.1 Seeing 'slums': Spaces of risk

Slums are inherently framed as spaces of risk. In India, this framing dates back to colonial times and the early Independence period, when the housing of the poor started to be considered a source of ill-health and moral decay of its inhabitants, and more generally of "'danger' to the city" (Sharan 2006: 4907; see also Gooptu 1996) as seen in part IV, section 2.2. Indeed, the word 'slum' itself was coined in order to express this double-edged risk discursively located in poor people's settlements (Gilbert 2007: 702).

The following section sheds light on both perceptions: the 'slum' as a space of risk *to* its residents, as well as the 'slum' as a space of risks *of* 'slum' dwellers *to* the rest of the city.

2.1.1 Risks to whom and risk of what?

The massive arrival of refugees during the partition of India and Pakistan at Independence in 1947 made the shortage of housing a pressing issue in Delhi. Shortly after the upheavals, the National Government of India passed the *Slum Areas (Improvement and Clearance) Act, 1956* (GoI 1956c). It is the founding stone of slum governance in that it defines this sort of settlement as areas whose buildings

> "1. (a) are in any respect unfit for human habitation; or (b) are by reason of dilapidation, over-crowding, faulty arrangement and design of such buildings, narrowness or faulty arrangement of streets, lack of ventilation, light, sanitation facilities or any combination of these factors, detrimental to safety, health or morals" (GoI 1956c: Chapter II, Section 3).

This definition is predicated on the characterisation of slums as risky spaces for their inhabitants, in physical as well as moral terms. The problem of slums is framed by the Act in terms parallel to those developed in 18th century Europe, based on the notion of lack of circulation, so essential for urban areas (Foucault 2007: 13). There are too many people, in streets which do not allow

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[82] For the definition of slums in the Census of slums see next page. The Census of India counted slum residents for the first time in 2001.

for a proper movement, and stagnation of air, solid waste and filth characterise the newly defined settlements.

In the 2001 Census, as well, the definition includes not only legally notified slum areas, but equally "compact area[s] of at least 300 population or about 60-70 households of poorly built congested tenements, in unhygienic environment usually with inadequate infrastructure and lacking in proper sanitary and drinking water facilities" (GoI Ministry of Home Affairs no date). Very clearly, lack of sanitation facilities and ensuing exposure to waste water is understood to be one of the risks inhabitants face in these areas. It is here that the discourse of 'slums' as spaces of risk, and the sanitation discourse focussing on lack of access and increased health risks of 'slum' residents meet, as pointed out in part IV, section 3.2.1.

A national Slum Policy was drafted in 2001. This policy has as its main objective the integration of slums into the urban area (GoI 2001: 1) and is mainly concerned with the negative impacts of living in a slum for the residents themselves, highlighting the need to improve living conditions in terms of infrastructure and services (ibid.: 5). Besides the earlier concern with circulations the draft adds the movement of capital, labour, and even decision-making power to its preoccupations. This claim thus goes even beyond the welfarist approach of the Slum Act of 1956.

Yet, this policy has remained in the draft stage not without reason (Dupont 2011a: 81).[83] In opposition to the framings expressed in it, it is felt that with the political changes in India from Independence until today, the understanding for the risks slum dwellers are exposed to has melted down, and given way to attitudes that emphasize the – apparently endangered – interests of the better-off sections and of (global) business in the urban space (Batra & Mehra 2008; Dupont & Ramanathan 2008: 337; Ghertner 2010a; Jervis Read 2010: 94; Dupont 2011b). Preoccupations with circulations of goods and (environmental) services between the city and the slum have taken a back seat vis-à-vis a growing concern about unwanted circulations/stagnations of people, and desired circulation of goods and services between globally connected cities. Slums are considered spaces of risks to these global circulations. But how can slums 'endanger' a whole city? The following section elaborates the answer to this question from a point of view of urban planning.

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[83] A new attempt at putting better services and tenure rights for 'slum' residents on the agenda is the Rajiv Awas Yojana (RAY), launched in 2011, which is briefly discussed below.

2.1.2 The Master Plan angst

Urban planning is obviously not a modern exercise. Yet, it has gained new verve in the context of a modern governmentality (Foucault 2007: 19-20). Under the colonial regime, urban planning in Delhi was inscribed in a racist discourse on sanitation and public health, as discussed in part IV, section 2.2. In the independent capital, the imaginary of the rational city was carried on, as planning was considered "an instrument to achieve progress" by the nationalists (Prakash 2002: 4). As early as in 1957, this image was objectified and institutionalised in the first Master Plan (Legg 2006: 201). This plan is based on an "ideology of zoning" (Jervis Read 2010: 84)[84], separating different uses of the urban space, namely residential, industrial, and recreational. As it creates a wide gap between the orderly planned imagined city 'as it should be' and the reality, grown out of the "quiet encroachment of the ordinary" (Bayat 1997: 1), the Master Plan represents an extraordinary technology of government. Informal settlements, as a matter of fact, are the antithesis, are the ominous and dreaded Other of the Master Plan city: a constant reminder of planning 'failure' and lack of (sovereign) control over the urban territory. This contradiction, impossible to overlook, produces a kind of Master Plan angst amongst urban authorities. "Regularisation" of informal settlements, Benjamin (2005: 245) succinctly states, "is the dominant way cities are built". But the result of this process – the "unintended city" (Nandy 1998: 3) – is not easily accepted, and efforts to bring Delhi's urbanisation process under control have been intensified rather than attenuated in the last years. DDA (2006: i), in the introduction to the Master Plan 2021, states that "[t]he choice is between either taking a road to indiscriminate uncontrolled development and slide towards chaos or a movement towards making Delhi a world-class city". This dichotomy between an apocalyptic loss of control and a planned bright future underlies the approach to informal settlements.

Delhi's Chief Minister Sheila Dikshit expresses confidence about the state's ability to reach its goal of a "slum-free Delhi" (Chief Minister Sheila Dikshit, 15 August 2009).[85] The bureaucracy, in contrast, is not so sure about this. An officer of the MCD Slum Department concludes that "They [migrants settling in slums][86] can't be stopped since this is a democracy" (241108KU-SLUM). This statement, translating a certain fear of the 'uncontrollable' populations, also shows a perceived helplessness of the authorities – and maybe the wish to have access to other, undemocratic means of governance in order to regain sovereignty over the state's territory and to discipline

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[84] For a more elaborate discussion on zoning in Delhi see Sharan 2006: 4909.

[85] Quoted e.g. in The Tribune 2009, Rao 2010: 421.

[86] Jervis Read (2010: 79) discusses the historical dimension and implications of the designation 'migrants' for residents of informal settlements; Sharan (2006: 4910) elaborates on the significance of the urban/rural division after Independence.

informal settlers. How to control population movements is thus a major question in terms of governance of informal settlements in Delhi from the point of view of the governmental headquarters.[87]

Despite this overarching slum discourse, it turns out that JJ Clusters and Unauthorised Colonies are governed differently. While the notion of 'slum' remains crucial for the governance of JJ Clusters, UACs – despite being categorised legally as slums – are constructed much more prominently as spaces of opportunities.

2.2 Jhuggi-Jhompri clusters: Risky for the rest of the city

Within the discourse on 'slums', JJ Clusters have always had a prominent role, and the distinction between both concepts – 'slum' and JJ Cluster – is not always clear, as noted above. Current debates on JJ Clusters emphasise the risk these settlements supposedly present to the city as a whole: to its planned character, to its aesthetics, and to the well-being of the middle class.

2.2.1 The current focus on nuisances outside the Jhuggi-Jhompri clusters

The most prominent example of this (old but reinvigorated) perspective is the ruling of the Supreme Court in the *Almitra Patel vs. Union of India* case in 2000. It equated squatter residents to pick-pockets, suggesting that JJ Clusters mostly pose a threat to those living *outside* of them. Rather than pointing out the problems inhabitants have to face because of defunct or deficient removal of garbage and waste water from within the cluster, it problematised the accumulation of "a lot of untreated solid waste" *outside* the JJ Cluster which supposedly was generated by JJ inhabitants (SCC 2000: 20 in Dupont & Ramanathan 2008: 329).

Crucial for this move, according to Ghertner (2008: 61), has been the notion of nuisance, introduced in part IV, section 2.3. To recall, 'nuisance' designates acts, omissions, places, animals or things that are dangerous or offensive (Municipal Corporation of Delhi 2009). Ghertner (2008: 61) now identifies a discursive shift in this definition towards the inclusion of individuals or groups in this term. 'Slum' residents – and this designates the inhabitants of JJ Clusters in this discourse – thus are increasingly considered nuisances for others. According to the proponents of this discourse, JJ Clusters pose a risk that can not be mitigated: only their disappearance can guarantee the protection of other citizens who live outside of JJCs. It is therefore not surprising that an officer of the MCD Slum and JJ Department answered to my question which role the JJ Clusters had in the city: "Role? There is no role. They are unauthorised; they are illegal

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[87] The desire to "order the flows" has already been recorded by Sharan (2006: 4908) in the beginning of the 1950s.

encroachment on public land." (241108KU-SLUM). In the above cited case, the judiciary accordingly promoted the removal of JJ Clusters.

2.2.2 Technologies of government: Evictions, resettlement, and upgrading

To gain control over 'slum' populations, a Jhuggi Jhompri Removal Scheme was initiated as early as 1958 under the Delhi Development Authority. Responsibility for the (destruction and resettlement of) slums shifted back and forth between the State and the Municipal level over the next decades (Jervis Read 2010: 25). Since 1978, the Slum and JJ-Department was under the MCD, but early in 2010, discussions were going on to shift it to the State again. In April of the same year, the Department was dissolved to be succeeded by the Delhi Urban Shelter Improvement Board under direct jurisdiction of the Delhi Government (GNCTD 2010). This move expresses the attempt of the State to bring under control the 'unruly' JJ Clusters (which, following the State's perception, MCD failed to govern).[88] At the same time, financial allocation to JJ Clusters has decreased significantly in the last decade, showing the shrinking priority these settlements have in terms of public investment. Figure 11 displays this trend.
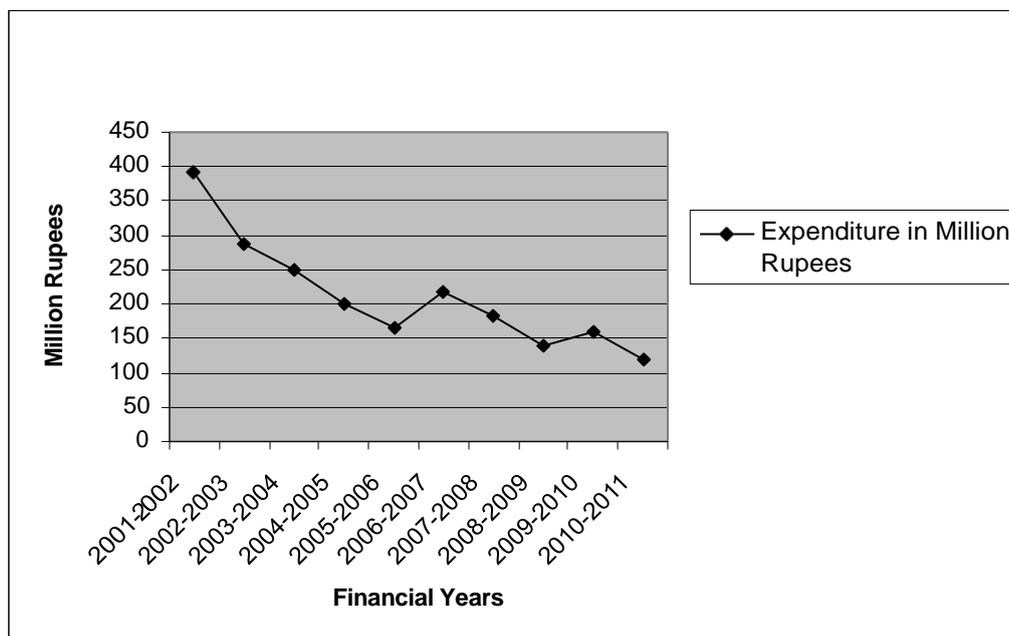
Fig. 10: Expenditure of the MCD Slum and JJ Department and Delhi Urban Shelter Improvement Board. (Draft: A. Zimmer. Source: GNCTD Planning Department 2011c)

In order to analyse the different initiatives that address those spaces of risk that JJ Clusters have come to represent, it is helpful to use Foucault's (2007: 4-6) distinction between a juridical, a disciplinary and a liberal governmentality here.

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[88] Empirical research ended before this change, so that this thesis cannot discuss the effects of the reform.

For Foucault, a law and its related punishment are the founding stone of the juridical system. Within the discourse of *slums as risk to the rest of the city*, this punishment can be identified in demolitions of JJ Clusters without compensation, as it has been advocated in the Supreme Court ruling in the *Almitra Patel vs. Union of India* case cited above. For the establishment of a disciplinary system at large scale, based on observation and control, the MCD lacks data – the last mapping of slums occurred in 1994, and data on population numbers are highly unreliable as we have seen in earlier sections (Dupont 2008: 82; Ghertner 2010a: 194). This is perceived as a major shortcoming to be addressed by the new State institution Delhi Urban Shelter Improvement Board (DUSIB 2011b). Meanwhile, punitive actions such as demolitions act as disciplinary actions for others: newcomers to the city learn that they will not be able to establish themselves in JJ Clusters – or should be discouraged from coming altogether if they cannot afford formal housing. Demolitions act thus as a disciplinary tools to control rural-urban population flows (Dupont 2011a: 79).

Additionally, JJ Clusters are governed under a liberal governmentality by providing resettlement plots and flats through the MCD and DDA[89] (Tarlo 2001: 68; Ghertner 2010a: 191; Jervis Read 2010: 90). Resettlement projects suggest that residents of JJ Clusters are theoretically 'improvable' in the eyes of the state (Ghertner 2010a: 191). The aim here is twofold: on the one hand, JJ residents are supposed to come to understand themselves as 'illegal' and to accept resettlement as a project of self-improvement (ibid.: 205). On the other hand, population flows within the city should be controlled: If the state arranges houses in a specific locality, people are supposed to choose living there. Numbers of flats needed, of square feet to be allotted, of maximum densities of settlements, of possible financial contributions of the concerned residents etc. are thus calculated (DDA 2006: 28; DUSIB 2011b). In order not to make resettlement and allocation of plots or flats look as an easy option for the less-propertied, the successive governments fix ever-new 'cut-off dates' (the date of settlement in a given cluster) to define who is 'eligible', and who is excluded from these schemes (Dupont 2008: 84; Jervis Read 2010: 90). The most recent published date is March 31, 2007 (The Hindu 2011a), so that households who can prove that they settled in Delhi before this date are eligible for resettlement. These cut-off dates, while upholding authorities' claim to intransigence and control, at the same time promote the illusion of egalitarian resettlement for the majority. In reality, however, the construction of low-cost housing lags far behind the plan, and as a consequence the number of

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[89] The Delhi Development Authority builds for example low cost flats under the Rajiv Ratan Awaas Scheme. It is also in the process of replacing the famous Kathputli Colony in the centre of Delhi by two high rise residential towers (only one of which will house slum dwellers) and a lucrative business development (The Times of India 2009a).

allocated resettlement flats is rather low. Dupont (2011b: 14) suggests that a "considerably higher number" of JJ residents get evicted rather than resettled during dislocations.

To the great frustration of the authorities, however, amongst the 'eligible' few, reselling the plots or flats and returning to JJ Clusters is a widespread phenomenon (241108KU-SLUM). In Foucault's (2007: 71-75) logic, this phenomenon shows that the 'sovereign', trying to control the natural entity 'population', has not managed to understand the variables its movements depend on: the needs and priorities of people have not been assessed correctly, so that the flow of population is not redirected in the desired way. In the eyes of urban planners, however, reselling of plots or flats proves that JJ residents are not improvable. The new Delhi Urban Shelter Improvement Board aims at controlling reselling of plots and other 'deviant' behaviour through an encompassing biometric survey of JJ residents, i.e. tight measures of surveillance, together with a system of 15-year-leasehold after resettlement (DUSIB 2011b). Until this system is in place, however, the failure of resettlement policies – together with renewed ambitions at world-class status under growing neoliberal aspirations – have led in the recent past to a comeback of punitive actions, i.e. demolitions and evictions (Dupont 2008). Strategies employed to govern the 'slums' have, according to Batra & Mehra (2008: 391), produced an "inherent instability" of JJ Clusters in Delhi, making these settlements spaces of even greater risk for its inhabitants.

With regard to the framing of '*slums' as risk for their inhabitants*, needs are somewhat better assessed and relevant policies under a liberal governmentality show (albeit slow and very scattered) results. The Delhi Slum and JJ-Department implements projects mainly in the context of two programmes. In-situ Upgradation of JJ Clusters aims at full upgrading including improved shelter (GNCTD Planning Department 2011a: 99-102). The Environmental Improvement of Urban Slums (EUIS) Scheme envisages water supply, paving of streets, provision of open drains as sewers as well as strom water drains, pay and use toilet blocks, street lights and community facilities (GNCTD Planning Department 2011a: 102-106).[90] The Department also transfers an undisclosed amount of money to the Department of Environment Management Services (DEMS) of MCD for the provision of scavenging services to JJ Clusters (301109AN-DEMS). However, as this construction of risk is much less prominent, and certainly less powerful, the necessary financial means are not allocated for successful governance (see Fig. 12). Also, interventions focus mainly on infrastructure which is supposed to regulate material flows of water and

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[90] Data for the financial year 2011/2012 is available at GNCTD Planning Department 2011b: 261-262, but these documents do not give such detailed information about the concrete measures included in the programmes.

garbage.[91] In contrast, the issues commented on in the Draft Policy, namely the flow of money, labour, services, and decision-making power, and the issue of instability pointed out by Batra & Mehra (2008) are not touched upon at all.
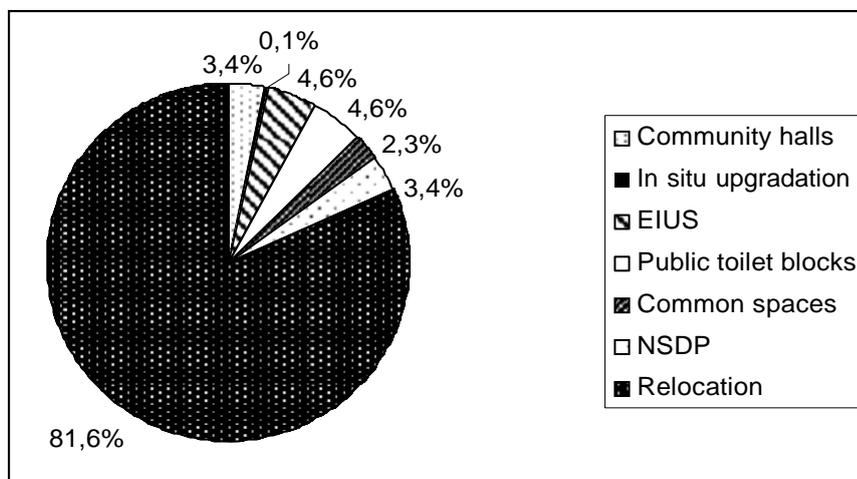
Fig. 11: Revised outlay of the MCD Slum Wing budget 2007/2008. At that time, the National Slum Development Programme (NSDP) was still inplace. A much higher percentage of the budget is directed towards resettlement as compared to upgrading and improvement of JJ Clusters.[92] Newer data are not available. (Draft: A. Zimmer. Source: GNCTD Planning Department 2011c)

It seems, however, that this framing of 'slums' might receive enhanced emphasis in the near future: In 2011, the Government of India launched the Rajiv Awas Yojana (RAY)[93] which allocates central as well as state funds for slum redevelopment to cities which are willing to provide JJ residents with property rights and civic as well as social services (Dupont 2011a: 83-84; GoI Ministry of Housing and Urban Poverty Alleviation no date: 1). It remains to be seen which kind of plan the Municipal Corporation of Delhi will come up with and how it will be implemented.

Interestingly, the scheme aims at an "enhancement of productivity at the bottom of the pyramid" in order to further "the contribution of cities to the Gross Domestic Product" (GoI Ministry of Housing and Urban Poverty Alleviation 2011: 1). Despite addressing the question of tenure security for residents, and considerably augmenting the investment in physical improvement of JJ Clusters, such initiatives thus prove finally to inscribe themselves in a governmentality that has the (national) economy at its centre.

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[91] The circulation of electricity through the slum is easier for people to establish without state support, although here, too, efforts have been undertaken to bring meters to the slums to regulate its flow.

[92] The outlay for improvement of *katras*, buildings for several families typical of Old Delhi, has not been included in this calculation.

[93] The scheme was first announced in 2009, but its first phase was launched in 2011 only.

2.3 Unauthorised Colonies: Illegitimate, but nevertheless spaces of opportunity

The governance of UACs shows a very different picture of the one discussed with regard to JJ Clusters. Despite the fact that UACs are informal, and thus potentially as 'risky' to urban order and state control, UACs have been considered less dangerous, and even spaces of opportunities in terms of political gains and practicalities of housing provision. UACs have therefore been tolerated and partly legalised in the 1960s and 1970s (Dupont 2005: 319), and a similar move is in process today.[94]

2.3.1 A new round of regularisation: Integration under preconditions

Since 2007, a new round of regularisation is on its way, promoting the inclusion of UACs into the urban social and material fabric (Zimmer 2012a). For this matter a separate cell has been created within the GNCTD Department of Urban Development (The Gazette of India 2008). This move has been supported by a steep increase in allocation of public funds starting in the financial year 2006/2007, as shown in Fig. 13, pointing at an increasing priority for the development of UACs.
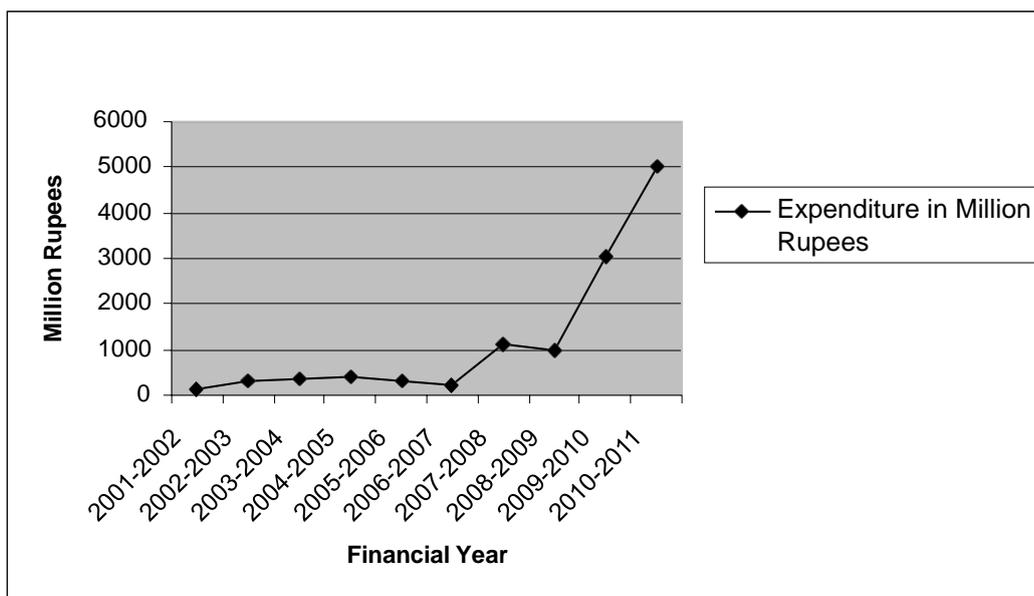
Fig. 12: Expenditure for the provision of essential services in Unauthorised Colonies.
(Draft: A. Zimmer. Source: GNCTD Planning Department 2011c)

The envisaged regularisation encompasses the juridical as well as the material regularisation of the colonies, i.e. conferring a legal status, and upgrading the areas in terms of public infrastructure (Bähr & Mertins 2000: 24). Both are linked following the Supreme Court order of February, 16, of 2006, which stated that "In case the state authorities are not in a position to

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[94] This regularisation drive was initiated after a gap of 30 years; in the 1960s and 1970s, around 786 colonies were at least partly regularised (Dupont 2005: 320).

make available the basic services in respect (…) there shall be no regularization of unauthorised colonies" (Supreme Court of India, cited in Dutta & Peace Institute Charitable Trust 2009: 20).[95]

In 2008, guidelines for the regularisation process were published in the Gazette of India (The Gazette of India 2008). In them, UACs are defined as contiguous areas of construction where no permission of the concerned authorities has been obtained for the approval of the layout plan or building plan (ibid.). The regulations propose the regularisation of UACs as far as these are built up to more than 50% of the land and are not inhabited by affluent sections of society, or built within notified or reserved forest areas, areas where right of way applies for railways, Master Plan roads, or main water and sewerage lines, or areas protected for archaeological reasons. The cut-off date is of 31st March 2002, which means that colonies younger than that cannot apply for regularisation.

By the bureaucracy, the move to regularise the UACs is depicted as an act of largesse, as the colonies are compared to "an illegitimate child [which] doesn't stop being a citizen of Delhi" (271009ANONYMOUS). To be considered for regularisation, UACs have to fulfil preconditions: they have to register a residents' society or residents welfare association (RWA) which is then responsible for a number of tasks. The RWA namely has to "liaise with the concerned agency" (The Gazette of India 2008), prepare a detailed layout plan with the help of a certified town planner or architect, compile a list of all residents, and transfer land for the development of social infrastructure, if vacant plots are available. Also, and in contrast to the earlier rounds of regularisation (GNCTD Department of Urban Development 2011b) residents of UACs would have to pay land charges (if the colony is on public land), development charges plus a penalty, the amount of which depends on the standard of surrounding colonies and the plot size.[96]

The UACs thus seem to present three types of opportunities for the government: First, they hide and compensate for the fact that the public housing activities have failed at grand scale. If in fact around 62% of Delhi's residents live in informal colonies (JJ Clusters and UACs together), then the government faces a major crisis of legitimacy with regards to its ability to provide for its citizen. In this context, informal housing arrangements which provide at least relative security of tenure have lowered the pressure on government significantly (Bähr & Mertins 2000: 23). Second, a number of political opportunities arise for the Government through regularisation processes, as support for this move helps building up a political constituency amongst UAC

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[95] Despite extensive research, the original ruling was not accessible.
[96] Colonies are categorised in classes from A to H depending on the unit area value and pertaining property tax (Municipal Corporation of Delhi 2011).

residents (Benjamin 2005: 247).[97] Third, UACs present the unique opportunity for the government to claim development charges for the retrofitting of settlements with infrastructure. While costs for these undertakings in formal colonies are included in property prices, infrastructure provision is nevertheless considered a prime responsibility of the state. In UACs, however, infrastructure development can be inserted in a discourse of 'responsibility', understood as cost sharing between the state and its citizens, inculcating a new understanding of citizenship while at the same time penalising the illegalised residents.

From a Foucauldian point of view, regularisation can be understood as a technology of citizenship coupled with technologies of surveillance. Residents of informal settlements are offered a more inclusive citizenship if in turn they adhere to the state's understanding of this term: They have to collaborate, to participate financially and enumerate themselves. They have to make themselves knowable to the state – including information on names and exact location. The documents submitted for applying for regularisation thus provide formidable data to the state.[98] Through regularisation, UAC residents, to sum up, have to agree to become governable and collaborate in making themselves governable.[99]

2.3.2 Practicalities and politics: Regularisation in limbo

Under the described conditions, 1641 UACs have applied for regularisation (GNCTD Department of Urban Development 2011b), out of which 1218 have received a provisional certificate of regularisation in 2008. Since then, not much has happened. One year later, it was discussed in the media that the majority of UACs failed to be eligible as they had come up on forest land or in the vicinity of archaeological sites (Indian Express 2010). Even in 2011, only 733 colonies have received all the required no objection certificates from the different government agencies, and it is not clear what will happen regarding the remaining areas (GNCTD Department of Urban Development 2011a). In the media as well as by the opposition, the move to distribute provisional certificates has mostly been criticised as an election campaign by the Congress party, trying to secure the votes before the assembly elections (The Pioneer 2009; The Hindu 2011b).

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[97] Benjamin (2005: 247) also suggests that regularisation is a way of expanding the autonomy of the Municipality vis-à-vis the State and National Government. However, the recent regularisation drive in Delhi has been initiated by the State Government.

[98] All this data is accessible online (GNCTD Department of Urban Development 2011c) and is at the basis of population estimates in section 1.2 of this part.

[99] Ghertner (2010a: 192) describes a similar move of the state, where JJC residents in the 1990s were "draw[n] (…) into the practice of government" by holding out the prospect of resettlement in return for cooperation in slum surveys.

Yet, in the meantime, financial resources have been allocated and spent by the Delhi Government to provide basic facilities in the UACs (see Fig. 13).

The formal process, however, remains stalled. In August 2010, the MCD requested the power of regularisation to be transferred from the Congress-ruled Delhi Government to the BJP-ruled Municipality (The Hindu 2010a), but this request has not been acceded to. Next to the question of Municipal Councillors not being authorised to use their funds for development works in UACs, the question of a levy of development charges from UAC residents has been a bone of contention in the last months. While Municipal Councillors contested charges on account of residents' poverty (The Times of India 2011b), others hoped for a hefty penalty for "indulging in an illegal act" (Indian Express 2011). Only in February 2011, the Cabinet of Delhi Government, on suggestions of a Group of Ministers, has finalised the development charges to be 200 Rs/m², a relatively modest amount. Yet, more than 100 Resident Welfare Associations have announced their protest against the decision under the leadership of the BJP (The Times of India 2011c). This slow and protracted process illustrates the highly political content of regularisation.[100]

3 Urban inclusiveness in Delhi?

What do the aforesaid considerations mean for questions of governance in informal settlements? Two different patterns emerge from the examination of both types of informal settlements, JJ Clusters and Unauthorised Colonies. In the case of JJ Clusters, the state (in contrast to academia and activists) seems to be interested in knowing more about residents than total amounts of population only since the recent shift of responsibilities from the Municipality to the State. Settlements are considered temporary in nature, and demolition drives have witnessed a comeback. A juridical and disciplinary governmentality prevails. In the case of UACs, the state is in the process of gathering a large amount of data – even though these have to be provided by the residents themselves. Inhabitants are engaged through a regime of citizenship. The settlements are seen as permanent, and consequently, ways of regularisation are sought. While demolitions represent a striking example of spatial exclusion, suggestive of an equally radical social exclusion, regularisation points at the intention to include UAC residents in the city and its networked infrastructure. This regularisation move has to be assessed on the background of other initiatives that aim at participation by citizens.

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[100] For further developments see Zimmer 2012a.

3.1 The Bhagidari Scheme: Partnering with Resident Welfare Associations in Unauthorised Colonies

In the Delhi Human Development Report it is argued that "only through partnerships and sharing of responsibilities between Government and citizens can the creative potential of Delhi be mobilised for the attainment of these [developmental] goals and for the betterment of all." (GNCTD 2006b: vii). In the light of this aim, the GNCTD initiated the *Bhagidari* scheme in 2003 in order to create an "active, effective and target-oriented citizen-government partnership" (GNCTD no date) between Residents Welfare Associations and the State government. The government claims that the scheme gives "new meaning to democratic governance" (ibid.). I have discussed in section 2.3.1 of this part how UACs are asked in the course of regularisation to form such a Residents Welfare Association. Inhabitants of these settlements are thus supposed to enter into an active partnership with the state.

Yet, the innovative *Bhagidari* initiative, while lauded for its participatory approach, has been criticised for having strengthened exclusively the ties of the middle classes with the government, thereby leading to a further relative exclusion of poorer sections (Ghosh et al. 2009: 41; Kundu, D. 2009). Several authors therefore point to the fact that government policies distinguish between a sphere of active citizens, able to claim their rights, and the poor who continue to be addressed as a liability instead, not able to speak for themselves and to partner with the state. 'Slums' (here used to designate JJ Clusters), according to these findings, "remain populations outside of the sphere of citizenship, outside of discourses of rights" (McFarlane 2008b: 106). Zérah (2009: 853) criticises "double standards of citizenship" in urban governance. These insights are based on research on Mumbai. In this urban agglomeration, middle class associations have been able to "establish healthy relationships with the administration" (ibid.: 864) and to use the media as well as the judiciary successfully in their quest for better service delivery (ibid.: 873).

3.2 Mission Convergence: Welfare for Jhuggi-Jhompri *residents*

In contrast to inhabitants of Unauthorised Colonies, JJ Cluster residents' relationships with the state remain dependent on NGOs (ibid.: 867), mired in undemocratic networks of CBOs and local power brokers (ibid.: 871). They thus mirror clientelistic and paternalistic approaches to service delivery in these settlements (see also McFarlane 2008b: 97). The representative role that is granted to NGOs is not unproblematic. NGOs partly work with local leaders instead of the whole community (ibid.). In a case studied by Roy (2009), NGOs presented the poor as disciplined and willing to negotiate – in short, as 'good citizens' – in order to oblige the state in turn to be a 'good state', i.e. to include the poor in decisions about the future of JJ Clusters or street

dwellings instead of choosing the path of domination and violence (ibi.: 168). By this logic, which Roy terms "civic governmentality", "to confront, is to stand outside the parameters of citizenship" (ibid.: 173). Presenting the mixed results of this undertaking, the author however suggests that "rebellious citizenship" (ibid.: 176) might render better results for the urban poor.

Section 2 of this part points to the fact that these findings apply to Delhi as well: A picture of urban governance in India emerges where JJ Cluster residents are not acknowledged as citizens with whom the state could establish a partnership: They are not deemed 'partners', and they are considered 'unimprovable'. In Delhi, relative exclusion of these sections of the population is even increasing when compared with the middle classes and inhabitants of UACs: These groups are encouraged to participate in political processes more than before, even though section 2.3 of this part has demonstrated that this participation comes at a price in UACs.

In light of these criticisms, the Government of National Capital Territory of Delhi has initiated the *Samajik Suvidha Sangam* (lit. 'confluence of social facilities'), or Mission Convergence, in 2008 to reach out to the "under-priviledged" or "vulnerable" citizens (Mission Convergence 2011b). This group explicitly includes residents of JJ Clusters (Mission Convergence, 2011 2011). The aim is to improve access to welfare schemes through better coordination between different governmental departments, but also via a "Unique Public Private Community Partnership" (Mission Convergence 2011f). This partnership is supposed to "enhance citizens' involvement in the governance of their own welfare" (Mission Convergence 2011a). Despite these laudable aims, it has to be noted that vulnerable groups (defined on the basis on three sets of criteria, housing, social composition of the household, and occupation, see Mission Convergence, 2011 2011) keep being addressed as undifferentiated "masses" and that NGOs retain a pivotal role in the scheme (Mission Convergence 2011c). Both facts make the active involvement of JJ Cluster residents as partners in negotiation processes questionable. At the same time, Mission Convergence is based on the issuance of biometric smart cards (Mission Convergence 2011e). While this points to an individualised approach, contrary to the designation as "masses", biometric cards represent formidable instruments of surveillance and control. Practices of discipline therefore seem to prevail, here too. Moreover, questions of housing, infrastructural equipment or sanitary services are not addressed by the mission. The goal is rather to improve the (individual) health, education, and social security especially of Scheduled Castes and other minorities, as well as encourage an equilibrated sex ratio (Mission Convergence 2011d). The mission is therefore squarely inscribed in a governmentality "which has population as its main target" (Foucault 2007: 108), and exercises a form of "bio-power" (Foucault 2007: 1). Given these highly different approaches to both types of informal settlements discussed in this

chapter, it is assumed that the governance of the waste waterscape takes a very different shape, too.

4 Concluding remarks

What do the described developments mean for waste water governance in Delhi's informal settlements? In part IV, I have discussed how waste water governance in these areas is characterised by a lack of clear responsibilities at State and Municipal level, and is predicated upon processes of Othering. These processes tend to encourage an agency-oriented regime of governing practices in order to induce changes in what is perceived as 'deviant' behaviour of residents.

Part V now has shown that informal settlements cannot be discussed as a unitary category. Rather, there exist substantial differences in the way residents of JJ Clusters and Unauthorised Colonies are seen. By the request to form Residents Welfare Associations, residents of UACs are addressed as partners for the state. It is assumed that this extends to the state's attempt to govern waste water from within the water management debate – i.e. UAC residents are supposed to participate also in the governance process that aims at increasing coverage of the sewer network. JJ Clusters inhabitants, in contrast, are more and more excluded from the city and are addressed in governance processes either as 'masses', as those represented by NGOs or as populations that need improvement and surveillance. The "urban divide" (UN Habitat 2008) thus appears to grow: Urban inclusiveness remains a far dream.

The focus on 'nuisances' for the governance of JJ Clusters visible in this part extends the argument of part IV that the urban poor are addressed through this notion. At the same time, the disciplinary side of governing practices is even more visible here than in the sanitation debate. It can therefore be assumed that processes of Othering which depict residents as 'dirty' or 'unhygienic' will be more prominent in JJ Clusters. Waste water there is then presumed to be governed exclusively from within the sanitation debate. The next two parts will examine these assumptions in detail.

VI CASE STUDY 1: THE JHUGGI-JHOMPRI CLUSTER

Parts IV and V of this thesis have discussed the governmentalities which affect waste water governance in Delhi's informal settlements. This part VI turns to the empirical investigation of waste waterscapes in one of the research areas. The aim is to answer the research question ***"What are the practices of everyday waste water governance found in informal settlements?"*** for the type of informal settlements called JJ Clusters, i.e. squatter settlements. The chapter will first analyse the production of the settlement that has taken place till date. It then presents the socio-economic composition of the area to better understand internal heterogeneity. Because existing waste waterscapes are spaces of contest, governing practices are ongoing and part of daily lives for residents as well as state representatives in the wards. Sections 3-6 investigate these everyday practices in depth. In these sections, ways of seeing and knowing waste water will be discussed for both groups. Then the ways in which residents form subjectivities in interaction with state representatives will be investigated with an eye on the impact they have on inhabitants' governing practices in the waste waterscape. Finally, technologies of government used by inhabitants as well as street-level bureaucrats and politicians will be analysed. Concluding remarks identify four major strategies of residents in the waste water governance and a coupling of two regimes of practices on the side of state representatives.

1 Producing the *Jhuggi-Jhompri* Cluster environment

Waste waterscapes are produced spaces, as has been outlined in part II, section 1. The following section describes the production of the built environment in one of the research areas. This built environment of the JJ Cluster is co-produced through activities of inhabitants as well as state representatives. JJCs are however significative for being the product of residents' activities to a major part. Through the discussion of the production process that results in the settlement, its waste water infrastructure, the cleaning and maintenance of waste water drains, as well as the relationships that inhabitants and state representatives have with waste water in the settlement will become apparent.

1.1 Settling on the land

The investigated JJ Cluster lies in the West zone of Delhi, near an urban village. The settlement neighbours a water tank with a wall surrounding it on the Eastern side; a road demarcates its Western limit. Towards the North, an empty plot adjoins it, while a covered drain functions as its

Southern limit. Beyond the drain, newer huts have come up, but were not included in the research area. The North-Western end of the cluster is a little bit elevated, but the level drops somewhat towards the South-Eastern part.

The ownership of the land is unclear. In the list of the Delhi Urban Shelter Improvement Board (DUSIB) of 2011, DUSIB is designated as its owner (DUSIB 2011a). However, one resident held that it belonged to the current Member of Legislative Assembly (MLA), a Gujjar[101] with landed property around his ancestral village, and several further versions circulate amongst the inhabitants: it might belong to the Delhi Development Authority, or another government agency that bought former *gram sabha* land,[102] or might have been the property of a deceased person without heirs. Others hold that it had been a Muslim graveyard, a graveyard for babies, or a cremation ground before. If these last versions are correct, they mirror the process of the "appropriation of the valueless" within the urban space described by Sakdapolrak (2010: 151; *own translation*).

The cluster is around 25 years old. First squatters arrived here in 1983, after evictions from another JJ Cluster in the vicinity. These families hailed from Gujarat, although for many of them Delhi was the destination of a still longer journey, having started in what is today Pakistan during the time of partition. Older residents remember how in the early 1980s, families lived in make-shift huts. "When we came there was only jungle[103] and we used to throw the garbage in one pit. Finally it got filled and we put soil. (…) Then people built huts on the filled pits. Earlier the huts were very scattered." (061109SH).

A survey done by the MCD Slum and JJ-Department on 31st of March 1994 indicates that it had 1010 *jhuggis* at that time. During the mapping for the purpose of this thesis, 886 houses were counted.[104] According to an MCD official interviewed, these numbers should be multiplied by five to estimate the number of inhabitants,[105] i.e. the cluster would have between 4430 and 5050 inhabitants. The area is 170 m x 114 m approximately. Calculating with the lower estimated number of inhabitants, the population density amounts to a staggering 246,111 inhabitants/km². The scattered huts have turned into a densely built up settlement (see Map 4).

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[101] Gujjars are a landowning caste, mostly represented in Rajasthan, but in smaller numbers also in Delhi and Haryana.

[102] *Gram sabha* land designates common property land in village communities.

[103] In the Indian context, jungle refers to barren land.

[104] It could not be clarified in all cases if the second and third floors of houses were occupied by the same family as the ground floor or not. Every house has therefore been counted as one, independently of its floors. The difference between numbers is, however, most probably due to the fact that more houses exist to the South of the covered drain which might have been included in the MCD survey.

[105] This statement will be discussed as part of the narrative on slum residents in this part, section 3.4.1

School grounds

Hospital Grounds
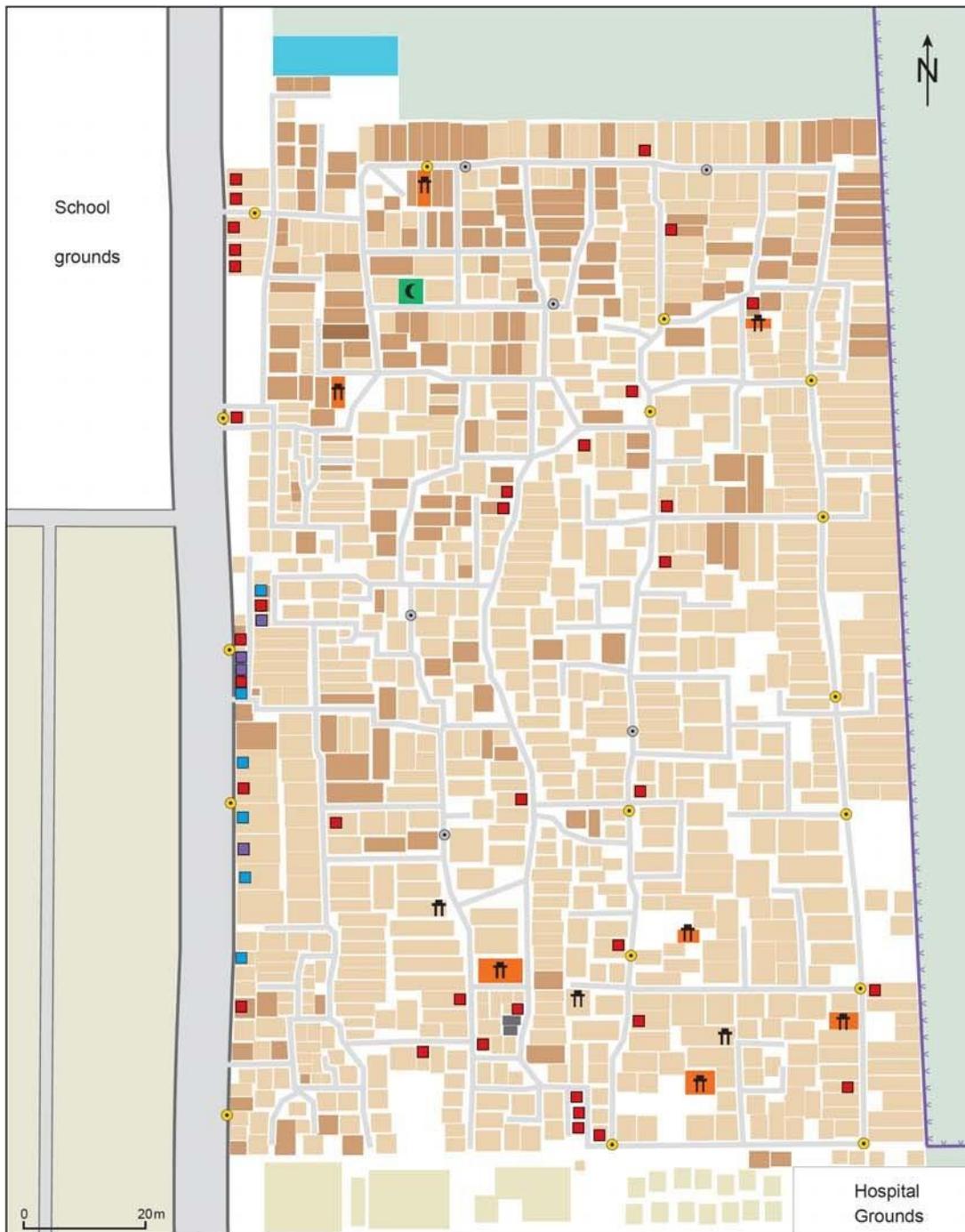
House with Number of Floors

- 1
- 2
- 3

Abandoned House

Public Toilet Block

Open Space

Infrastructure

- General Store
- Services
- Other Retail
- Street lamp
- Street lamp (Out of Order)
- Concrete/Cement Lane

Hindu Shrine

Hindu Temple

Mosque

Boundary Wall of Water Tank Area

Surrounding Built-up Area

Waste Land

Source: Google Earth, Own Field Mapping

Draft: Anna Zimmer
Cartography: Department of Geography, University of Bonn

Map 4: The JJ Cluster – built-up, infrastructure and number of floors of the houses.

Also, residents have invested in their dwellings. Today, all houses except a handful are semi-*pakka* or *pakka* houses, i.e. walls and roofs are built with bricks and cement. Some houses have been extended to two, and one house even to three floors (see Photo 7, map 4).

Photo 7: A lane in the JJC. Today, built-up is dense; in the background a two-storey house is visible. *(Photo: A. Zimmer, December 03, 2009)*

Different locations and types of construction lead to a substantial variability of prices for houses. While the cheapest ones within the cluster, made of brick walls, but with roofs of wood, plastic or corrugated iron (so-called semi-*pakka* houses) are available for 45-60,000 Rs, those on the main road sell for as much as 350,000 Rs. In the centre of the settlement, a two storey *pakka* house was sold for 150,000 Rs.

Through residents' investments, the valueless has become valuable over the last decades.

1.2 Producing waste water, building waste water infrastructure

Following or parallel to these private investments, inhabitants have achieved public investment in the form of infrastructure. This is due to the persistence of the cluster and inhabitants' enrolment in voter lists. On the 2008 voter list, 2221 voters are registered in the settlement. To secure their votes, changing MLAs have supported the residents in upgrading of the area. In the most striking example, around fifteen years back, inhabitants struggled to get a toilet block in order to avoid open defecation, difficult especially for the women.[106] A resident recalls:

> "A group of 50-60 people went to see (…) [name of former MLA] from the Congress party at his house in Punjabi Bhag, who was ex-mayor of Delhi, and at that time the MLA of this area (…). We told him that we wanted a toilet; that it was a shame for the women to have to go in the open. So he said, okay, if you have a space then we can do it." (161108SH)

As the only available area was a former Muslim graveyard, the idea was hotly contested within the settlement, and negotiations with the Muslim community of the cluster took three weeks to settle. Finally, they were consoled with the argument that "this cluster wouldn't be here forever,

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[106] This account forcefully dismisses the suggestion within the sanitation debate that demand among the poor for toilets or latrines has to be 'created', as they are used to open defecation and feel comfortable with it.

and that after that they could get the graveyard back" (161108SH). This public toilet block with 17 operational seats for ladies, and 17 for gents (or one toilet per 130 persons on average), is looked after today by a private contractor and is open from 4 a.m. to 11 p.m. It is connected to a covered drain along the main road. Most of the cluster's black water is discharged here.

Grey water is produced through bathing, washing of clothes, sweeping of houses, washing of dishes, and preparation of food. Water is supplied twice a day from around 6-8 a.m. as well as p.m. through tabs which are shared among 27 households on average. Daily activity schedules and interviews revealed that water use varied tremendously. While some residents use only 20 litres of water per day, others estimated to use 115 l/day. Fig. 14 shows one example of these schedules for a Rajasthani household of two parents, two adult brothers, one adult sister, and one female child. The interview partner was the adult sister who was in responsibility of the household chores. While amounts of water used for personal hygiene reflect individual water use, other tasks are executed for all household members together, so that volumes of water used need to be divided by the number of members.
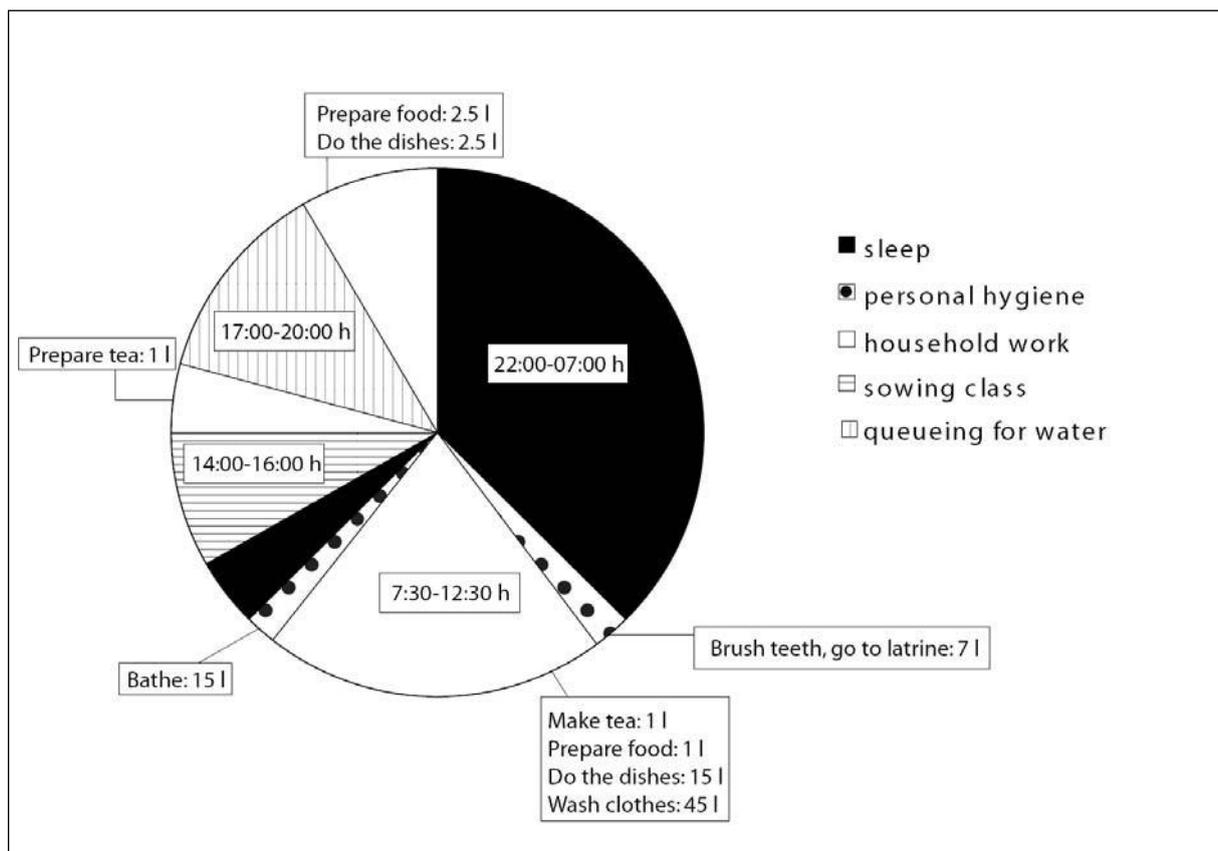
Fig. 13: Daily activity schedule of a Rajasthani resident (161108RA). (Draft: A. Zimmer)

The small amounts of water used as well as the time invested in queueing for water point to an extremely difficult situation with regard to water supply.

If it is estimated that 80% of the used water is discharged as waste water, volmes per person are of 16-92 l, and for the whole JJ Cluster between 70,880 and 407,560 l by per day. The grey water is then discharged into open waste water drains, either manually or through small holes and sinks in the houses (see Photo 9).

Lanes had been covered with bricks, and open waste water drains (*naali*) of around 0.5x1 foot had been made out of cement/concrete for the first time in 1988; in 2003, both lanes and drains were concretised.[107] The small *naali* are connected to a storm water drain of about 5x5 feet on the South through three mouths. The cluster is 'downstream' of a nearby hospital on this drain

Photo 8: Building infrastructure. A woman raises the walls of the drains with bricks in order to avoid overflow. *(Photo: A. Zimmer, November 02, 2008)*

which disposed of all its waste water here at least until April 2008; today's situation is not clear to the responsible engineer (050109VE-ENG). The drain was covered in 2007. *Naali* in the Western and Northern part lead to a second covered drain under the main road in the West by two more mouths. The Southern drain is silted, so that inflow takes place only from the South Western mouth, while water from the South Eastern ones is mostly stagnating, or flowing back into the cluster even in the dry season.

While some houses are immediately next to a *naali*, others can be at several meters distance. Where *naalis* are close, neighbours have partly covered the drains with concrete, arranged for small sewer pipes, or put slabs over the drains. A neighbour who covered the drain in front of her house recalls having spent 3,500 Rs, a huge amount in comparison to small incomes. Inhabitants also individually raise the drain walls with bricks to avoid overflow of drains in front of their houses (see Photo 8). Today's infrastructural equipment in terms of public toilets, internal storm water drains and main storm water drains can be seen on map 5. The map equally indicates areas of waste water stagnation during the rainy season as observed in 2009, and locations of solid waste disposal. Both will be commented on in detail below.

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[107] Between my two field stays the part of the Rajasthani gali which had remained unconcreted got covered.
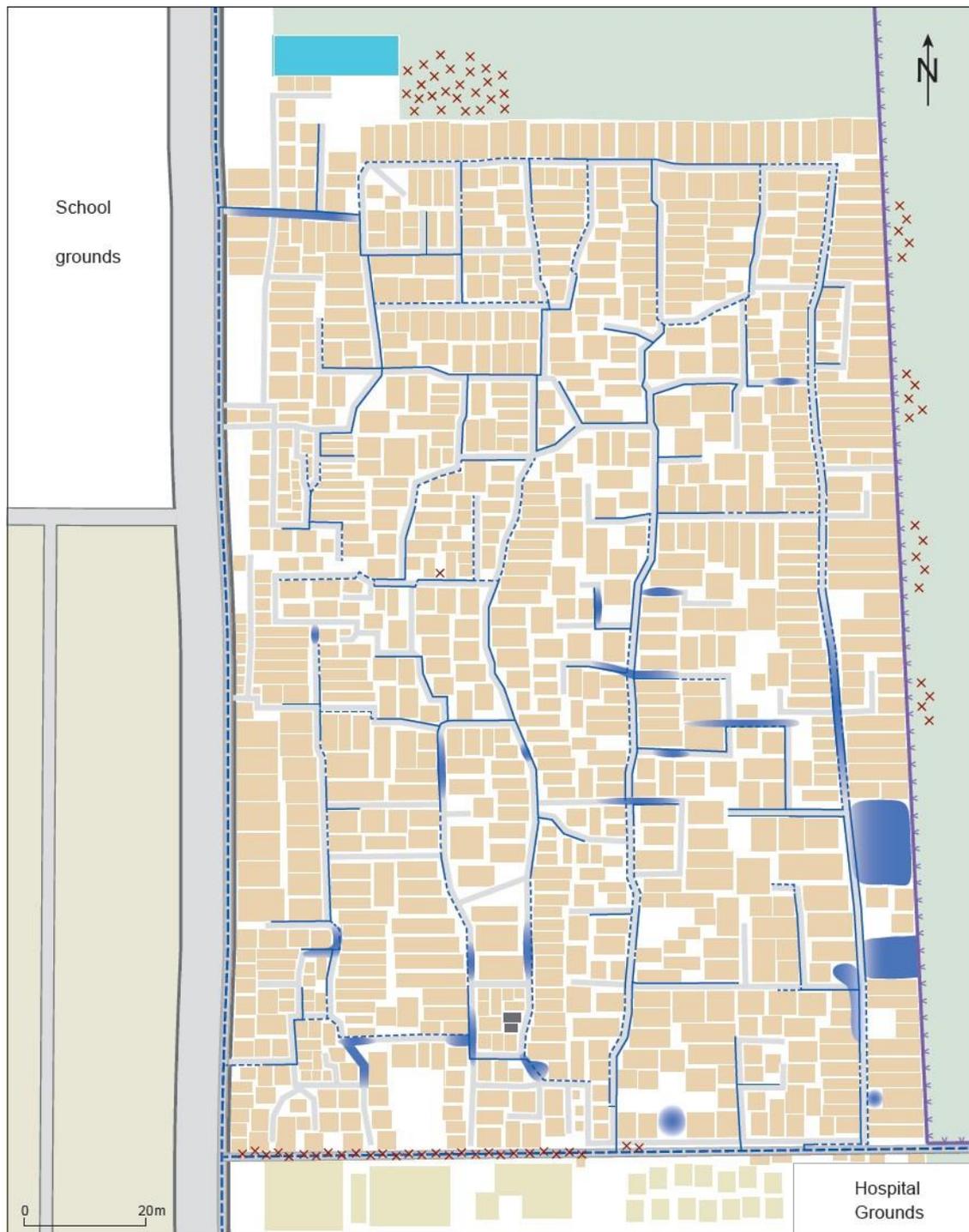
Waste Water Infrastructure

	Concrete/Cement Lane
	Open Drain
	Covered Drain
	Covered Main Drain
	Public Toilet Block

Waste Water-related Problems

- Waste Water Stagnation
- Solid Waste Disposal

	House
	Abandoned House
	Open Space
	Surrounding Built-up Area
	Waste Land
	Boundary Wall of Water Tank Area

Source: Google Earth, Own Field Mapping

Draft: Anna Zimmer
Cartography: Department of Geography, University of Bonn

Map 5: Waste water infrastructure and waste water-related problems in the JJ Cluster.

Photo 9: A boy takes a bath at the entrance of his house. The produced waste water flows over the lane to join the storm water drains. (Photo: A. Zimmer, November 04, 2008)

Because the toilet block is closed at night, far away, not adapted to children's needs, and often dirty, *naali* are also used as toilets by small children, and some adults squat on them in exceptional cases especially in the Southern part of the cluster (see this part, section 3.1.1). Also, several households have built bathrooms by putting up cloth or tin walls over a part of the drain. These bathrooms are partly used as toilets as well. In these cases, grey and black water mix in the open drains.

Next to the public toilet block is the nearest dumping ground. No dustbin exists inside the settlement. Electricity connections exist which are metered since September 2008.

1.3 Securing waste water drainage

In terms of cleaning of the described waste water infrastructure, the public toilet block is looked after by a private contractor. The contractor has appointed a resident family as caretakers who supervise the payment by the users and the cleanliness. While the contractor receives a fixed amount of 400 Rs/day, the family keeps the remaining amount which varies between 5,000 and 6,000 Rs/month. Besides, a scavenger cleans the toilets of the block twice a day and is paid 2,000 Rs/month. The contractor does not usually come to supervise the work as long as he receives his fixed amount.

The JJC is not serviced by public sweepers, as the lanes are very narrow. No garbage collection happens at household level. The JJC is however provided with the service of three scavengers for the cleaning of internal drains, which means that each scavenger cleans the drains of 1477 inhabitants on average. They work for and are paid by the Municipal Corporation of Delhi (MCD). In contradiction to the yard stick rule of distribution of scavengers presented in part IV, section 5.3.2, this number of scavengers is the result of negotiation processes between Municipal Councillors and the zonal administration: "There is a [yard stick] rule, but at present this is not followed. (…) The Municipal Councillors raised an appeal in a [zonal] meeting that some SI [Senior Sanitary Inspectors] are in the ward since ten years, so why don't you transfer them and

distribute them equally amongst the wards" (291009RA-SS). This request also referred to scavengers, and was heeded to by DEMS. The scavengers attending to the JJ Clusters are 'piece-meal'[108] workers. Due to their non-permanent position, finger prints of the scavengers had not yet been fed into the biometric attendance system at the end of my fieldwork (061109HA-MATS).

It is the duty of these scavengers to dig out muck and waste of the *naali*, to leave it on the road to drain and dry for 1-3 days, and then to pick it up and dump it in a dumping ground. They come every day, but according to the inhabitants, the individual *naali* are not cleaned every day, but rather in 2-3 day intervals. As a result, waste water movement is facilitated through scavengers' efforts only to a certain degree. Therefore, stagnation of waste water is a constant fact in most areas. If it is too disturbing, drainage is achieved by inhabitants' own efforts. Especially residents living in lower lying areas clean the open drains by themselves almost on a daily basis. This is of particular importance to secure drainage during the rainy season.

The storm water drains into which the smaller *naali* discharge are under the responsibility of the Engineering Wing of the MCD. Because both are covered they can only be cleaned through manholes, a system deemed inefficient by residents. Since 2008, cleaning has to be undertaken twice a year (050109VE-ENG). Both covered drains ultimately discharge waste water into the Najafgarh drain (see map 1).

Although these numbers suggest a fixed, measurable public provision of basic amenities, the described infrastructure and services are not a static given. Infrastructure breaks down and needs replacement; further upgradation is sought. Even more so, public cleaning services are subject to constant renegotiation and changing rhythms. Also, levels of satisfaction fluctuate amongst inhabitants as well as state representatives. The visible waste waterscape that is produced through the described activities of building infrastructure and interacting with it, of using and discharging waste water remains therefore problematic from the point of view of all concerned. Governing the waste waterscape in the JJ Cluster cluster is thus an ongoing process, and will be the subject of the remainder of this chapter. In order to understand major differences between practices of various groups of JJ residents, the next section introduces the spatial and social structure of the settlement, before parts 3-6 discuss governing practices.

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[108] This expression, used by the Sanitary Inspector, most probably refers to their substitute status, see part V, section 5.3.2.

2 Spatial and social heterogeneity and organisation of the settlement

The JJ Cluster is heterogeneous from a social point of view, a fact that is reflected in the spatial distribution also. Regional origins, religion and caste were important criteria here. To recall, the settlement originally was founded by Gujaratis. Today, the settlement is socially heterogeneous throughout. The Gujarati population is still relatively high, but besides, high numbers of Rajasthanis, as well as people from Uttar Pradesh, and smaller groups from Bihar, Madhya Pradesh or Punjab reside in the cluster as well. Hindu Scheduled castes such as Jatav, Katheek and Naribat coexist with a large Muslim population of different castes itself. Yet, caste is not unproblematic as a category. This became very obvious towards the end of my field work when one interview partner reacted quite strongly to my question about his caste:

> - Are you Gujarati?
> "Yes, there are 10-15 other Gujarati living in our street."
> - Why don't you stay where all the other Gujaratis stay? Is it because you have
> a different caste?
> "There are so many castes, we are Malee [Gardener]."
> - And the others?
> "Why should I tell you? What did you write? Gujarati? That's good."
> (171109RA)

The following section investigates heterogeneity therefore on the basis of self-ascribed communities. Further, differences based on occupation, income and education will be elucidated as they play a major role for distinctions in waste water-related practices. In the remainder of this chapter, empirical evidence has been grouped in a deductive manner. This means that different communities, and statements of the educated and those lacking formal education are grouped if – and only if – they show certain common characteristics distinguishable from other groups.

2.1 Different communities: Self-ascribed identities on the basis of origin and caste

Spatial segregation within Delhi's residential areas that follows lines of religion, caste, origin and education has been discussed by Dupont (2004). It does therefore not surprise that Naribat, Gujaratis and Muslims are concentrated in different parts of the cluster, and the lane towards the East is known as Rajasthani gali. There are, however, large portions of the settlement in which every *jhuggi* is inhabited by people from a different state, religion or caste (see map 6).

As caste is a category which is strongly linked with occupation (Michaels 1998: 187), an exemplary social survey of the Northern and the Southern side of the cluster indicates that income-generating activities vary significantly (full list see in the appendix IV.1). On the Northern

146

end, there is an important cluster of people recycling second hand sports shoes – these are mainly Jatavs (cobblers); many men also work in nearby factories or produce plastic or metal parts in home factory. At the Southern end, in contrast, the majority of people either sell plastic utensils, TV and fridge covers and other items as mobile vendors. These are the Naribat and Gujarati communities.

Both are also involved in an intricate deal that consists of buying glasses and plastic utensils, and exchanging them at household level with old clothes, which are then resold. Many women of the Gujarati communities work as maids in the nearby colony of Rajouri Garden. The traditional occupation of Naribat, the production of leather ropes and wipes, is not found any more. Interviews revealed that a few Gujarati and Naribat also sell

Map 6: The spatial distribution of different communities in the JJ Cluster. The map drawn by an interview partner that is one of the sources is visible in appendix V.

alcohol and narcotics; it is not known whether this activity is restricted to those communities, though. Begging and waste collection secures the income of some Naribat households.

Male members of the Rajasthani and Muslim communities work mainly as labourers and whitewashers, but professions such as tailors are present as well. Women of both communities worked as maids.

Income levels therefore are very different within the cluster. The poorest Naribat live of around 1,500 Rs/month; those in the old clothes business can earn a maximum of 6,000 Rs/month. A truck driver from the Rajasthani community, in contrast, earns 35,000-40,000 Rs in a month.

Education levels equally vary widely within the JJ Cluster. The most educated person was a Rajasthani currently studying at Masters level to become a Chartered Accountant. The interviews with him were the only ones conducted in English. Apart from him, only one other interviewee from Uttar Pradesh held a Bachelor's degree; this young man gave tuition to school children in the cluster. Several inhabitants had attended school for several years and were perfectly literate; among them, a Rajasthani man run a local school for children who did not get admission in formal schools or had dropped out.

The educational and economic status partly overlaps with community derived identities. Amongst Naribat and Gujarati literacy is low; while some Naribat knew how to write their names, a few Gujaratis had learned to read and write without attending school. Rajasthanis and Muslims showed higher levels of literacy. Those with highest education levels did not dwell on their community affiliation. Instead, the educational status and occupation were central in their self-description, pointing to the relevance of modern subjectivities. The only young woman within this group, who attended school for eight years and was the daughter of a local informal leader from the Bhatt community (see below), was also the only woman in the settlement who chose to wear jeans instead of *lehengas, salwar kameez*, or *saree.*[109] This choice was a clear marker of her wish to distinguish herself from her neighbours, which she saw as too traditional. Also, unlike other JJ Cluster inhabitants, the educated mostly presented themselves with name and last name in the interviews. This educational elite partly overlaps with a political elite comprised of mostly men who are, or have been in the past, socially and politically active. Some respondents had been active in the NGO Deepalaya, presented below; one elder inhabitant had

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[109] Traditionally, *lehengas* are common for married Gujarati and Naribad women. They are long skirts, which are worn with a blouse and a broad shawl. *Salwar kameez* are the clothes worn by young girls of all communities, and married Punjabi and Muslim women mostly. They consist of a trouser, over which a knee-long top is worn. *Sarees* are the dress of married women of other communities. They are a single piece of cloth draped around the body, under which a short blouse is worn.

been member of a Trade Union; the Bhatt informal leader and his daughter were members of the Congress party.

Within the social structure of the cluster, Naribat seem to hold a special position which is important to highlight with regard to waste water governance because it is prominently based on ascriptions of dirtiness.

2.2 The Naribat: Excluded within the JJ Cluster

According to the literature Naribat,[110] or Naribat Marwari, are said to be of Rajputh[111] origin, but have the Scheduled Caste status in Delhi (GoI 1956b). Traditionally, Naribat knit leather chords and make stone idols. In 1981, only 872 Naribat were known to live in Delhi; 8.6% of Naribat were literate (Singh 1995: 983).

During interviews, several members of other communities complained about this group, or ridiculed them, drawing a murky picture. The community is associated with a lower caste or nomads; as one Rajasthani states: "They can live anywhere, they just put up two bamboo sticks, they are like nomads, they can live in any condition." (051108AJ). Women do not work, so neighbouring communities feel that particularly divorced or widowed women live on the mercy of others, or beg. In terms of their mindset, others describe the Naribat as "backward" (271108KR), very superstitious (051108AJ), and as lacking education (161108SH).

Yet, most important for the context of this thesis is the ascription of dirtiness in all its senses: Naribat are said to be dirty or live in a dirty way, to collect garbage, to wipe themselves after going to the toilet and throw the cloth in the drains. But also in the figurative sense they are associated with dirt: members of other communities say that they eat meat every day – an impure activity according to Hindu caste values –, or more starkly, they eat "dead animals from the woods" (051108AJ); the men supposedly sell alcohol. Finally, Naribat are identified with bad behaviour, using slang,[112] lying, stealing, selling narcotics, and being noisy. These statements are a very strong example of processes of Othering with respect to distinctions between cleanliness and dirt, described in part IV, section 1. Mirroring their low social position, Naribat live in the lower lying areas of the cluster next to the main covered drain towards the South, where waste water often stagnates on roads, as is visible in map 6 (Sakdapolrak 2010: 153-154). Yet, this also concerns the Gujarati community, so that the spatial location cannot be taken as a clear indicator of social status alone.

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[110] The spelling varies between Naribut and Naribat.
[111] Rajpuths are counted in the general caste category.
[112] The word slang is generally used to refer to abuses.

Reactions to negative ascriptions amongst Naribat are varied. One Rajasthani affirms: "The Naribat don't want to be called Naribat." (051108AJ). This is obvious in the following statement by an 18 year old girl who presents herself as Rajasthani, but in a later incident identified herself as Naribat:

> "We don't talk with the people on the drain side, we are Rajasthani, not Naribat. The people outside the cluster on the road behave badly, so we don't want to interact with them. We are better then them, we have better houses, we are cleaner. My father goes for fery [hawking]; the outside people collect waste, they live a dirty life. The people who sit on the covered drain [to the South] use a lot of slang. They say they are hungry, but they eat three-four times a day." (121108MA).

Eager to distantiate herself from the depreciative label, she follows the dominant discourse in these statements. Another woman, busy preparing chicken skin, was ostensibly embarrassed when I passed with my assistant, and felt obliged to defend her food habits with the low price she paid for what others consider as waste.

Others, however, do not show this shame. They rather put forward that Naribat are Rajpuths, and thus should count as general caste. One woman defiantly holds "we live like adivasi [native tribes]" (241008NA). Naribat mostly socialise amongst themselves, and women of this community are not allowed to work. When asked what the reason for that was, one interviewee relates:

> "Our husbands don't allow us to, because they will say 'How can I know that you are going to work, and you are not sleeping with someone?'"
> - So they have a bad opinion about women that work?
> "You see, if there are quarrels between us and the Rajasthani or Gujarati women that work, (…) we tell them that they are going to work and put a bamboo stick in their ass [fuck], and they will say that we are just sitting here and eat and get fat." (111108GY)

Working outside the house for women is thus associated with low morals and a risk to decency or honour, and other communities are depreciated on the basis of this ascription. The statements on both sides show how deeply divided the JJ Cluster is in terms of communities and ways of life. The social division is further important to understand the way the settlement is organised socially and politically.

2.3 Forms of social and political organisation

When studying forms of organisation, the cluster's division in terms of community and education is further confirmed. Overall levels of organisation are low, so that no JJ Cluster-wide efforts are made to achieve public services. Cooperation is strongest within the caste, but this resource is

not used in the waste water governance through more formalised structures such as caste *panchayats*. Within self-ascribed communities (regional in most cases, caste-based in the case of Naribat and religion-based for the Muslim community), unity is found to a certain degree, providing some – albeit limited – influence in the waste water governance through informal leaders, or *pradhans*. Next to these traditional institutions, modern forms of associations exist or have existed in the investigated JJ Cluster.

The *panchayat* organisations that follow caste lines play no role in the waste water governance, as they exclusively deal with internal matters such as marriages, divorces and family disputes. Instead, some influence is attributed to *pradhans*, or informal leaders: "The *panchayat* is for personal and family matters, the *pradhan* is for any matter of the street, for neighbourhood problems, for water, etc. He will take the crowd to the politicians" (111109ME), one Gujarati recounts. The cluster has several, partly self-proclaimed *pradhans*: One *pradhan* from the Gujarati community who was well known throughout the cluster deceased in 2009 during my second fieldwork. Another *pradhan* from the Rajasthani lane, but belonging to the Gujarati community had died before my research started, so that the street had no representative any more. A third *pradhan*, who seems to work in close cooperation with the MLA and owns a shop in the cluster, is from the Jatav community. A fourth *pradhan* is Bhatt; but most people have stopped considering him as *pradhan*. Finally, there is a Muslim *pradhan*.

The importance of *pradhans* in the governance set-up is difficult to gauge. Jha et al (2005: 25) believe that their role is "to serve as intermediaries to mitigate (...) risk and to provide access to public services." The above quote indicates that the *pradhan* can organise joint action to complain to the political representative. In one incidence, the Jatav *pradhan* had negotiated between neighbours who had a conflict over a drain: Because a neighbour had covered the drain in front of his house, the stretch could not be easily cleaned any more and blockages ensued. The *pradhan* then negotiated that all residents contribute to pay the scavenger to clean the covered part with the help of a bamboo stick. The Bhatt *pradhan* tells how he was instrumental in bringing all the facilities available in the cluster today; the Jatav *pradhan* reports having identified spots for water taps to be installed.

Nevertheless, my research sheds a very critical light on *pradhans*. Residents extensively criticised their involvement in corruption, illegal betting games and money lending. A group of interviewees recollects the following:

> The *pradhan* gets work done for those people who sit with him. He has a
> group of people he shares the money with, money they extract from others in
> the colony who need their help, as well as [people] from outside. (…) This
> group of people and other well off members of the JJ Cluster give loans to the

poorer ones, and they have to pay interests of 10%, 20% and sometimes 50%, depending on who asks for the loan, and how urgent it is. They have to give their ID proof, ration card[113] and token[114] as security. If they cannot pay in time, they have to pay 250 Rs per day penalty. If people can't pay the loan back they are beaten up, and finally the loan giver seizes the hut, the person is thrown out and the hut is resold.

Also, young men are induced to gambling by that group (…); they are given money for the initial game, then debt accumulates and can go up to 30,000 Rs because interests are around 100 Rs /day. Again, people who cannot pay back are beaten. One respondent's son got his hand broken and was forced to leave the hut, now he lives on the street because he does not have money to pay rent, and they can meet only secretly, otherwise people will follow the mother when she goes to meet him to find out where he is. Many sons have run away for this reason. If inhabitants complain to the police they [the police officers] are in favour of that influential group and take bribes. The *pradhan*, the well-off and the police all sit together and support each other. (301008SA)

One interviewee therefore holds that *pradhans* are more useful to outside actors who want to locate a certain household than to insiders who want to reach out (051108AJ). The majority of inhabitants, with the exception of the Gujarati community, formulate a variation of the sentence "everybody is *pradhan* for themselves" (231108MU), indicating that there is no representative they trust and use in order to attain state services. Despite this critical view, Naribat deplored that they were the only community without own *pradhan*.

The cluster also has a history of involvement of an NGO, Deepalaya, which ran a school and other social projects. In cooperation with Plan International, money was raised through sponsorships of children from abroad. When the NGO handed affairs over to the residents and withdrew from the projects around ten years back, the social divisions proved impossible to overcome. In the committee that was formed, Muslims and Jatavs represented the majority, with a few Punjabis and Rajasthanis joining in. Gujaratis and Naribat were left out of the process because in the eyes of other communities "they are too corrupt, they used to lie and cheat, so we avoided them" (120809AP). Conflicts about finances finally caused the committee to dissolve at the beginning of 2008.

In terms of political organisation, the settlement falls under three elected bodies. At national level, it shifted to the West Delhi Constituency in 2008. At State level, delimitation took place

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[113] The ration card allows residents to access subsidised food rations. Yet, ration cards are also the most commonly recognised address proof in Delhi.
[114] Tokens, provided to slum residents by the DDA, give a (albeit weak) security of tenure and is required for any resettlement purpose in case a slum gets demolished (Ghertner 2010: 191).

before the 2008 elections, too. Finally, at municipal level, the settlement falls into the West zone and is divided between two wards. The Member of Parliament, currently Mahabal Mishra from the Congress party, has shown to be of insignificant relevance for the waste water governance. The Member of Legislative Assembly (MLA) is the central political actor. The current representative had first won Municipal elections as an independent candidate in 1997, and again in 2002. In 2003, he contested for State elections for the first time on a Bharatiya Janata Party (BJP) ticket and won. In 2004, his son was then elected to replace him as Municipal Councillor in the MCD by-polls. In 2007, his son and daughter-in-law contested successfully with a ticket from the Jharkhand Mukti Morchabut in the Municipal elections for both wards in which the JJ Cluster falls. All three politicians joined the Congress party before the State elections in 2008. Despite the delimitation process, the father won the MLA post for a second time. Both Municipal wards and the State Constituency are thus under control of the same family and under the Congress party now. Responsibilities of the Municipal Councillor in interaction with the residents are almost exclusively taken over by the father(-in-law), with inhabitants stating that they never met the son, and that the daughter-in-law only left the house for the electoral campaign.

In the following, the focus will be on interactions of waste water governance between inhabitants and state representatives in the ward and zone. Two major relationships are in the focus: the cleaning of *naali*, and the removal of solid waste from the settlement. Both have turned out to be the most problematic in interviews with residents.[115] To understand how JJ residents and state representatives in the wards govern each other in their relation with waste water, the four dimensions of governing practices presented in part II, namely ways of seeing and knowing waste water, forming subjectivities, and using technologies of government, will be analysed.

3 Visibilities of waste water in the JJ Cluster: What is the problem?

Visibilities of waste water describe how individuals or groups see waste water. Do they see it at all, or is it absent from people's accounts? If people see it, then how do they describe it? Is it seen as a problem? The visibility people give to waste water can, as discussed in part II, be considered a part of their attempt to conduct others' conducts. The following sections will thus explore how waste water and the relations different people entertain with it are problematised by whom.

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[115] Negotiations around the toilet block will not be discussed, as waste water discharge here has proven to be literally invisible and has never come up as a problem in discussions.

3.1 Experiencing waste water: The residents' perspective

Inhabitants have detailed knowledge of the different waste water-related issues in their cluster as well as their causal relations amongst each other. Problems have distinct temporal and / or spatial patterns to them, so that residents' experiences can vary tremendously depending on when they are interviewed, or where they are located in the cluster. Mosquitoes, for example, are especially a nuisance during the rainy season. All areas of the cluster report having problems because of them. In contrast, problems of overflowing waste water drains and subsequent exposure to waste water in streets and houses do not only vary in their occurrence throughout the year, throughout the day, as well as in terms of their duration. The area is also not affected in a homogeneous manner. Those houses located in the South and which are close to a *naali* will be hardest hit, while those located in the North and further away from a *naali* will never experience overflow in the houses. This showed very clearly in map 5. The rainy season is the only time of the year when the North Eastern part experiences overflow in streets. In the South East, however, overflow occurs even in the dry season.[116] Overflow in streets lasts much shorter, and water levels will be lower in the North than in the South, where water can reach the level of two feet in the streets during the rainy season. In the following, low and high areas of the cluster will thus be distinguished.

3.1.1 Naribat and Gujaratis: The low lying areas of the cluster

In a general problem ranking, a resident of the low-lying part of the cluster gave cleanliness the second priority of all problems prevalent in the cluster – after alcoholism, and before lack of food, lack of education, lack of security for women, and fights and stealing (see Table 2).

Rank	Type of problem
1	Alcoholism
2	**Lack of cleanliness**
3	Lack of food
4	Lack of education
5	Lack of security for women
6	Fights and stealing

Table 2: General problem ranking Naribat (191109CH)

In the whole Southern area of the JJ Cluster, solid waste lying on the street, falling into the *naali*, and being taken out of the *naali* to lie on the street again for drying is perceived as a major problem (see Photo 10). Residents complain that it stinks, it makes walking through the narrow lanes difficult, and it is dirty. Moreover, when left to dry, worms

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[116] An overflow calendar kept by a shop keeper in this part between December 2008 and March 2009 illustrates this situation: It revealed that on 97 out of 111 days overflow occurred twice a day. On twelve days overflow occurred once a day. The total duration of overflow in a day varied between one and 13 hours. Only on two days did overflow not occur.

come out of the piles; but when garbage falls into the *naali* it causes stagnation of waste water. This, in turn, encourages mosquitoes to breed. The stink, the dirtiness, the mosquitoes, and also contamination of drinking water through broken pipes are all understood by inhabitants to lead to ill-health. Stagnating waste water in the drains can also turn into overflow if there is extra water added: this can be either through rains, through the water supply if the taps cannot be closed, or through backflow from the main drain which is choked. If the drains fill up, overflow occurs first on the streets (see Photo 11). The extent of this problem was visible in map 5. Near the main drains, water can stagnate at a one- to two-feet level. Overflow in the streets makes commuting difficult, and represents a health hazard especially for children that play in the streets and get exposed to waste water. The health hazards pertaining to the hospital waste water flowing back into the settlement through the choked Southern drain are invisible to inhabitants and thus not problematised.

Photo 10 & 11: Problems in lower lying areas. Inhabitants complain about solid waste, stagnating waste water, and related health hazards. (Photos: A. Zimmer, October 30, 2008 & November 02, 2009)

In severe cases, overflow reaches the houses. Residents also report that waste water inside houses can come directly from below if rats dig tunnels from the main drain. Rats are therefore especially a problem next to the Southern covered drain, and for those whose houses have a mud floor. Overflow in the houses can prevent the inhabitants from the most basic life sustaining activities such as cooking, eating and sleeping, as life has to take place on beds and cupboards during these hours.

A further problem that Naribat and Gujaratis address consists of the *naali* being used as toilets. This leads to stink and encourages flies, which then settle on the eatables while food preparation

and eating, presenting a health hazard to residents. Solid waste and excreta are causes for numerous conflicts in the communities. These conflicts are themselves perceived as problematic by the people as quarrels make daily life in the densely built-up space highly unpleasant.

3.1.2 The Northern parts: Higher grounds

Rank	Type of problem
1	Psychological problems
2	Financial problems
3	Lack of education
4	Superstition
5	Alcoholism
6	Early marriages
7	Gambling an idleness of men
8	Aggressive behaviour
9	Isolation from the outside world
10	Lack of tenure security
11	Lack of space
12	Water supply
13	**Lack of cleanliness**
14	Electricity
15	**Drainage**

Table 3: General problem ranking educated inhabitants of the Northern part (171109AJ).

In the Northern part of the cluster, two respondents put cleanliness on the fourth rank of infrastructure-related problems, after lack of tenure rights and space, and water supply; drainage was on the sixth rank after electricity. All of these problems, however, were deemed less pressing than social issues, such as psychological problems of lack of self-esteem amongst JJ Cluster residents, financial problems, lack of education, superstition, alcoholism, early marriages, gambling and idleness of men, aggressive behaviour, and isolation from the outside world (see Table 3).

Overflow usully does not occurs here. Only the street near the North-Western mouth of the drain experiences short-term overflow when the mouth is blocked. In the North-Eastern stretch, an inhabitant tells that overflow can at most reach a level of 1-2 inches in the streets, and that too, after heavy rains. Others relate how overflow problems are only due to the fact that a neighbour has fixed a net in the *naali* in front of his house. This inhibits solid waste from neighbours to deposit in front of their house; yet, it causes problems of overflow for all neighbours 'upstream' as the garbage gathering at the net blocks the flow of water. The problem of defecation in the *naali* is almost unheard of here. One woman tells how children and adults used the drain in front of her house to relieve themselves during the night. The disgust and bad smell then led her to cover the drain, so that this problem does not persist any longer. Contamination of drinking water through waste water leaking into broken pipes, however, is a problem here too. Equally, inhabitants complain about bad odour, mosquitoes and solid waste in the drains.

There is thus a stark contrast between problematisations in the lower and those in the higher parts of the JJ Cluster. In lower areas, solid waste and overflowing waste water drains are perceived as main issues. Together with excreta they are highly problematised in relation to health, convenience, and aesthetics – and ultimately are seen to represent a threat to good neighbourly relationships. In the higher areas, other issues are perceived as much more important. As visibilities produce objects of government, these differences point to the fact that the waste waterscape is not subjected to governing practices in the same way by inhabitants of both parts of the settlement.

3.2 Relating to waste water professionally: The view of state representatives in the ward

Yet, inhabitants are not alone in governing waste water. Which waste water problems do state representatives in the ward and the zone see in the JJ Cluster? It is important to note that state representatives, except the scavengers, do not experience waste water in the cluster as part of their daily lives. And even for scavengers, these experiences are part of their work life, and they can turn their back on them the moment their duty is over. Accordingly, their outlook on what problems exist in the first place is very different from the residents'.

The representatives in the ward do not problematise waste water as such. An extreme example of an almost complete lack of problematisation of life in the JJ Cluster is a statement made by the MLA, who in an open question on problems of the settlement cannot see any major issues at all: "There are no problems. They have water, sweepers are coming, electricity is there. The only problem can be because of the overcrowding. And then, people throw the garbage, and it's so dense the sweeper can't enter with the tricycle" (021108CH-MLA).[117] The only real problem acknowledged is the high density of the settlement; solid waste is recognised as a problem to a certain degree.

This focus is followed by the administration: "when people come and occupy, waste is being produced" (071108HA-SI), the Sanitary Inspector pragmatically states. JJ inhabitants, according to the Sanitary staff, throw garbage on the road and in the drains constantly (061109HA-SI). This makes the 'slum' a risk for the cleanliness of adjacent roads and the success of staff efforts to provide cleanliness. In addition, the arrangement of houses and narrow lanes inhibits executing sanitation works.

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[117] This statement will be discussed further in this part, section 4.2.2.

Problematisations therefore function in a very different way in comparison to the inhabitants. Waste water is not seen as problematic; exposure and health hazards are not brought up. It is in fact the JJ Cluster as a settlement which is problematised: inhabitants' conduct with respect to urban space and solid waste are at the centre of governing practices. In the eyes of state representatives, the way residents set up their houses, their use of neighbouring areas and infrastructure is the bone of contention and needs to be rectified.

4 Contested waste water knowledge

The described problems are linked to explanations of causes. This knowledge is powerful in governing other actors' conducts because, as discussed in part II, it makes certain practices acceptable, and therefore doable while others become unacceptable and the object of intervention. Knowledge constructs objects of government, and subsequently conducts people's relationship with waste water. The following sections will substantiate this by discussing different forms of 'truths' that residents and state representatives circulate. In the waste waterscape, these embrace such different things as truths about the causes of waste water problems, but also 'truths' that people form about the 'Other'. Contesting 'truths' turns out to be a major part of resistance to governing practices.

4.1 What are the causes of waste water-related problems?

The experiences inhabitants and state representatives have, and the way they interact with waste water, lead to the development of situated knowledge about interrelationships between the problems they perceive and what they understand to be the causes of these problems.[118] These different forms of knowledge will be presented in the following.

4.1.1 Non-elite inhabitants: Own responsibilities, a failing state, and politics

Non-elite inhabitants are divided between people according the problems mainly to residents, and those who responsibilise the state. People who fail to throw solid waste outside the cluster are named by several interviewees as contributing to choking *naali*, and as a result to the choking of the main drain. This view is shared only by one Naribat woman. She moreover highlights that people throw their garbage on the streets or in the drains because dustbins lack within the cluster: there is only one dustbin near the toilet block, and for residents of the South-eastern side it is quite far away. A Gujarati couple, however, does not accept this reason and

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[118] Interviewees who did not report major problems were confronted with problematisations of garbage and overflow others had formulated to understand their reasoning.

terms the solid waste-related practices of neighbours a problem of "mentality", and lack of education and understanding (111109ME).

Yet, all communities agree that the scavengers do not come often enough, or do not clean "properly" (111109KA), allowing the *naali* as well as the main drain to choke. Inhabitants feel that this is partly due to a lack of supervision by the scavengers' superiors. Naribat and Gujaratis also criticise that the scavengers usually leave the silt they take out of the *naali* to dry for several days on the lanes before taking it out of the cluster (see Photo 12). This garbage falls back into the *naali*, especially as children and dogs play around, leading again to choking drains.

Photo 12: A public scavenger picks up the heap of silt he has deposited on the lane. *(Photo: A. Zimmer, November 04, 2008)*

This practice remains, somehow, beyond inhabitants' understanding: "When there was a wedding he [the scavenger] took the garbage away the moment he took it out of the *naali*, so if he can do it that day then why can't he do it every day?" (021109NN). Insufficient and unsatisfactory service delivery by scavengers is therefore seen as the major bottleneck by the majority.

Moreover, infrastructure-related problems, too, fall within the domain of state responsibilities. People list four causes here: One, the main drain is covered and can only be cleaned in bits and pieces around the manholes. This is not enough to prevent choking, so that backflow from the drain into the smaller drains causes overflow to occur. Two, the water supply infrastructure is deficient: Taps that partly do not close contribute to overflow. Three, lanes are wrongly designed, as there is no sideward slope towards the drains. Four, existing drains are dilapidated, inhibiting proper outflow.

Inhabitants also identify political reasons for waste water-related problems. Infrastructure, according to them, is deficient among other reasons because politicians stop the work after election times. *Pradhans* which are supposed to oversee execution of these works are corrupt and thus part of the problem. Politicians' agency is limited with regard to cleaning the main drain

as this would be "a lakhs[119]-rupee-project" (241008RA; 131108KA-PRA). These expenses make solutions of self-help impossible as well. Also, as the politician is not responsive to single complaints, getting the main drain cleaned through him requires collective action. But inhabitants find it difficult to unite as they are mainly daily wage labourers and cannot afford the time to protest.

Given the pressing overflow and cleanliness issue that inhabitants of lower areas perceive, as discussed in section 3.1.1 of this part, it is obvious in this discourse that the conduct of state representatives is very problematic in the eyes of non-elite residents. To a certain degree, however, people inculpate own or neighbours' practices, and relate this to a lack of 'education'. This point is important to note here and will be discussed in detail in this part, section 5.

4.1.2 Elite inhabitants: A political problem or not?

The local elite, comprised of educated and partly politically active inhabitants of the JJ Cluster, names first of all certain structural causes for waste water-related problems. Interviewees hold that an increase in population within the JJ Cluster is responsible for overflowing drains. Subsequently, the lack of space and narrow lanes are evoked as grounds for unsatisfactory service delivery. These explanations echo the field of visibility that state representatives have shown to open up in section 3.2 of this part; this convergence of discourses will be further commented on below. Regarding water supply infrastructure, respondents relate how taps are broken or were never provided with keys. Finally, the small number of scavengers is named as reason for waste water-related problems.

Yet, there is a major division between those holding that cleanliness is a 'political problem' and those who do not. This latter opinion is more common in this group. Most educated JJ Cluster inhabitants believe that cleanliness is inhabitants' own responsibility. A Rajasthani teacher states: "It is people's responsibility to care for the cleanliness, it is no political problem" (171108RA-PRA). The student in Chartered Accountancy has a similar perspective: "[cleanliness] is everybody's responsibility so if everybody cleans there will be no problem." (171109AJ). Some have a nuanced view of a kind of graded responsibilities. A former Trade Unionist argues that "If the administration is loose and the scavengers don't come I think it is the citizens' duty to clean and live in a hygienic environment." (180809AT). Similarly, an ex-member of Deepalaya holds

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[119] One lakh in India refers to 100,000.

that "It's the MCD's responsibility to look after the whole area, but as the scavengers don't pick up the waste regularly, I, as head of household, have the responsibility to look after my family and my house." (201108KI). He also locates the responsibility for overflow with people who opt for an individual solution like putting a net or a brick in the drain in front of their house. Even further goes the Rajasthani teacher: He adds how tap keys are being stolen because they are made out of valuable steel so that running taps create overflow, thus pointing to inhabitants' moral defects to explain problems.

Only two educated inhabitants among those interviewed view the main responsibility as lying with the civic body. A second former member of Deepalaya complains: "The waste water and cleanliness is one of the biggest problems here. The politicians don't do anything for the cluster, nobody does anything. [It is] the councillors' [responsibility], because he is from the MCD. The Councillors have never come here." (161108SH). The daughter of the Bhatt *pradhan*, too, thinks: "The problem of cleanliness is a political problem, the politicians should look after it." (221008JA).

The elite is therefore divided in its allocation of responsibility. Blaming their uneducated neighbours more often than the state, a certain de-solidarisation has to be stated amongst the group that could be instrumental in bringing about change. While this can be interpreted as the acceptance of dominant discourses within society – equating 'slum' residents with dirt-generating activities, as seen in part V – these explanations function at the same time as part of governing practices directed at non-elite residents' relationships with infrastructure and solid as well as liquid waste: they are an appeal to better self-government. At the level of the settlement, too, we can thus identify how subject-positions of the governed are allocated to non-elite residents through the circulation of powerful truths. Their conduct is constructed as object of government by elite residents within the cluster.

4.1.3 State representatives' truths: Faulty practices by the residents

In the same way state representatives problematise waste water very differently from residents, they also present other causes when confronted with reported problems. Yet, the reasons given by the local elite partly resemble the explanations found amongst state representatives. This convergence points at an important fact: powerful discourses seem to circulate between state representatives and those having enjoyed formal education, or being active in social or political organisations, indicating that circuits of communication connect these groups. Those outside the

formal education system and political or social networks, in contrast, seem to be excluded from them, accordingly developing other truths about waste water.

One recurring reason for lack of cleanliness and waste water overflow named by officials is the density of the cluster. Also, people who resort to self-help by building infrastructure, are reported to do so in a way that inhibits efficient service delivery. According to an engineer of the Municipal Corporation, connecting household sinks and drains to the *naali* along lanes, for example, is an "illegal" practice because these are meant for storm water drainage only (050109VE-ENG). These statements refer back to the field of visibility described above: inhabitants' relationship with space and infrastructure is the focus of problematisations. High densities, termed 'overcrowding' by the MLA (see this part, section 3.2), are talked about in a moralistic overtone, a point I will come back to in section 4.3.2 of this part.

In general, the way of life and the practices of inhabitants are described as the major causes of the garbage and overflow problems. The scavengers, too, see people responsible for the sanitary conditions. Against their conduct, the DEMS staff in daily interaction with the inhabitants feels powerless to maintain cleanliness: "How much can the scavenger do? He is a government employee and gets the salary but how far can he go?" (061109HA-SG).

The staff also gives an explanation for the fact that scavengers are not taking the silt out of the cluster immediately: it is heavy, it spills, and spoils the scavengers' clothes. State representatives are aware of the topography of the JJ Cluster contributing to the problem of drainage. All these statements broadly deresponsibilise state actors or justify their practices. As a consequence, the explanations point to the conviction that the situation can only improve if residents change their behaviour.

The state is held responsible to a far lesser extent, and that too, referring exclusively to practices of higher levels of governance. Those on the ground hold that covering major drains makes their maintenance more difficult. Also, proper cleaning was not undertaken before the Southern drain was covered. Finally, political reasons are named: The MLA criticizes that the government does not follow its own rules by not providing sewer lines, and that corruption in the administration hampers service as well as infrastructure provision. Lengthy administrative procedures in contracting out cleaning operations are pointed out by the Sanitary Guide as particularly problematic.

To conclude, the cleaning practices of scavengers (in terms of quantity as well as quality) are not at all problematised by state representatives, who fail to acknowledge what a major part of residents considers to be the main cause for their problems. Instead, they construct residents'

behaviour as the main cause of waste water-related problems. Whereas the focus is turned away from issues such as the absence of dustbins and sewers inside the JJ Cluster, or the lack of sweeping services, let alone bigger issues such as the lack of affordable housing outside the JJ Clusters – in short: from the way activities in the realm of the state 'arrange' urban space – the way inhabitants relate to space appears as a major object of government. Living in a high density settlement is portrayed as unacceptable as it is the root cause for environmental problems and moreover hinders state representatives from carrying out their duties. This discourse follows the line of historical ascriptions of unhealthy and potentially also morally harming living conditions to high densities, so quintessential for the stigmatisation of 'slums' (Legg 2006: 193; Jervis Read 2010: 76).

4.2 Who/how is the Other?

Yet, the construction of Others' conduct as a problem, as a behaviour that needs to be rectified, is more far-reaching than is apparent in accounts of waste water problems. The next section elaborates on truths state representatives and residents form about each other, showing how entrenched depreciative perceptions are.

4.2.1 State representatives, deeply biased in favour of the bare log

Inhabitants of the cluster have a distinct view of the state and its representatives, which is based on own experiences as well as on stories told amongst family members, neighbours and friends. There is, surprisingly, neither a fundamental difference between the accounts of different communities, nor between those with and without formal education, which is why the data are presented in one block. According to residents, there is a clear division in how state representatives interact with citizens. This is less pronounced in the person of the political representative at State level who, according to some, treats "all in the same way" (191109CH), a fact which might point to his obligation to maintain his vote bank. A difference however exists here between those holding a voter ID card and those who do not have such a document. In the administration differential treatment is very obvious.

Inhabitants reported the following distinctions: One group of citizens consists of business people, educated people and rich people; people who have a "name" (010909ME). They are termed "*bare log*" (010909ME), literally big people, by the inhabitants of the JJ Cluster, and equated with those living in "*kothiya*" (061109SH; 091109KI; 170909NB), in good houses of several storeys. These rich people are "of some use" (180809AT; 170909NB) to officers and

163

politicians, and belong to "the same group" as the latter (170909NB) which is why they get special treatment.

The other group consists of the poor, the "*aam*" *admi* (061109SH), literally the common man. Interviewees explained that this term refers to those living in JJ Clusters, coming from a lower class or not having an influential family background; they do not hold any position and are therefore considered as useless by the officials. They are not valued, and not even considered as humans: "we are insects", one respondent holds (170909NB).

How do these differences manifest themselves? Residents from all groups have observed how people from the first category, the *bare log*, show a specific behaviour themselves, refusing to be governed, and instead, conducting state representatives' conduct in a mostly successful way.[120] They inform themselves beforehand to find out about the responsible officers. If they are made to wait, they start complaining and shouting. Some might bribe the relevant officers.[121] This behaviour, together with the attitude of the officials towards the potentially useful citizens, results in the following interaction:

Bare log, most of the time, do not have to go to any office in person, they can send someone or make a phone call to get work done. If they do go in person, they go straight to the responsible officer; they do not have to queue. They are attended to immediately, they are listened to – amongst other reasons, because officers are afraid they might "do something" if their expectations are not met (310809HA). As a consequence, their work gets done quickly. That skipping the queue in this context is considered normal (even if it is not estimated to be legitimate) by all concerned points to the reversal of the "ideology of equality" that the queue expresses (Corbridge et al. 2005: 31).

Inequality is therefore the norm between the *bare log* and the *aam admi* which my research assistant described as "innocent people" during our discussion. The latter, following the accounts of interview partners, depend on meeting a nice officer – they are at the mercy of the state representatives they want to meet. They have to "enter through the main gate" (091109KI), and have to wait in the queue. Often, they are sent away to come back another time. Trying to get official work done is therefore described as an experience in which "poor people's legs start hurting" (121109RU). They experience rude language, and might even face physical aggression: "The *jhuggi* people are thought of as useless, they are of no use, so the

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[120] See Corbridge et al. 2005: 115 for a discussion of similar observations in rural Jharkand, where insistence and threatening of officers were used by better educated and connected villagers.

[121] Inhabitants also noted that the rich sometimes straight away opted for a private solution without getting the state involved.

politicians think they can slap them and get away with it" (180809AT). In short, *aam admi* are those who do not know or are unable to use the loopholes and shortcuts within the administrative process. They are the ones who lack a personal approach, so valuable in the Indian bureaucracy, and cannot enter in the exchange of favours with officials (Corbridge et al. 2005: 115). As a result, they are assigned a different subject-position than the *bare log*; one which is predicated on their patient waiting for a state representative's benevolence. This institutionalised inequality severely limits JJ residents' ability to claim state services in the waste water governance, and moreover acts as an active discouragement to attempt doing so.

4.2.2 'Slum' residents, an undisciplined and uncontrollable part of the population

State representatives, as a general outline, describe 'slum' inhabitants in general as "different" (101109RA-SS) from themselves or other people. This points to very strong processes of Othering which take place here and which affect all JJ residents similarly as no distinction is made between different groups or individuals. There are broadly four dimensions of JJ residents' image: moral inferiority, lack of education, a recalcitrant character, and the sense of an uncontrollable agency 'slum' inhabitants have. These will be elaborated in the following, highlighting the way narratives reflect larger discourses.

Yet, within the groups of street-level bureaucrats, scavengers occupy a special role here. Because of practices of untouchability, they are socially in a similarly low position as JJ residents at the bottom of the social hierarchy. This shapes the relationships between scavengers and residents in a particular way. One of the scavengers has good chances to get a permanent post. He is eager to distinguish between his low social status related to his occupation, and inhabitants' status: "My status is much, much better, they are beggars, they beg to eat" (041108VI-SK), he insists. His job might be perceived as dirty by others, but amongst the people of his community, it is respected: "In my place, it is like that, if you have a government job you have a better status, otherwise people will be saying that you're not doing anything." (041108VI-SK). It is, therefore, in his eyes a good job which allows him to provide for himself and his family, while 'slum' inhabitants depend on others' mercy and do not do any work.

More sympathetic accounts come from the two scavengers who have fought long and fruitless battles with their Department to become enlisted permanently. The fact that they feel more close to the inhabitants of the cluster was visible when they chose to sit in the courtyard of one of the Naribat huts for the interview, in contrast to their colleague who had asked to have the interview conducted outside the cluster. When explicitly questioned about their status in comparison to inhabitants', one scavenger responded: "We are as poor as them, we are like

brothers [*bhai chara*]" (071108AN-SK). Despite this closeness, practices of social differentiation play a role:

> Scavenger: "Although we are like a family, because of the dirtiness of our job, we experience untouchability."
> - Does this mean you can't drink water here?[122]
> Scavenger: "No, we can drink it from here."
> The neighbour close to whose hut we are sitting intervened at that point: "We are all the same here."
> Scavenger: "There is a cooperative relationship with the people."
> (071108AN-SK)

Sympathy develops because the scavengers identify with the impression of being let down by the government and the precarious economic situation of JJ Cluster inhabitants. Amongst all other state representatives, however, residents of the JJ Cluster are looked down upon.

A moral judgement on 'slum' residents

Moral inferiority is attested when interviewees describe inhabitants as irresponsible and dirty. The Sanitary Guide holds:

> "they are not interested in creating a clean environment, they don't take any responsibility. They are used to living in a dirty environment, they are illiterate, they don't know anything about cleanliness. Like worms or donkeys that you can take out of the dirt are coming back to the dirt. Those people behave the same way." (101108CH-SG).

This is a stark example in which residents are equated to animals in order to express that they are different to the point of questioning their belonging to the human community.

Officials also highlight that parents do not instil in their children a proper sense of cleanliness and related practices: "The parents are the problem, they do such a thing [throw garbage on the road] and the children learn from them." (101109RA-SS). It is deplored that children are allowed to use the drains as toilets. Thus, while criticising residents for being morally inferior, it is at the same time conveyed that there is no hope for the new generations, as children do not receive proper upbringing. "How can the future be different, if they are comfortable living there in a dirty place? They are dirtying the place, (…) their condition can't improve", the Sanitary Guide states (101108CH-SG).

The problem of not giving a proper example to the children is seen as severe, moreover, because "these people have many kids" (030909CH-MLA). This statement (equally visible in the advice to

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[122] Not offering to or not accepting water or food from certain groups is the most common expression of caste-related discrimination in the Indian context.

multiply JJ households by five to estimate the total population, see this part, section 1.1) inscribes itself in a larger discourse dating back to the early 20th century that equates high population growth with backwardness (Hodges 2004: 1159). High levels of fertility were seen here as an obstacle to progress and modernisation of the country. Situating residents in this discursive context therefore portrays their perceived 'backwardness' as a risk to the whole country, hindering 'progress', in this case, towards a 'slum-free' Delhi. Also, the MLA is convinced, that lack of private space makes children become "mature before time" (030909CH-MLA). This reflects the problematisations of 'overcrowding' in moral terms mentioned in section 3.2 of this part. Discourses on sexuality and reproductive behaviour are thus moreover used to degrade residents, presented as lacking a sense of privacy and body discipline accorded only to higher social classes.

The politician points out that the moral inferiority he perceives is grounded in material conditions: "They don't have any moral or character strength because their condition doesn't allow them to" (030909CH-MLA). This, according to him, also leads to the fact that residents are only interested in money. This interest then is at the heart of a concern the politician has: "In the low income groups (…) 95% [sell their votes]" (301208CH-MLA). Because people are poor, he elaborates, they are prone to being bought. This picture of the 'slum' residents is thus used to label them as unreliable, and in fact a risk for the proper functioning of the representational democracy.

Lack of education

A part of the perceived moral inferiority is related to inhabitants' lack of education, as seen in the statement of the Sanitary Superintendent on p. 166. This is also brought up by staff in the ward when discussing residents' knowledge of the sanitation system. Residents are depicted as lacking crucial information in their attempts to solve their problems – they cannot distinguish between the different levels of government and do not know whose responsibility waste water is.

The preoccupation with education reflects in fact a discourse founded in the nationalist movement at the beginning of the 20th century (Prakash 1999: 190). For Nationalists, India's future as an independent nation had to be based necessarily on education. Only through systematic training of its citizens would the country achieve "industrial efficiency and economic progress" (Malaviya 1916 in Prakash 1999: 190). While this larger economic aim might not figure prominently in the minds of the Sanitary staff, their statements nevertheless convey that they are not at ease with residents' lack of education: in their perspective, it obstructs the proper

functioning of public service delivery. This substantiates findings of Coelho (2005: 180) who recorded complaints by street-level engineers about "people from the slum" whose lack of education was said to make service delivery problematic because constraints of the service were supposedly not understood by them.

Interestingly, comments on the educational status of residents come from all but the scavengers. In my understanding, this is due to the fact that these employees are themselves not highly qualified in formal terms: all scavengers working in the cluster are illiterate (041108VI-SK; 071108AN-SK). Relating criticised practices to lack of education would therefore imply putting themselves down.[123]

A recalcitrant character

Residents' whole lifestyle is understood as a challenge to state practices: The MLA reports misuse of public hand pumps, and resistance to resettlement projects. The Sanitary staff observes how inhabitants put solid waste in the drains, pick out resalable items from garbage heaps, thereby spreading the garbage again, and do not use dustbins. Scavengers complain that working in the JJ Cluster is not pleasant as people behave badly towards them. Statements like these reflect experiences of the ground staff where state representatives do not feel respected in a way they think to be entitled to.

State representatives therefore try to instil discipline and bring about behavioural change in inhabitants. But residents do not react positively to these interventions: When he complains about their behaviour, the MLA states, "they keep threatening that they won't vote for me again" (030909CH-MLA), hinting at inhabitants' way of steering his behaviour. The street-level staff of DEMS has concerns of an equally personal nature. It is decried that 'slum' residents are not showing any deference to the state representatives: "they are not afraid" (101109RA-SS). "Even in front of my own eyes it can happen" that people dispose of their garbage in the drains, one of the scavengers highlights his powerlessness (071108AN-SK). Residents do not accept the role assigned to them: "if someone says something they will say 'ok, you have started teaching me!'", the Sanitary Superintendant notes (101109RA-SS). Scavengers share this experience. An officer in the Zonal office adds that JJ inhabitants threaten Sanitary staff when trying to impose justified fines for littering public space. In sum, "they don't listen to anyone" (101108CH-SG). This behaviour is perceived to be more prevalent in the Southern parts – i.e. in those areas

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[123] Coelho (2005: 180-81) understands talk about illiteracy of citizens as a "vocabulary of strategic silences" which hides caste ascriptions. This might be another reason why scavengers, themselves Scheduled Caste, do not join in this discourse.

where Naribat and Gujaratis live. But state representatives do not identify different groups, and tend to lump all 'slum' residents together. 'Slum' residents therefore appear as an undifferentiated mass of people which are difficult to educate, and thus difficult to govern in the eyes of state representatives. They refuse the subject-position of the governed, something state representatives deeply disapprove of.

An uncontrollable agency

This difficulty translates in a more general anxiety that state representatives feel with regard to 'slum' inhabitants: They are not controllable. Similar impressions were already apparent in statements regarding their perceived lack of discipline and the impossibility to teach them. But the apprehensions are more deeply rooted in that they refer to the whole process of how the clusters are set up. 'Slum' residents, according to the Senior Sanitary Inspector, "just occupied the ground" and "just built huts by their own" (071108HA-SI). They build their own houses, and that too, in a fashion that makes scavengers' work difficult. If the state devises projects for JJ residents' upliftment, resettlement plots are being resold. The feeling of lack of control that transpires from these statements is echoed at the lowest level of the Department when the scavenger describes that "The government doesn't give us any power over them [the residents]." (071108AN-SK). The part of the population that resides in 'slums' is thus associated with fear in the eyes of the state.

This discourse reminds of the 'Masterplan angst' described in part V. The field of visibility that problematises JJ residents' relationship with urban space is apparent here too – and the fact that state representatives feel unable to steer this relationship leads to an uneasy feeling of loosing control, of lack of order, and the frustration not to get a hold on spontaneous settlements.

Proper citizens?

The discussed dimensions of the state representatives' views of 'slum' residents crystallize maybe best in the expression of civic or civil sense.[124] Although all the interviewees had different understandings of what civic sense means, most of the officials agreed that 'slum' inhabitants do not have it. This meant disparate things such as throwing solid waste in the drains (071108AN-SK; 101109RA-SS), spitting (101109RA-SS), and selling votes (030909CH-MLA). All in all, however, it seems obvious that JJ residents do not show the kind of behaviour that the state expects from citizens, and therefore in the eyes of its representatives they do not qualify for full fledged

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[124] Interview partners used this English term. Only one of the scavengers used the expression of common sense instead.

citizenship. Citizenship therefore appears to be intimately related to notions of governability: citizens are recognised as such when they subscribe to the moral norms of the majority, are educated and disciplined, act in a malleable way, and most importantly are controllable in their practices, i.e. responsive to a display of state power. They have to accept the subject-position of the governed vis-à-vis state representatives.

To conclude the section on knowledge on the Other, the knowledge inhabitants have about the state leads to an image of this institution as generally more accessible to the rich and mighty. As a consequence, equality amongst citizens is something people hope for, but nothing they believe in. Their truth is: state representatives are highly biased against them. With regard to waste water, this entails that assistance people want to request from the state, be it in the form of infrastructure or services, is something that is infinitely difficult, time-consuming and unpleasant, if not outright degrading to get. This experience poses the question of whether seeking state assistance is worth trying or not, and actively discourages residents from doing so. Similarly, state representatives see 'slum' residents as uncontrollable. For the waste water governance, this means that changing inhabitants' habits of littering drains and streets and therefore contributing to the clogging of the waste water drains is something state representatives see as extremely difficult and frustrating to deal with. Subsequently, this experience is used to justify a certain negligence by state representatives, as efforts are perceived to be in vain. Knowledge about the Other then functions as governing practice in two ways: it leads to inhabitants approaching the state for services less often, and it makes the state's lack of commitment in resolving waste water problems in the JJ Cluster acceptable.

But in how far do residents take on or resist the ascriptions made by the state representatives? Do the truths state representatives circulate actually have a governing effect on inhabitants? In brief, which subjectivities do they form in this environment?

5 Subjectivities of JJ residents and their impact on practices of waste water governance

The formation of subjectivities, of course, is nothing that can be handled in an exhaustive measure in this PhD. Yet, to understand the way waste water in JJ Clusters is governed, light can be shed on this issue to some extent. With regard to their subject-position as citizens, discourses of state representatives, and the way they interact with residents, influence the way the latter see themselves, as discussed in part II, section 6.1.3. These discourses can be accepted or

resisted, so that their effects are not straightforward; moreover, subject-positions are never fixed, but rather in constant re-negotiation. The following section will elaborate on how the various groups of the cluster show significant differences with regard to their self-perception.

5.1 Naribat: Stuck in poverty

Talking with Naribat, a feeling of insecurity transpires from statements, which is related to fear of evictions, as well as low levels of education and income. People deplore their lack of understanding which makes them vulnerable: "We are uneducated and illiterate, any person can make us sign whatever with our finger prints, so we are afraid of signing something that is bad for us, like for evictions. We are easily cheated." (221008SA). The qualification as uneducated that was seen in state discourses is thus repeated here and accepted as a major shortcoming in interaction with the state.

Lack of education, in the eyes of community members, results in a situation where poverty is prevalent. Some have to beg, others are indebted, and some interviewees admit to not have more than a meal a day. In general, Naribat families live hand-to-mouth. For this reason, most people engage in daily-wage labour, and therefore lack time to unite and claim support from the politician in issues of waste water drainage among others. Another consequence is that children cannot go to school, because their parents lack money for purchasing books or paying admission fees or bribes. Illiteracy and poverty are thus linked phenomena. Education, however, according to interviewees, is also neglected because of lack of awareness, and the failure to provide the necessary certificates. The outlook on the future is therefore bleak:

> "My brother and sister-in-law are not schooling their kids because my sister in law says they will get lost [on the way to school]. She doesn't understand that in the future they won't face the problems we are facing now because we are uneducated. In my community, people don't give importance to education and most of our children won't find a job, and life is getting more and more expensive" (191109CH).

People do not imagine a life outside the JJ Cluster; instead, they have the impression that they will live in the cluster for their whole lives, echoing the Sanitary Guide's pessimism about future change. This leads to hopelessness regarding also their own status in society, as expressed in the words of one inhabitant: "The poor will remain poor, the rich will remain rich; who will compete with the rich? We are not even getting the horse, how will we compare with the elephant?" (191109DE). This quote moreover illustrates how Naribat conceive of a major and insurmountable divide between them and well-off sections of society. The discourse of difference that state representatives use to describe 'slum' residents, and the differential

171

treatment residents receive in interaction with state representatives, therefore seems to have affected people's self-perception. Blaming differences on own shortcomings, such as lack of education, awareness, and understanding conveys feelings of inferiority. If Naribat have to endure the difficult living environment, including exposure to waste water, it might, according to their perception, be due to own 'deficiencies'. At the same time, hopelessness further reduces the motivation to seek state services such as cleaning of drains, because it is not expected that efforts will show any positive results.

In contrast to this stands the self-identification as Rajputh, as higher caste. People believe in a glorious past where they had a better status: "Our ancestors had lots of money, but it got exhausted so now we live in the *jhuggis*" (251009KE). This shows that subjectivities are never uniform and homogeneous but rather conflict-ridden assemblies of a variety of subject-positions people take up in relation to various Others. Negotiations of the social position in the space of the city are therefore ongoing, and positions are never fixed. This will show particularly in interactions with the scavengers, discussed in section 6.1 of this part. Resistance to the dominant discourses is however feeble in this community, showing the governing effects of 'truths' which state representatives circulate.

5.2 Gujaratis, illiterate Rajasthanis and Muslims: Hopeful to get out of the dirt

Gujaratis describe their way of life as getting married early and starting work life at a young age. They take pride at their financial independence, therefore resisting ascriptions such as those made by one of the scavengers who describes them as beggars. Nevertheless, and especially in comparison to the scavengers who have a government job, they see their economic status as very weak, because their occupations do not offer security and income is irregular. Rajasthanis describe their financial situation as follows: "We take water from the well every day and drink it the same day" (111109KA). Gujaratis complain that whatever money they earn is exhausted by daily expenses, too. As they have learned that state representatives respect only the rich, their relative poverty makes them feel insecure. Due to economic instability, Rajasthanis and Muslims partly live on rent. In the Gujarati community this seems to be less, which might be related to the fact that they settled in the cluster first.

Illiterate Rajasthanis decry their lack of awareness, which prevents them from availing government benefits like subsidised food rations. Illiterate Muslims feel that educational as well as financial factors lead to them living in the JJ Cluster, not allowing them to lead a proper life as a family: "This is our compulsion [*mazboori*] that is why we live here; this is not home [*ghar*], how can you call it home [*ghar*]?", a woman asks (121109GU). Moreover, Muslims feel that

illiteracy exposes them to shame. Interviewees therefore educate their children in order to offer them a better future. This perception and subsequent response shows how these groups accept the state discourse on the importance of education. Their lack of education is perceived by them as a major problem, and the need to change in this regard is acknowledged. Yet, it is mostly related to their economic situation, and not to issues of behaviour.

Unlike the Naribat, however, Gujaratis and Rajasthanis feel hopeful about the future: some have been allotted flats through housing schemes for the poor; others hope for resettlement in the process of upcoming elections. Those who are fearful about resettlement because it might lead to them losing their jobs, have faith in the support of the MLA. Others look forward to it: "We feel good to get out of this dirty place, who wants to live in dirt?", a young man asks (271108SA). Similarly, a Rajasthani woman hopes for a place "where we can live like human beings; here we live like insects" (310809KA). While these statements show how residents perceive a great divide between their settlement and others described in a similar way by state representatives, they also highlight that people do not accept the ascription of dirtiness. They rather put forward that they too hate the dirt and are no different from other citizens in this regard. This is further obvious in the fact that amongst Gujaratis, identities are based on the understanding of one's own status as high in terms of the caste system. They highlight their liking for fresh food and the fact that they clean and prepare food like *bare log* – since they are the ones performing these tasks as maids in richer households. Inhabitants also take pride in their good health. These feelings of self-respect are hurt by the government on a regular basis, as a young man describes: "Now it's election time, so they clean because the politicians come and their feet get dirty; otherwise they treat us like donkeys and horses." (271108SA). While the politicians' desire for cleanliness is respected, their own is not; they are not even treated as fellow human beings.

The repeated comparison with animals – donkeys, horses, insects, and we will see in the following section, cats and dogs – seems to be an appropriate metaphor in describing the feeling of lack of respect JJ residents in general experience from the rest of society, as well as the perception of an insurmountable divide. Yet, in the view of this group in particular it is not due to personal characteristics; this divide is linked to the space they live in – the JJ Cluster. As a result, it is not them who have to change: their hope for betterment is fixed in the idea of leaving the JJ Cluster behind, a hope which is grounded in external actors, such as the politician or the government more generally. This discourse highlights that these communities understand themselves as perfectly suited for a life as active and integrated members of society. The narrative of difference which the state representatives express is not followed by them. For the

waste water governance these views means that state services are expected as people feel entitled to them. Stagnating waste water and overall dirtiness, in their perspective, is not due to own 'deficiencies', as state representatives try to convey, but is the result of neglect by the state. The governing effect of state discourses on this group therefore seems to be limited to people's growing recognition of benefits linked to education.

5.3 The local elite: Fighting back or moving out

A very different picture emanates from the statements of the local elite. Educated interviewees complain about neighbours' dirtiness, bad language, violent behaviour, problems of criminality and prostitution and the culture of early marriages in order to distance themselves. They feel that the environment in the JJ Cluster is such that "people live like cats and dogs" (120809AT). Comparing themselves to uneducated neighbours, educated interviewees present themselves as hard-working and knowledgeable about matters of cleanliness and birth control. This shows how educated inhabitants refuse the state representatives' discourses on the dirtiness and lack of discipline of 'slum' residents in matters of reproductive behaviour with regard to themselves, while reproducing them with respect to their lesser educated neighbours. For some, a good family background and higher caste are part of the identity they ascribe to.

Not surprisingly, the educated interviewees highlight the value they give to education. A former member of the NGO Deepalaya, who presents himself as a social worker, is one of them. He studied up to class 10, and attended several training courses throughout his life, in order to escape poverty:

> "I was the oldest boy so I could study up to 10th grade. Then I saw that the money was becoming less and less, as we had more and more children. And I decided I wouldn't do it like my father. (…) I decided to have only few children, and give them all a good education." (161108SH).

In his account, the capacity to analyse his parents' mistakes has brought him forward. Yet, some are still not satisfied with the progress they have made, as his fellow ex-member of the NGO relates:

> "I did only up to class 12."
> - Why do you say only? That is a lot!
> "I feel that it is little because in Deepalaya there were many people who had done a Master of Social Work or M.A., double M.A. and so on."
> (201108KI)

While the Naribat woman quoted above forbids any comparison with the rich, this statement shows here how the people the interviewee looks at to assess his status are precisely the

educated NGO activists residing outside the JJ Cluster. Younger people, too, compare the JJ Cluster and their situation with the rest of the city. They seek to go outside and thus experience the difference – in contrast to their fellow JJ residents from other communities. "They [uneducated inhabitants] are treated as separate people, they live here their whole life and don't know anything about the outside world", the future Chartered Accountant complains (221008AJ). From his exposure he concludes that life can be "beautiful" and that "things can change". Enthusiastic about Obama's election in the USA, the daughter of the Bhatt *pradhan* equally holds: "Like in the US there was a change, we too need a change like that here!" (221008JA). Despite showing that educated inhabitants resist the pessimistic perspective the Sanitary Guide has on the JJ Cluster's future, these statements also demonstrate that those who move in the city more and enter spaces dominated by non-JJ-residents, such as malls or restaurants, are more exposed to discourses on 'slum' residents. Feelings of shame are therefore stronger in this group than in others.

Because they want to achieve change, several educated inhabitants get into political activism and social work, refusing the subject-position assigned to them by state representatives. They feel a responsibility to create awareness and take pride in assisting their neighbours in matters of waste water infrastructure provision. Responsibilities towards their own family however restrict this commitment, as meddling into politics is a risky business:

> "Whenever I do something, I am called by a politician, I won't say his name now, and he threatens me, saying: What are you doing? You are trying to be a smart politician? So I retreat. I am outside a lot of the time, and I am afraid my family might be beaten up while I am away." (161108SH)

A shop owner recounts an incident where the MLA's brother has slapped someone in the face. As a consequence, he says, people avoid going there "to save their honour and not to take any risks" (241008RA). The ex-Trade Unionist had similarly bad experiences with this same brother. Defiantly, he holds: "But I know the law, and I have two hands just like him, so why should I be afraid? I can fight back!" (180809AT). The daughter of the Bhatt *pradhan* also recounts how her father was threatened with a gun at the election booth once. Subjectivities of politically active inhabitants therefore seem to centre on the notion of fighting for their rights: "I am a freedom fighter, a social worker", (120809AT), the former Trade Union member presents himself. This encourages them to struggle for state services such as the provision with waste water infrastructure and scavenging services.

Despite efforts, interviewees feel that they are "left to the mercy of the god" (180809AT). Partly out of their frustration with ineffective political activism in the past, and in contrast to the position of the 'freedom fighters' or 'social workers', some therefore chose the path of individual economic upliftment instead. Better education is recognised as a means to get higher incomes. Interviewees get into jobs or join saving groups. The future Chartered Accountant opines that "The problems in the JJ Cluster should be ignored because the main problem is living here in the first place (…) [People] should work hard to go and live in another colony. The poverty issues cannot be solved by outsiders." (221008AJ). Accepting the state representatives' judgements that 'slums' are places beyond hope, they opt for leaving it. This is a choice that both former Deepalaya members made: between both periods of my fieldwork they moved out of the JJ Cluster. In the participatory mapping exercise of the daughter of the *pradhan*, this tendency also showed in an impressive way: When asked to draw the cluster, she drew her lane, and then very accurately drew all the exits towards the main road – but none of the streets further inside the settlement. This attitude obviously stops educated residents from struggling for public waste water services for the JJ Cluster.

While Naribat see no hope of leaving the cluster, and illiterate members of other communities look forward to assistance by the state, the local elite therefore presents a picture where own efforts are used to bring about change – be it collectively through political activism that aims at intervening in the waste water governance, or individually through education and better incomes that allows leaving the JJ Cluster. A greater belief in their own agency thus transpires from the interviews with these residents. Their knowledge and experience is perceived as an asset which gives them power to shape society – or at least their own life. Yet, while those who decide to stay back and struggle for betterment seem to assume a subject-position of those trying to govern the state representatives in order to achieve their support, moving out might be understood as an acceptance of the subject-position of the governed within a liberal governmentality – accepting the arrangement of the JJ Cluster environment, and reacting by leaving it.

6 Technologies of government in the waste waterscape

Under the conditions of continuous exposure to waste water, we have seen in the last sections how ways of perceiving waste water, knowledge about it and knowledge about the Other function to govern the waste waterscape. State representatives' failure to acknowledge serious overflow problems, and their discourses on residents' responsibility for any possible

inconvenience, produces a situation in which minimal state efforts are not only justified, but moreover the only rational option. The views of a majority of inhabitants, in contrast, claim that the state can, and indeed should, intervene much more. Not all residents, however, feel in a position to struggle for services. Especially Naribat feel relatively powerless to do so. Against this background, which technologies do state representatives and inhabitants chose to conduct each other's conduct? In part II, section 6.1.4, it was highlighted how technologies of government designate the patterns of techniques and practices which "translate thought into the domain of reality" (Miller & Rose 1990 in Dean 1996: 49). The following section elaborates on the most prominent patterns which showed in the field.

6.1 Governing the state

The last sections have already forcefully shown that inhabitants are far from being passively subjected to governmental power. Rather, they try to influence state practices based on their perspective of and knowledge about waste water problems, the image they have of the state, and their understanding of their position as citizens. The most wide-spread technology of government used here is, as will be shown, the complaint in its different forms.[125] This mirrors observations of Sakdapolrak (2010: 249-252) who has shown how in a similar setting in a Chennai squatter settlement complaints at the administrative office or the Municipal Councillor's office were the most common strategy of residents in order to pressure the state for solutions of waste water-related problems.[126] Voting, too, appears as a major technology. That complaints are effective shows in interviews with state representatives which reveal that complaints are feared: scavengers are afraid that people will complain to the Sanitary Guide; the Sanitary Guide is afraid people will complain to the MLA who in turn can get him transferred; and the Sanitary Inspector is scared that people's littering the roads will make residents of other, formal settlements complain about him. But how exactly are complaints used by residents?

6.1.1 Naribat: Limits of governing

As seen in section 3.1.1 and 4.1.1 of this part, Naribat report frequently overflowing waste water drains and unsatisfactory services by the scavengers. Despite their pessimistic outlook, they therefore aim at better service provision. In order to achieve higher frequency of the service,

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[125] Coelho (2005: 185-86) describes how the complaint is a concept around which street-level bureaucratic service delivery is structured. In reforms in Chennai, the number of complaints has been used by higher levels of governance to control the performance of ground staff.

[126] Berenschot (2009: 110) notes, although in a different setting, how dealing with complaints about waste water problems present a large part of the work of Municipal Councillors.

some inhabitants go to the MLA to complain, who is perceived to be powerful. This happens around two to four times per year. At his residence, someone helps them in writing an application. Complaining is felt to be a potentially successful strategy not only because politicians and administrative officers have the power to dictate to the scavengers; they are also able to punish the scavengers by transferring them. Yet, transfers are not always an effective threat:

> "The new scavenger, when we tell him we will complain (…), he says 'ok, you can tell anyone, I am not afraid'. So that means he wants to get away from here, he wants to get transferred." (191109CH)

The complaint as a technology of government has thus limits in the eyes of this group. Therefore, "people have stopped to unite to get it [the covered drain to the South] cleaned. We got tired of it, and can't afford losing our time because we are daily labourers. (…) Nowadays we don't go to complain for anything" (231008CH).

Although some people feel that the MLA depends on their vote and is effective, many inhabitants of this community are tired of going to the politician as they feel it does not result in problem resolution. "We are frustrated that he just takes the votes and never does anything", a woman complains (121108MA). Voting, too, is therefore not perceived as a powerful technology by the majority of this group. At best, help is short-term and within ten days things go back to their original state. These experiences are reflected their own hopelessness regarding betterment seen in this part, section 5.1.

Some Naribat use the administrative hierarchy to conduct the scavengers' conduct, i.e. to achieve more frequent or better service. They complain to the Sanitary Guide when he comes for his supervision round, or even to the Sanitary Inspector. The Guide then "slaps and scolds" (121108MA) the scavenger in front of them to humiliate and thus punish him.

However, because this strategy does not show long term results, and as the Sanitary Guide is not always around, negotiations with scavengers take place on a day-to-day basis. In these negotiations about who has to clean the drains how, quarrels are common. People shift quickly between communicative strategies claiming brotherhood and caste-related humiliation, reflecting their own navigating between a low social position and a higher caste status (see this part, section 5.1).

"We try to negotiate politely. We call him *bhaia* [elder brother] first and he says: 'You call me *bhaia*?' Then we say: 'Bhangi,[127] do this properly', and then he gets more angry and leaves. He is a bit crazy. He says: 'You call me bhangi?' Then we say: 'We called you *bhaia* first!' But he doesn't listen." (251009KE)

This quote shows how ascribed identities are utilised in governing interactions, trying to confer to those with a lower status the position of the governed who has to clean the waste water drain the way the governing actor wants. The observation that the scavengers 'do not listen', i.e. do not accept being governed by the Naribat residents, is shared by one more woman. A few therefore pay the scavengers money to enhance their leverage. Yet, Naribat have in the past also resorted to punishing one of the scavengers through physical violence when they realised that he took money from households but did not collect their solid waste. After getting beaten by the residents, the scavenger was then also beaten by the police, and finally got transferred. This drastic strategy appears to them to have been successful: "[The new scavenger] is doing the work much better, because he knows that [the former scavenger] was beaten by my father." (121108MA), an interviewee explains.

In both cases – following complaints to the Sanitary Guide and after the physical fight with the scavenger – it is important to notice how state representatives (police and the Sanitary Guide) physically punish the scavenger in conflict with the residents. Despite the scavenger being a government employee, other actors in the everyday state thus seem to regard it as more important to please the JJ residents in these situations, showing how extremely low the position of scavengers is within the state hierarchy and society.

To sum up, the two major technologies of government, complaints and voting, appear to work for Naribat only to a very limited degree, reflecting their relatively powerless position as compared to other residents. Although people are aware of successful strategies, they moreover face the problem that gathering in a group is difficult for them as they have to work inside or outside the house. Therefore, incidents of violence have occurred, and verbal conflicts with scavengers are the order of the day.

6.1.2 Gujaratis and Rajasthanis: "If we go many, many times, he gets irritated"
Perceived problems amongst Gujaratis centre on solid waste and subsequently on better services by the scavengers. In order to get the scavengers to come more often, or if there is a

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[127] Bhangi refers to the caste denomination, see part IV; yet, scavengers themselves used the name of Valmiki to describe their caste.

major problem with overflow, people go to the MLA directly, as he is seen as the most powerful actor in the waste water governance set-up. In each rainy season habitants gather in groups of 10-25 and go to his house around two to three times. Some enlist the help of the *pradhan*. However, this is assessed as not very effective as the *pradhan* "has no power" (311008JA-PRA); some refuse to go to these informal leaders, as *pradhans* take money (see this part, section 2.3). At the MLA's house, inhabitants can complain orally, or write an application; this can be done by them, or by the Assistant of the MLA. For major help, i.e. in order to get the main drain desilted, or for road and drain construction, people admit that they need to go repeatedly: The MLA has the power, but does not always use it. One Rajasthani woman tells how assistance is finally achieved "if we go many, many times and he [the MLA] gets really irritated" (310809KA). Mostly, relief is obtained when elections are around the corner. Those who are politically more aware are therefore conscious of their power as voters: "We wanted cleanliness, and said if you want our vote you will have to do it" (310809HA), a woman tells with regard to the repair of a section of Rajasthani gali. This strategy was successful: Between the two periods of field work, the street got repaired shortly before the National elections and overflow of drains did not occur any longer.

Some Gujaratis who do not live in the main Gujarati part of the cluster seem to be more excluded from the processes of claiming state services. They feel clear limitations in their ability to conduct the politician's conduct. As they consistently supported the Congress party to which the MLA did not always belong, they recount how the politician remains evasive by alleging that people did not vote for him. Also, they did not feel represented by the Gujarati *pradhan* (before he deceased) and perceive that without a *pradhan* "things are even more difficult to get" (241008JA).

To sum up, complaints and votes seem to be relatively successful if residents unite and go to the politician's residence repeatedly. For infrastructural upgrading, however, extra pressure through upcoming elections is necessary to make the technology of the vote more powerful. Due to these limitations, a major part of the governing interactions with the state takes place when scavengers are on duty in the cluster. Trying to solve problems of solid waste heaps and garbage in drains, Gujaratis and Rajasthanis resort to giving the scavengers small amounts of money (10-20 Rs).

6.1.3 The local elite: "I changed my tone"

I have shown in section 2.1 of this part that most educated inhabitants live in the higher areas of the JJ Cluster and thus waste water overflow – as seen in this part, section 3.1.2 – is not

problematised by them. Also, most of them hold their neighbours responsible for waste water problems. Their accounts therefore show a striking absence of attempts to govern the way scavengers clean. Only in two interviews the problem is mentioned. A former member of Deepalaya recalls how neighbours give the scavenger money or invite him for tea or water in order to influence him. More strategically, the ex-Trade Unionist advises that "If the citizens are aware and start cleaning, then the scavengers will feel that they are not completely dependent on them so they get scared that if they don't work properly we can complain and they might loose their job." (180809AT). While this statement betrays the acceptance of a discourse on behaviour change, it equally shows its strategic and political reinterpretation: people ought to change in order to gain leverage over state representatives. Overcoming "mentalities of dependency" (Miller & Rose 1990 in Dean 2010: 77) is used here as a tool to gain power over the lowest ranks of state employees at least. This shows that dominant discourses that play a role in governing JJ residents are rarely if ever accepted in a passive way: even where they are reproduced to a certain degree, they experience reformulations that are suggestive of people's ability to resist them.

Mostly, however, interventions of those educated inhabitants who (as I have discussed in section 5.3 of this part) decide to struggle for better waste water services, seem to centre on other, more structural problems, such as the provision of infrastructure, the desilting of the covered drain, and the frequency of service. They want to attack underlying causes of overflow and dirt. To do so, it is the state that has to change – a claim that refuses the call for behavioural change emanating from dominant truths.
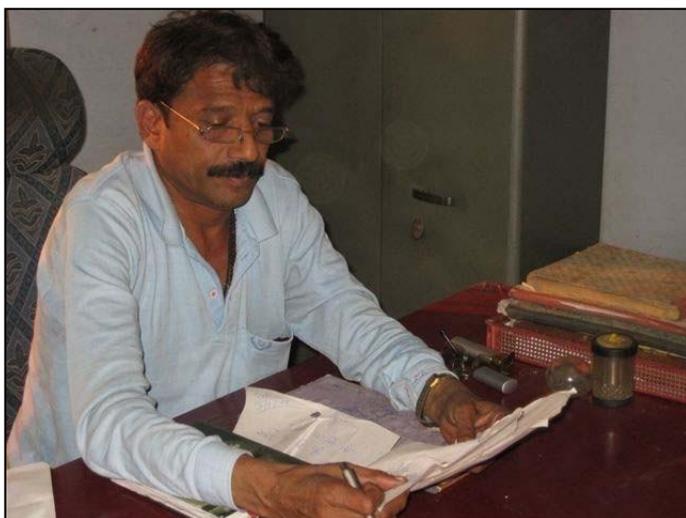
Photo 13: The Sanitary Inspector of the ward reads a written complaint about an overflowing drain he received. *(Photo: A. Zimmer, November 07, 2008)*

In that intention, interviewees create a discourse on state obligations which ranges from better supervision of cleanliness by the Municipal Councillor to general strictness of politicians towards the administration. Techniques such as personal complaints in written and oral form are also used by them (see Photo 13); the Jatav *pradhan* even has the phone number of the Sanitary Inspector to

contact him directly. Moreover, complaints are addressed not only to local representatives but also to the Town Hall Commissioner of the MCD, and inhabitants boast they could even question the Chief Minister if they wanted.

The daughter of one *pradhan* recounts how she went to the ITO office[128] on her own to complain about a ration card related issue. She gave the officer her phone number and managed to resolve the problem after a few days, thus interacting in a different way with him than those residents choosing to use the power of high numbers and annoying the officers until they react. Similarly to what was found in other groups, interviewees relate complaining to voting. "We have the right to go united to the MLA and ask to get the drains cleaned; we said that since we voted for him this is our right" (170909NA), an educated Muslim replied when asked about citizens' rights. Yet, it is more obvious here that voting conveys a power of punishing the politician by not re-electing him if he does not perform. Complaining does not merely mean to ask for help – it is about claiming a right.

Moreover, with regard to the administration, politically-aware residents use the Right to Information Act (RTI)[129] to inquire about certain issues. Following the opinion of the former Trade Union member, the bureaucrats therefore "are afraid that the citizen will ask for their rights with RTI" (180809AT). This technology is distinctive from those used by other groups, and it shows that residents realise and utilise the power of knowledge. As visible already in the example above, the behaviour towards state representatives is also different. The quoted resident tells how one day, when nobody listened to him in an office "I changed my tone and then he [the officer] asked: 'who are you?'. I introduced myself and told him that I can file an application through RTI." (180809AT). By asserting his rights rather than claiming help, his approach towards conducting the administration's conduct is therefore more confident, and appears to resemble behaviour of the *bare log* (see this part section 4.2.1). As he is educated, he does not accept different treatment from the state based on its discourse of uneducated 'slum' inhabitants, refusing the subject-position assigned to him in the interaction.

One educated resident also advises that when going to see state representatives, "people from here should go properly dressed, but they don't care, they go in slippers so the other person will not recognize [acknowledge] him. He will know that he comes from the huts [JJ Cluster]. (…) also

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[128] ITO in her account refers most probably to the office of the Slum and JJ Department, located near the ITO.
[129] See GoI 2005.

they go in a crowd and behind 10-20 people will come, they don't go individually" (171109RA).[130]

His view reflects on the one hand how deeply the state discourse on inadequate behaviour and discipline has sunken into his (self-)assessment. On the other hand, it shows a slight tendency to strategically use own behaviour change to induce different state practices. He does not, however, point as clearly to the aim of getting power over state representatives as the ex-Trade Unionist with regard to the scavengers in the statement quoted above.

To sum up, this group seems to have more technologies of government available; also, the available technologies are combined strategically with the refusal of dominant discourses, open resistance to assigned subject-positions even vis-à-vis high ranking state representatives, and the power of knowledge, so that the overall governing practices are more powerful than those of other residents.

6.2 Governing the JJ residents

Turning to the state representatives, it is clear from earlier sections that governing waste water mainly means for them to change inhabitants' interaction with waste water. The following section discusses how this is conveyed to residents in everyday interactions.

6.2.1 Scavengers' cleaning practices

In section 1.3 of this part, scavengers' duties in the settlement were presented. We have also seen in section 3.1 of this part that they carry out those duties in different ways, and not always to the satisfaction of residents. Scavengers are the lowest rank of state representatives present in the JJ Cluster, and those with the most frequent interaction with inhabitants. Their cleaning practices are thus an important technology of government in order to direct residents' waste-water-related conduct. Notably, scavengers can leave from the spot, and decide not to clean a certain area on a particular day, or for several days in a row. This happens, if scavengers feel disrespected through verbal abuses, complaints which are considered unjustified, or if residents throw solid waste in sections of the drain just cleaned, or interfere with scavengers' cleaning. In extremer cases scavengers can punish residents by taking out the garbage mounds from the drains and depositing them right in front of their houses. As Foucault (2007: 6) points out, the punishment of one actor then implies at the same time the disciplining of others who will consider their own behaviour in the light of the consequences they witnessed. The scavengers' behaviour therefore conveys the message to residents that state services do not come without

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[130] This interview was held in English. I clarify the use of certain words here.

conditions: they are executed only if solid waste is disposed in the right way, and state representatives are deferred to. Moreover, they are not a kind of service inhabitants can rely on. By maintaining the instability of service provision, residents are taught that own efforts are expected, and the state is not ready to take over responsibility to 100%.

Scavengers also quarrel with residents frequently while on duty. They refuse inhabitants' requests to take the garbage out of the cluster on the day of cleaning the drain by asking if they should take it to their house, or by ordering inhabitants to take out the garbage themselves. One resident recalls how the scavenger refused with the words "I won't carry it on my head." (061109SH), referring to earlier forms of manual scavenging, banned today. In doing so, scavengers can be understood to negotiate their relationship with residents; they refuse being governed by them, and instead convey the impression that inhabitants are backward and discriminate against them on the basis of caste – a practice considered illegitimate by less traditional citizens. Residents' behaviour can thus be problematised, and the cleaning practices with all their pertaining interactions are used to assign inhabitants a social position below the scavenger. We have seen in section 6.1.1 of this part, however, how higher ranking officials did not support this assignment and instead put the scavengers down in front of residents. Governing practices of the state remain thus heterogeneous even at this level. We will therefore see how technologies by the Sanitary Guide offer power over the scavenger to residents as reward for their collaboration.

6.2.2 The Sanitary Guide's round

A second technology of government is the daily round of the Sanitary Guide in his area, on which he is sometimes accompanied by the Sanitary Inspector as well.[131] While on round, he is supposed to control his staff; yet, he also checks residents' way of disposing solid waste. The Sanitary Inspector is authorised to impose a fine if someone litters the public space. Both actors thus apparently exercise tight control to discipline people's relationship towards solid waste. However, the Inspector may decide not to because "they are poor and struggle to eat" (061109HA-SI). He shows compassion and thus attempts to have inhabitants indebted to him. This display of a mixture of strictness and liberality can be read as an attempt to counter inhabitants' perceived recalcitrance: Through gaining their sympathy, the staff on the ground hopes to make people more open to influence.

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[131] Oldenburg (1978: 82-94) describes the importance of the round that Municipal Councillors undertake in their wards for processes of governance. In the investigated case, however, the Councillor never took such a round, a fact which was criticised by several respondents.

With the same intention, the Sanitary Guide shows people that enhancing their relationship with him results in gaining leverage over the scavengers. A woman from the JJ Cluster recounts:

> "One day the scavenger and *daroga* [Sanitary Guide] passed by and I got the chance to talk. I said: 'I have a problem I want to talk'. Then they said: 'Listen first, our trolley can't pass because of your toilet', so I said: 'Ok I can break it and make it narrower but you should also listen'. So he said: 'What is the problem?' I said: 'The new scavenger is not listening and there are so many quarrels' and he said: 'Yes I got so many complaints, I will try to make him understand'." (191109CH).

By agreeing to listen to the woman only after she promised cooperation, he not only achieves to get her to arrange her toilet in such a way that work for his staff gets easier; he also shows her that accommodating his needs will help her get power over the scavenger. He therefore confers the responsibility for the quality of service delivery onto her behaviour.

6.2.3 The Member of Legislative Assembly's electoral campaign

The MLA governs JJ Cluster residents' behaviour mainly in the context of his electoral campaign, as his interest is more on disciplining their voting behaviour than on controlling waste disposal activities. Since his family members are all into politics, they have intelligently divided roles in a fashion of 'good cop, bad cop'. His wife, brother and son are feared in the colony for threatening people with severe punishment in case they do not vote for them. One woman recounts:

> "(...) [The MLA] himself is not so aggressive, but his brother, son, and wife are. During the election campaign for the last MC [Municipal Councillor] elections the wife threatened that if my son does not win I will pour kerosene on the *jhuggis* and set them on fire." (300709PO)

This kind of behaviour ought to have a disciplining effect on the residents that are perceived as unreliable in their voting behaviour.

At the same time, the MLA himself is considered by many residents as helpful and cooperative. His assistance, however, is well measured in that upgrading of the JJ Cluster takes place in general shortly before the elections, and never to a point where the settlement would be independent of his support. Also, he promises protection from eviction. As the threat of this punitive action from the higher levels of government is always present, this has a disciplining effect on people's voting behaviour while at the same time presenting the MLA as independent from the punishing actors and sympathetic to JJ inhabitants.

Moreover, this behaviour conveys to the residents that they have the power to get better infrastructure and secure their tenure – they just need to cast the right vote. Solutions to solid waste-related problems, too, the MLA suggests, depend on residents' behaviour. During a

problem ranking exercise with an inhabitant she recalls: "People went to (…) [the MLA] and he said cleanliness is in your hand, you can use a dustbin or give it [the garbage] to the scavenger." (191109CH). Residents' agency is thus highlighted by him, as he intends to reduce voters' complaints.

6.2.4 Visits to offices

Finally, inhabitants encounter state representatives' technologies of government in their interactions in offices. Section 4.2.1 of this part already elaborated on experiences residents make here, and the way these structure their image of the state as well as their understanding of meanings of citizenship. These governing interactions are even more pronounced where direct contact is refused. Residents tell how on account of their illiteracy or lack of experience with the administrative system, officials request them to seek help through the *pradhan*. The same holds true for the politician: "Only people with a *pradhan* can go and see the MLA" (241008JA), one interviewee feels. This shows, as I have discussed in this part, section 4.2.2, how state-citizen relationships are built upon certain criteria – in this case: education – the citizens have to fulfil as a precondition for interaction. If people want assistance from the state for the solution of their waste water-related problems they first have to get some education and become 'proper' citizens. While this strategy directly discourages illiterate residents from complaining at offices, and conveys the message that state services are not for everyone to avail, it indirectly governs their choices for or against formal education, too.

7 Preliminary conclusions

What can be learned from the presented discursive as well as non-discursive governing practices for the analysis of the waste waterscape? When reflecting on the above sections we can draw together visibilities, knowledge, subjectivities, and technologies of government to understand how they work in governing residents and state representatives in their relationship with waste water. How do these dimensions reinforce each other to form a regime of practices?

7.1 Governing practices of JJ residents: Differential considerations

On the side of the residents the picture is a differential one. The waste waterscape is highly problematic for large parts. Yet, contestation starts with visibilities, where waste water stagnation, and overflowing drains are a problem for those living in lower lying areas, while those on higher grounds do not problematise waste water much. Whatever problems

interviewees mention, most illiterate inhabitants see them to be caused by the state's negligence, especially visible in what they describe as a careless attitude of scavengers. The local elite, in contrast, consider them to be mainly the responsibility of residents themselves; only few see waste water as a 'political problem' for which politicians' neglect was to be blamed. As all JJ Cluster residents have experienced state representatives to be deeply biased against the poor and uneducated accessing state services is seen as difficult. These interactions have contributed to people's subjectivities as citizens. Especially Naribat show an understanding of their position as separate from other sections of society, and trace this back to their lack of education and poverty. Other communities and the local elite, in contrast, feel entitled to services. Especially some of the educated inhabitants understand their role as one of 'social workers' or 'freedom fighters' and want to struggle for service provision. Despite their attempts at resistance and at governing the local state representatives, it has to be noted that governing practices of JJ residents are not very successful, and never lead to long-term solutions. Social positions remain fragile and further upgrading of the cluster seems difficult to achieve.

Under these conditions, residents have developed four different strategies. Those in the lowest position, the Naribat, have mainly resigned and accepted that equal standards of living in the city will not be achieved. As technologies of government such as complaints and votes are little successful in their case, the scavengers' conduct is partly disciplined through physical and verbal violence. Those in a middle position, namely those belonging to other communities but lacking formal education, use both, complaints and voting behaviour in their attempt to govern state representatives at local level. They resist ascriptions of dirtiness. The part of the local elite that continues to struggle for services uses complaints and voting, too; they forcefully resist ascriptions of dirtiness as well as of lack of education, and combine these technologies with the power of knowledge they attain through RTI application. From a Foucauldian perspective, both, the complaint as well as the election process can be read as a technology of performance where those who do not perform as expected can rightly be punished by being scolded, transferred or by losing their posts. Claiming the subject-position of the governor at least partially the two latter groups convey the message to state representatives that they deserve better living conditions than they actually have, or more strongly even, that a cleaner environment is their right. They are, with their moral and hygienic values, and with the education and economic independence they have got, ready for integration into mainstream society. Finally, some members of the local elite chose the path of individual improvement by moving out of the settlement. This choice shows how powerful dominant discourses of agency are, and how deep

the idea of the 'slum' as a space without future has sunk into residents' perceptions. Accepting the subject-position of the governed, they react to the arrangement of the waste waterscape by opting to leave.

It is apparent from the above sections that resistance of residents plays out most powerfully at the level of knowledge: truths that state representatives form about waste water problems, but more importantly about 'slum' inhabitants in general are hotly contested. Least successful seem to be those who are already marginalised within the JJ Cluster: the Naribat community.

7.2 Coupling disciplinary and agency-oriented regimes of practices to govern the 'slum' residents

On the side of the state, we can recapitulate how representatives govern waste water more through a lense of cleanliness/dirt, where waste water concerns cannot be distinguished clearly from solid waste-related and infrastructure-related practices. Moreover, JJ Cluster inhabitants' way of relating to urban space is the centre of a field of visibility that problematises high density built-up. The overflow problem is absent from accounts. The section on knowledge has shown how statements discursively construct the impossibility of the state to solve any waste water and cleanliness issue. As the responsibility is conferred to residents, the message towards inhabitants is that they have to change to improve the situation. Governing the JJ Cluster therefore means to limit state efforts to the minimum and maintain uncertainty in order to convey to residents that claims are not justified and cannot be responded to and that residents have to make own efforts. Inhabitants of JJ Clusters are therefore obliged to directly handle waste water, or 'dirty' water, which further degrades their social position (see part IV, section 1). Discourses on their perceived deficiencies – their lack of discipline, of education, and of respect for the power of the state – are instrumental to instil acceptance for this message in residents. In direct interaction, residents are punished for their supposedly deviant behaviour and efforts to educate them are undertaken by street-level staff.

Using a Foucauldian grid of analysis, it can be summed up that governing JJ inhabitants is achieved through practices pertaining to logics of a juridical and disciplinary regime at the same time as through a strong focus on agency. An interesting coupling of technologies takes place: practices suggest that residents have the responsibility to become more disciplined in order to resolve waste water-related problems. State representatives therefore seem to understand their task not so much in terms of actively disciplining the JJ population; rather, governing for them means to make inhabitants aware of the fact that they have to discipline themselves if they want to be recognised and treated as full fledged citizens. To conclude, 'slum' residents, in the eyes of

state representatives, cannot remain the way they are if they want to be integrated into society. Only once they change, once they acquire education (and with it a distaste for living in dense settlements and the discipline to practice birth control), stop throwing garbage anywhere but in dustbins, and accept the subject-position of the governed vis-à-vis state representatives they will find their legitimate space in the urban social fabric and in the city.

VII CASE STUDY 2: THE UNAUTHORISED COLONY

Following the analysis in part VI which focussed on everyday practices of waste water governance in a JJ Cluster, this part VII is dedicated to the Unauthorised Colony. The goal here is to answer the research question ***"What are the practices of everyday waste water governance found in informal settlements?"*** for this type of informal settlements.[132] In a parallel fashion to the previous chapter, I will first analyse the production of the settlement that has taken place till date. I then turn to the socio-economic composition as well as organisation of the block chosen for research. Here, too, existing waste waterscapes are contested, and governing waste water is part of day-to-day practices of residents as well as state representatives in the wards. Sections 3-6 study these everyday practices in depth. The ways both groups see waste water will be discussed and their respective knowledge will be presented. Then the ways interactions with state representatives contribute to residents' subjectivities as citizens will be investigated, focussing on their effect on inhabitants' governing practices in the waste waterscape. Finally, the use of technologies of government by inhabitants as well as street-level bureaucrats and politicians will be analysed. Concluding remarks identify residents' three main strategies in the waste water governance and show how two regimes of practices interlock on the side of state representatives.

1 Producing the Unauthorised Colony environment

The waste waterscape in the chosen Unauthorised Colony (UAC) is a produced space. The following sections elaborate on how citizens and the state have interacted with the urban space of the UAC, built its infrastructure, and produced and discharged waste water so far in this production process. In an even more impressive manner than in the JJC, the UAC proves to be the outcome of citizens' initiatives against a background of lack of state activity. Only very recently, state interventions have started shaping the colony to a significant degree.

1.1 Settling on the land

The investigated Unauthorised Colony (UAC) is situated in the Northern part of the Transyamuna area, i.e. East of the river Yamuna. The area is marked as a green belt in the Master Plan 2021,

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[132] Beginning of 2011, the research area has been found to be eligible for regularisation (GNCTD Department of Urban Development 2011a). The next years will show the consequences of this decision for the waste water governance as it is presented in this chapter.

and is still registered as agricultural land, which is the reason for its status as unauthorised. While people have bought their plots from the former Gujjar owners, most of them therefore hold only an affidavit to prove their tenure rights. The UAC is divided in blocks, of which one, the C-Block, has been chosen for the study.[133] The land of this block was first used for brick making after Independence, resulting in a ground level well below adjacent areas. Therefore, it is also known as "*gaddhe walli gali*" (261109AS) – the pit street. This difference made land here especially cheap when the farmers decided to sell it off: while in D-Block 1 *gaj* (1 yard, ca. 1 m²) would cost 100 Rs in the early 1980s, it was available for only 40-50 Rs in C-Block. On top of that, prices in the UAC were less than 10% of those paid for land in authorised colonies: while in the beginning of the 1990s, 1 *gaj* had risen to 100 Rs in C-Block, the same area in the nearby authorised colony was already worth 1,500 Rs. Naturally, the area attracted economically weaker sections, again reflecting a process of appropriation of the valueless in urban space (Sakdapolrak 2010: 151).

The unauthorised colony was set up in the middle of the 1980s by Muslims coming mainly from Western Uttar Pradesh. Settlers at that time "didn't even have a clue what authorised and unauthorised meant" (070109MO), so that their lack of knowledge about the land market of the capital was exploited by the original land owners. The earliest resident we located had moved here in 1982. Interview partners recollected how at that time, individual houses started to come up in the middle of a jungle. Today, C-Block has around 4000 inhabitants in 789 housholds[134] (101208MO). The lay-out is shown in map 7. The population density is around 160,000/km², and thus much lower than in the JJ Cluster; yet, it is still about ten times the average density in Delhi. All property prices have risen tremendously in the last decades: End of December 2009, the price of 1 *gaj* inside C-block was of 25,000 Rs. Nevertheless, property value is still significantly lower than in formal areas, and there is no possibility to get loans for purchase of property here since "this is termed a 'negative area' by the banks because it is not regularised" (040109MO). Stigmatisation of UACs within the city thus carries on.

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[133] In the remainder of this part, 'colony' and 'block' are used synonymously.

[134] Through own mapping, 579 houses were identified in C-Block; yet, different floors were partly inhabited by different households, so that numbers of this respondent, member of a Residents' Welfare Association, will be used for calculation. The given numbers indicate that there are five members per household, the same as has been assumed in the JJ Cluster.

Infrastructure

⊞ Doctor

■ General Store

■ Other Services

■ Construction Company

⊙ Street lamp

⊙ Street lamp (Out of Order)

House with Number of Floors

☐ 1

☐ 2

☐ 3

☐ 4

☐ Abandoned House

▨ Ground Floor below Street Level

☐ Open Space

☐ Surrounding Built-up Area

☐ Waste Land

Source: Existing Lay-out Plan; Google Earth, Own Field Mapping

Draft: Anna Zimmer
Cartography: Department of Geography, University of Bonn

Map 7: The lay-out of the Unauthorised Colony. In contrast to the JJ Cluster it is visible here that settling has not happened in a spontaneous way, but plots were demarcated and sold by former land owners.

1.2 Producing waste water, building infrastructure

Only street No. 10 is connected to public water pipes. In other streets, individual boreholes exist which inhabitants use for all but drinking water. Drinking water is in these cases collected from the nearest pipes in B-Block or on the main road towards the East. In daily activity schedules, inhabitants revealed to use a very small amount of water, i.e. between 21.8 and 45.9 l per day and person. If 80% of these volumes are assumed to be discharged as waste water, 17.4-36.7 l of waste water per person or between 87,200 and 183,600 l for the colony are generated per day. These numbers point again to a very difficult water supply situation.
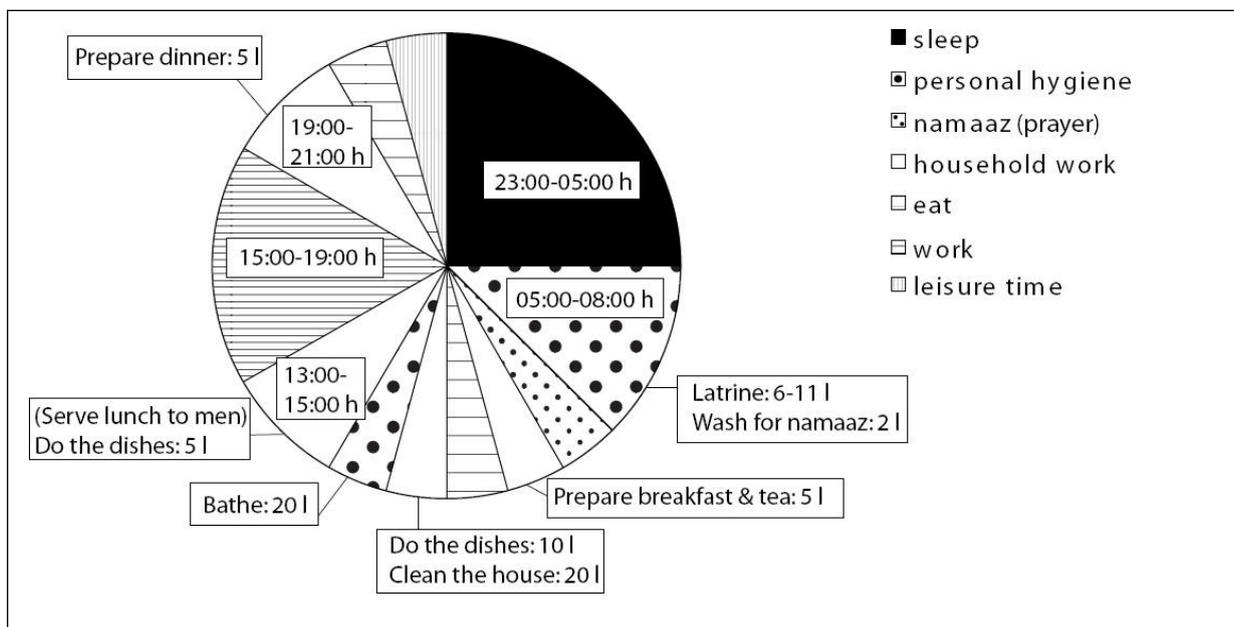
Fig. 14: Daily activity schedule of a 19-year-old woman in street No. 14 (020209RE). (Draft: A. Zimmer)

Figure 15 shows the example of one family where the parents live with four sons and three daughters between nine and 19 years of age. The interview partner was the 19-year-old daughter, who does embroidery at home to earn money. Again, volumes of water used for personal hygiene count individually, while other tasks reflect the water use of all family members together. The women wash clothes on Sunday in a semi-automatic washing machine. In five washings, which are necessary to wash everybody's clothes, 150 l of water are used in total.

With regard to black water, people used to go for open defecation, and waste water was collected in cesspools in the early days of the settlement. Today, all except a handful of houses have their own pit latrines. The remaining houses have *kaccha* latrines, i.e. dry latrines that have to be emptied manually on a regular basis. If possible, their inhabitants use neighbours' or nearby relatives' pit latrines. Pit latrines are built in such a way that the pits are filled with water

at the time of construction. With every use, inhabitants flush and some of the water exits into the storm water drain in front of the houses to which the pits are connected. Whereas residents praise the practicality of this system because pits hardly ever have to be emptied or cleaned, it leads to black water flowing into the open drains. The alternative, getting the septic tank emptied by a private service, is used by very few as it is costly.[135]

Due to the low level of the former brick field, drainage has been a huge issue from the beginning. In the course of the last 30 years, therefore, streets have been raised between six and an incredible 20 feet through collective and individual efforts. In 1999, the first street, No. 10, was raised and plastered with bricks through a neighbourhood initiative, following which other streets replicated that undertaking. Money for these projects was pooled in on the basis of the width of plots, and residents paid around 100 Rs per running foot. In total, 85,000 Rs were spent on street No. 10. In streets where residents were unable or unwilling to invest so much, soil or sand was purchased to raise parts of the street. In 1990, the school children had to contribute 300 Rs for a trolley of soil each when street No. 20 was raised. After more than a decade of private investment, the state took over: Around 2005, street No. 20 received a concrete/cement cover through government funds. In 2007, street No. 15 and 18 received a brick cover. In October 2008, the first street inside C-Block, No. 13, was covered with cement/concrete, followed by No. 11, 12, and 16. During upgrading, streets were further raised. Therefore, inhabitants had to gradually adjust the levels of their houses, too. The oldest resident recounts having

Photo 14: The groundfloor below street level. The house of Abdul Wahid got buried around one meter deep when the street was raised. *(Photo: A. Zimmer, December 14, 2008; the name of the colony marked below the street number, has been made invisible)*

reconstructed the house five times since 1982.

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[135] Emptying costs 1200 Rs on average.
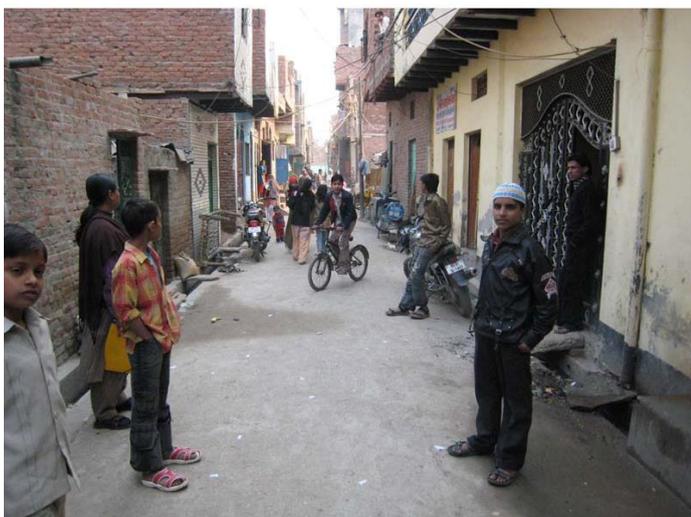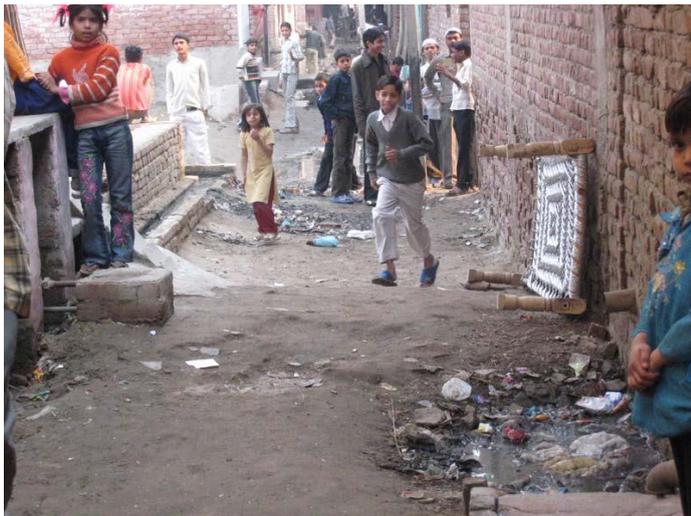
Photo 15, 16 & 17: The three types of streets found in the Unauthorised Colony. While *kaccha* streets are very uneven, brick and concrete/cement streets are levelled. In the *kaccha* street, a cesspool is visible in the foreground. *(Photos: A. Zimmer, December 26, 2008; January 04, 2009; December 26, 2008)*

And construction costs are skyrocketing in Delhi: As one builder explains, labour as well as material costs have doubled or tripled in the last years. If raising the house cost 55,000 Rs in 2004, in early 2009 costs had gone up to 1,00,000 Rs. Those unable to afford these huge sums had to revert to piece-meal solutions: Many raised window and doors or installed kitchen and latrines in top floors to be able to raise the waste water pipes leading into the drains. Some raised the septic tank only, which costs 150 Rs for a 3x4 feet tank. If people could not afford even these measures, houses and septic tanks got literally buried up to one or two floors underground (see Photo 14). Septic tanks then are emptied by motor pumps discharging the waste water in the open drains; even poorer residents have to empty it by hand.

Big differences exist within C-Block in terms of infrastructure today (see Photos 15-17). Three different types of streets exist: Today, *kaccha* streets are No. 17 and 19, brick streets No. 10, 14 and 15, and *pakka* streets No. 11, 12, 13, 16, and 20 (see Map 8).
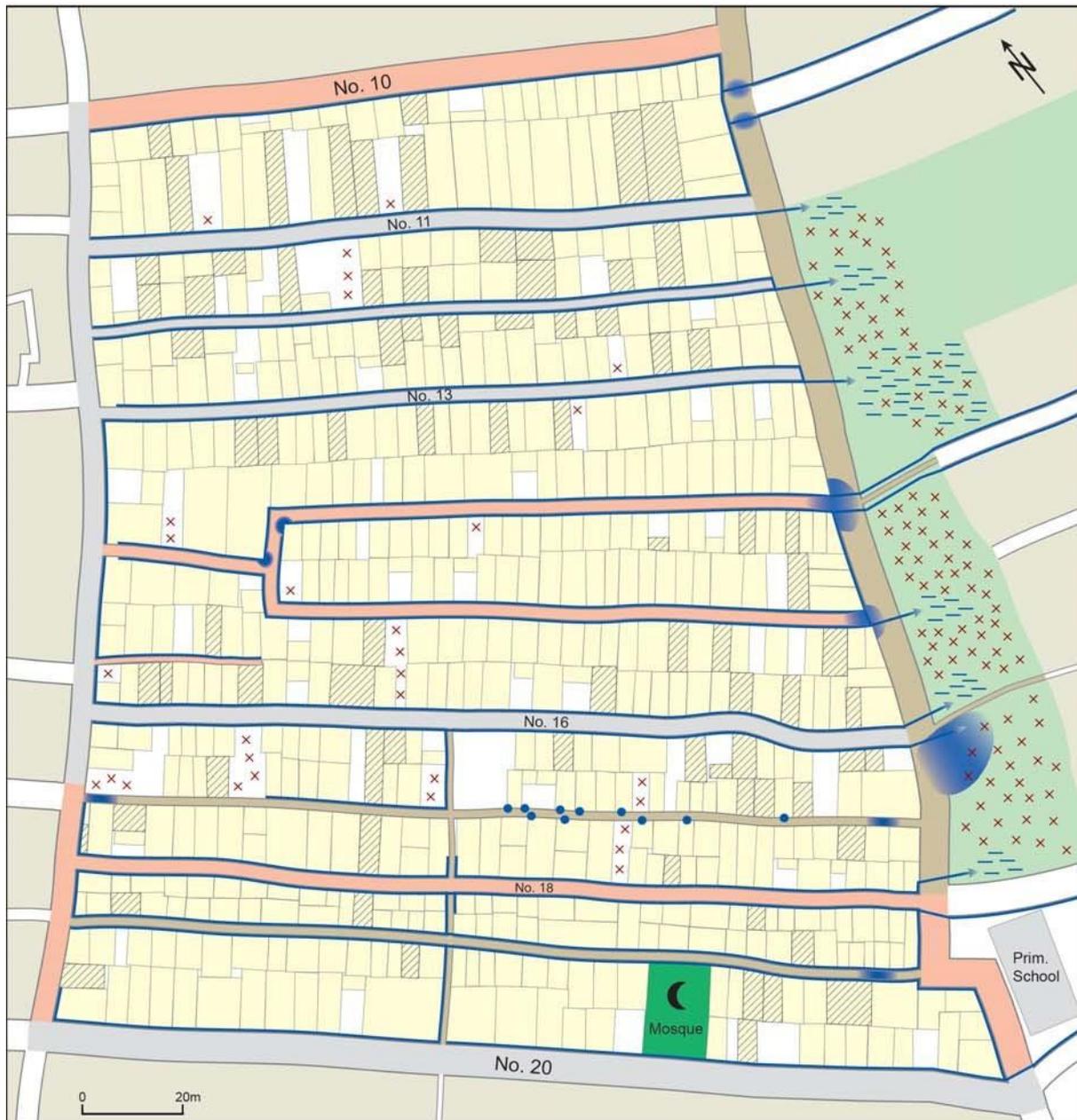
Street Surface

	Mud Street *(kaccha)*
	Brick Street
	Concrete/Cement Street *(pakka)*

Waste Water Infrastructure

→ Drain

• Cess Pool

	Built-up Area
	Open Space
	Surrounding Built-up Area
	Waste Land

Waste Water-related Problems

	Waste Water Stagnation
× ×	Solid Waste Disposal
− =	Waste Water Swamp

Source: Existing Lay-out Plan; Google Earth, Own Field Mapping

Draft: Anna Zimmer
Cartography: Department of Geography, University of Bonn

Map 8: Waste water infrastructure and related problems in the Unauthorised Colony

While *kaccha* streets are very uneven, brick and *pakka* streets have an even level. According to the material used for making the street, the open drains vary: in the mud streets, only some of

the families have built drains out of bricks or cement in front of their dwellings. Some houses have cess pools, and in other stretches waste water flows in the middle of the street where it is lowest. In the brick streets, there are brick drains, and in the concrete/cement streets the drains are of the same material as streets, too. These open drains are used for all waste water discharge. From here, waste water is evacuated from the colony towards the East through six drains which reach the major drain along the road, and finally join the open drain called Gokalpur Escape (see map 1). Yet, the drains of six streets end abruptly at the edge of an L-shaped open space on the Eastern edge of C-Block, which is therefore swampy. Map 8 shows the waste water infrastructure made of different materials that exists to date. It also indicates areas of waste water stagnation during the rainy season 2009, as well as locations of solid waste disposal. Both will be discussed in detail below.

The open space towards the East is said to be all that is left from a former irrigation canal that was gradually filled with soil and solid waste. Rumours have it that the farmers got governmental compensation for the plot but at the same time sold it to someone, so that a legal case is pending and inhibiting further development.[136] Because no dustbins exist inside the colony, and no *dalao*[137] is constructed in the surrounding areas, this open space is currently also used as a dumping ground. Electricity exists in all houses and is metered. Street lamps are partly functional.

1.3 Securing waste water drainage

In order to maintain drains and secure waste water drainage, private scavengers were hired by the vast majority of households before 2008. These scavengers were paid between 20 and 50 Rs/month per house, adding up to a minimum expenditure of 240 Rs, and maximum of 600 Rs/year for each household. Today, open drains are in principle maintained through scavengers of the Department of Environment Management Services of MCD. The provision of staff changed significantly over the time of my fieldwork. At the beginning, two permanent scavengers and 20 daily wage scavengers had been allocated for the whole ward and one bullock cart was available for removal of solid waste (150109MU-MATS; 160109SK-G). The posts of Senior Sanitary Inspector and Sanitary Guide were vacant; instead one Assistant Sanitary Inspector and a MATS were appointed for overseeing duties. During that time, the MC hired private scavengers in

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[136] Parts of this area are also used to tie buffaloes during the day, store construction material temporarily, or house merry-go-rounds on occasions like Eid. Most residents would like to see this area used for a dispensary and a community hall.

[137] *Dalaos* are public solid waste collection points.

times of crisis. When I came back after eight months, the number of public staff had increased to 14 permanent, 87 daily wage, and 14 substitute scavengers and one cart driver (041209SU-ASI). While earlier, one scavenger had to clean the drains for 2272 persons on average, this figure had thus come done to 434. At the same time, the ward had received one more bullock cart, one tractor, three cycle rikshaws, and one auto to remove silt and garbage. The reason for this change will be discussed in detail in later sections. Yet, this number of scavengers is still too small to maintain the beat system. Instead, scavengers are sent to particular streets on complaints, so that rhythms of cleaning are a result of ongoing negotiation processes between citizens and their Municipal Councillor. For the three types of streets in C-Block, the rhythms of cleaning are different and highly dynamic.

In *kaccha* streets, inhabitants told how the public scavengers exclusively came for festivals, or in the rainy season, but only after being called. They came around twice a year. In the brick streets, the picture was less clear: While at the end of 2008 two interviewees stated that the scavengers never came, others noted at that time already that they had started coming in the last months. They did not come daily though, but rather at intervals of two weeks to two months. Also, festivals like Bakreid[138] brought the scavengers to these streets, as well as occasions in which politicians were visiting the area. In the *pakka* streets, the set-up was similar to the brick streets. While here, too, some residents stated that the scavengers had never come, others noted that scavengers had started coming in January and November 2009 respectively. Intervals of cleaning, according to the inhabitants, varied between 10 days and three months.

Due to this situation, inhabitants of *kaccha* streets clean by themselves on a regular basis, as scavengers do not come. In brick and *pakka* streets, people adapt their cleaning rhythm to the public scavenger. Their own cleaning is therefore limited to the times "in between" scavengers' visits (111208SA). Residents consider it necessary to clean the drains when they "don't feel good about it" (131109VA), which happens around once a week, or once in 15 days. Especially in moments of crisis when the drains are full or blocked and in the rainy season own cleaning is required more often – above all by those living in low houses, most affected by waste water stagnation (see this part, section 3.1).

The above account is suggestive of a highly problematic and dynamic waste waterscape. Due to the low topographic situation of the UAC, the current built environment can in fact be interpreted as the result of an ongoing struggle to achieve waste water drainage. Presenting the

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[138] Bakreid celebrates the bond between God and Abraham with the sacrifice of goats.

production of the UAC environment has therefore already allowed a number of glimpses into residents' and state governing practices in the past. The following sections will analyse these practices in a systematic way, recurring to the four dimensions of governing: ways of seeing and knowing, ways of forming subjectivities, and using technologies of government. Unlike in the JJC, the focus will not only be on cleaning of drains and removal of solid waste; the provision of the colony with infrastructure and public scavengers appear to be major objects of government, too. Yet, to better understand internal heterogeneity, the next section first presents the spatial and social structure of the area.

2 Spatial and social heterogeneity and organisation of the colony

Despite the exclusively Muslim population, the block is not socially homogeneous. According to Jervis Read (2010: 124), social differentiation in Indian cities is expressed through the notion of *mahaul*, maybe best translated as social environment.

> "(…)[S]omeone's assessment of the *mahaul* of a place is often an idiom for the evaluation of potential relationships with the people there. An assessment of the *mahaul* forms the basis for assumptions about identity and comment about status and reputation."

As such, statements about the *mahaul* of the UAC convey an impression of social lines of division. Interestingly, it was criticised exclusively by general caste inhabitants, and particularly, by women. Similar observations have been made in a heterogeneous resettlement colony in East Delhi where members of the Valmiki[139] caste were the only residents not much concerned about the *mahaul* (Jervis Read 2010: 149)*. The first divide to look at is therefore the caste.

2.1 Caste: A majority of Other Backward Castes

The overwhelming majority of inhabitants belong to the Other Backward Castes (OBC) category, with Saefee (carpenter) caste said to be the majority. Other prominent castes are Ansari (weavers), Mallik (working with scrap)[140] and Teli (oil pressers). While Ansari and Teli have mostly changed their occupations (with the exception of two-three weavers), carpenters and scrap businesses are still prominent in the colony. Single interviewees from Pathan, Mughal, Sheikh, and Sayyad castes, the highest castes amongst Uttar Pradesh Muslims (GoI Prime Minister's High Level Committee 2006: 192), live in all types of streets. Most of them are eager to distance themselves from their OBC neighbours. A resident complains:

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[139] To remember, Valmiki is the designation of the caste which was traditionally engaged in scavenging of human excreta.
[140] Traditionally, Mallik were the warrior community, often compared to the Hindu Rajpuths.

> "The neighbours are all Ansari, tailor, craftsmen, we are Moghul Pathan, we
> are alone in this street, we cannot digest this abusive language and the
> quarrels. (…) We are planning to sell the house because of this environment
> [*mahaul*]. In all the streets there are the same problems because they are
> lower caste people, and if they have earned some money then they behave
> like this." (281208AN)

Another respondent criticises: "There are frequent quarrels and on every occasion people will abuse." (251109SA). Language is used as a demarcation of caste, and abuses and lack of politeness are associated with lower strata of society. Especially the development of children is seen as endangered by the *mahaul*: A Pathan woman who recently shifted to the colony explains how "The kids have started to speak very badly here, before they were always so polite, saying madam etc." (171208SH). In general, an impression of difference between them and neighbours is conveyed by general caste residents. They see themselves as more educated and more concerned about cleanliness than others. Also, they feel oddly out of place and feel the need to justify in interviews why they live in the UAC in the first place.

As a consequence, especially general caste women maintain distance. A Sayyad woman states: "I don't like the social environment [*mahaul*] here so I don't mix and go anywhere." (131109TE). The quoted Pathan woman explains how she does not let her children play outside. Women are also proud to wear the *burqa*, and explain that it is constitutive of their identity as Muslim: "In Islam the biggest thing is *purdah*,[141] those who don't follow the *purdah* are no Muslims." (231208RE). Shielding themselves from the outside world and the bad *mahaul* aims at maintaining ritual cleanliness, as the statement of a Pathan interviewee shows: "I can clean as much as I want inside; as soon as I go outside I feel dirty." (251208AK). The closeness of caste divides and ascriptions of cleanliness and purity in the Indian context, discussed in part IV, section 1, show clearly here.[142]

Because of its dividing character, caste ascriptions in the UAC are problematic and not easily disclosed. One Saefee resident explains how "Those who are of lower caste mostly shut up or change their names. Saefee and Teli are medium so they don't mind telling" (031109SH). Those most confident talking about their caste were therefore the general caste members, as seen above. Several interviewees also indicated that there are no Scheduled Castes (SC) in the Muslim community. In fact, the legal status of Muslims whose occupations are considered ritually

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[141] Literally, the curtain. *Purdah* refers to the way of life were women avoid showing in public, and more specifically, avoid showing their hair or faces to men.

[142] The fact that women are most concerned about cleanliness and the separation of inside and outside, both strongly linked to notions of the *mahaul* as will be discussed shortly, is explained by Chakrabarty (1991: 20) with the fact that they are themselves 'outsiders' who enter the family and have to prove their "auspicious qualitites".

impure is not that of SC Hindus – they are grouped together with other castes of low status into the Other Backward Caste category (GoI Prime Minister's High Level Committee 2006: 193). However, the way interviewees insisted on this fact did not point to their feelings of disadvantage that stems from the inability to access SC reservations. Rather, the pride with which this statement was made might be understood as an attempt to create unity within the group; it also expresses Islam's egalitarian nature that stands in contrast to the caste system, and the rejection of the practice of untouchability. Moreover, this reflects observations of Fuller (1996: 19) that Indian Muslims partly deny having a caste at all as a means of differentiating themselves from Hindus.

2.2 Socio-economic differences: Occupation, education, and property

For apparent reasons, caste and class partly overlap in the Indian context.[143] The interviewed general caste families thus worked in the following jobs: One Sheikh man had worked in Saudi Arabia earlier and recently opened an Air Conditioner sales business; another one is employed by the police while his wife is a government teacher. A Sayyad man owns a printing press. A Chauhan (Rajputh) resident deals in property and runs a construction business. These residents thus can be counted into the middle-class. One Pathan man, however, was unemployed, showing that the overlap of both categories is not neat.

Micro-level social division of residential areas in Delhi along lines of income, caste and origin is not exceptional (Dupont 2004). Although general caste residents live in all kinds of streets, an exemplary social survey in the three types (No. 17, No. 10, No. 11) indicates that different occupational groups cluster in the *kaccha*, brick and *pakka* streets (the full list is available in the appendices IV.2). Daily wage construction labourers and tailors mostly live in the *kaccha* streets. A cycle rikshaw, a three-wheeler, and an auto rikshaw driver live here, too. A large number of carpenters, but also a few black smiths and metal scrap businessmen live in the brick street. Others have a helmet business, a TV cable business, a printing press; one resident works in a plastics factory. The *pakka* street, in contrast, is inhabited mainly by business people such as those handling metal scrap, black smiths, an owner of a vehicle workshop, but also a cluster of garment industry-related businesses reminding of the Ansari's background in weaving, such as an exporter of jackets, a manufacturer of leather jackets, purses and handbags, and a thread trader are found here. While these are still to be characterised as small businessmen, the aforementioned property dealer, teacher and policeman are residents here, as well. There is

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[143] Until today, half of India's poor belong to the Scheduled Caste or Scheduled Tribes category (Development Channel 2011) who form about 25% of the Indian population (GoI Ministry of Home Affairs 2010/2011).

thus a continuum from labour class members, such as daily wagers and craftsmen to small businessmen and finally a very small number of middle class residents. Whereas daily wagers earn around 150 Rs per day, the property dealer disclosed that his monthly income was around 6,000 Rs.[144]

Photo 18: Women and girls do embroidery works on order. *(Photo: A. Zimmer, January 12, 2009)*

Other than the aforementioned teacher, none of the interviewed women was employed in a formal job. Yet, several women earn money through embroidery of *salwar kameez* and *dupattas*[145] from home (see Photo 18). The orders for these come through middlemen, and women have little information about where, and for how much money the clothes are finally sold. One woman indicated that orders come from Chandni Chowk, Old Delhi's major garment hub. The women earn between 30 and 150 Rs per finished suit (dress including *dupatta*), depending on how intricate the embroidery work is.

These occupational differences hint at highly unequal education levels, too. Nevertheless, the majority of residents, including women, are at least semi-literate. Many women had learned to read the Koran, and it was repeatedly stated that girls find a groom much more easily if they are able to do so. Even though daily wagers partly are illiterate, children are in almost all cases sent to some form of school: private classes, madrasas, government schools, and very rarely, public schools. For most girls, however, education ends at least after standard 10, as parents are unwilling to send older girls outside, or relatives resist their intentions to do so. A small number

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[144] In an earlier interview, he had, however, mentioned that "My son will be doing business, because in MBa you can hardly earn 50.000 Rs [per month] and this is not enough to run a whole house." (190109BA) His actual income might thus be much higher.

[145] *Salwar kameez* is the name for one of the traditional Indian female dresses, a loose pair of trousers and a shirt until the knee. The *dupatta* is the scarf that belongs to that outfit.

of girls pursue higher studies through correspondence courses. Several graduates and a few post graduates live in the colony as well.

Besides occupation, a further indicator for economic differences is the status of houses. A small number of people have not built houses on the whole area of their plot, living in single-room dwellings with a large courtyard in front. The majority, however, have built up the whole plot – but differences exist in terms of the level of the house (below or above street level), and the number of floors. Daily wage labourers and carpenters mostly live in single floor houses. On the other extreme stands the four- storey building of a family whose head works in Saudi Arabia. The height of houses that was visible in map 7 therefore indicates quite clearly the different financial situations of the residents. Moreover, houses that are below street level convey an unfavourable financial background, as better off neighbours reconstructed houses or ground floors in order to escape waste water problems (see this part, section 1.1). The social survey did not, however, indicate that low houses were correlated with certain occupations. This is probably due to the small size of the sample.

Finally, people living on rent and house owners are separated by a socio-economic divide. "People living in rented houses are being looked down upon by those who have their own houses", a woman notes (151208AK). Also, when confronted with the statement of neighbours that claimed to be poor, a man living on rent replies: "If you own your house, how can you be poor?" (190109SH2). Although a few people live on rent in every street, and the social survey did not indicate so clearly, inhabitants were of the opinion that there are more renters in the *kaccha* streets.

Despite a regional and religious homogeneity of the colony, divisions thus exist on the basis of caste and economic class. These divisions do not engender major conflicts, though. Unlike in the JJC, especially the caste has not proven to be indicative of differences in governing practices. However, a significant difference that showed was the one between politically active and inactive residents. The following section thus looks into forms of organisation.

2.3 Residents Welfare Associations and circles of communication

The Unauthorised Colony has a history of dynamic associations that struggle for development and infrastructure. The first was formed around 1985 in street No. 20 but had eleven members from different streets and blocks. It was active until 1995, and achieved the construction of the primary school on a part of the open space. One of its members recalls:

"From 1975-1995 the MLA and MC [elected bodies at State and Municipal level] were dissolved.[146] During these 20 years so many colonies came up and only the RWAs [Residents' Welfare Associations] looked after them." (190109BA)

Another RWA in B-Block, street No. 9 was equally engaged in struggling for facilities since before the delimitation of municipal wards. Its members wrote countless complaints about the status of the streets to the Chief Minister, the Lieutenant Governor, the Member of Parliament, and others and filed a case against the Municipal Corporation because of the lack of scavengers and sweepers. This issue will be dealt with in greater detail in section 6.1.3 of this part. Today, both RWAs are not as active as before. In street No. 20, the former member explains how "[n]ow the RWAs are not very important any more. Earlier we could meet Ministers and officials, but now since the Councillor is there and also resides here, she is taking care of the needs and meets with the officials." (190109BA). In street No. 9, the General Secretary describes how "[o]ur basic work was the sanitary system, so once (…) [the Councillor] was elected she tried to do it, so that (…) is also a reason why the RWAs are less active now." (160809NA). In both cases, the enhanced powers of the Municipal Councillor since the 74th Constitutional Amendment (see part I, section 2.1), and the fact that the politician is more active since the delimitation process seem to have lulled residents' initiatives. Yet, residents also find it difficult to find time for political activism.

While earlier organisations thus lost momentum, new associations have come up. These are mostly connected to the regularisation process that the Government of National Capital Territory of Delhi initiated in 2007 (see part V, section 2.3). As this process requires the active involvement of a RWA in the production of an accurate map, several organisations started to work. In street No. 10, an egg trader started an RWA in 2007 to assist in the mapping, and in order to fight for community facilities like a hall, a school, and a dispensary. He also founded a party and contested in the 2008 State elections. Yet, a former member of the RWA in street No. 20 opines that he "is not doing anything, he is only selling eggs" (190109BA). The General Secretary of the RWA in street No. 9 criticises that "in order to earn money people made RWAs" (160809NA). Both quotes regarding this new RWA certainly express competition between the associations and probably personal differences. At least the former statement, however, is upheld by a member of the street No. 10 association who is frustrated that it is not very active. According to him, the main problem lies in residents not finding time in their busy work schedules to get together.

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[146] In Delhi, the Municipal Corporation was superseded from 1987 to 1997 (Tawa Lama-Rewal 2007: 51).

Today, the most powerful association seems to be the one run from D-Block, gali No. 14. It is the only old association that is still highly active today. It started in the late 1980s, when pushing for the set-up of a school on the open space. Under the regularisation process, the registration of the group as RWA became necessary, so according to its General Secretary, this step was taken because "former committees didn't want the responsibility of the map" (011109AS). In 2007, the RWA got involved in sanitation-related issues, writing applications and finally filing a case in the High Court with the consent and support of the Municipal Councillor's husband. This issue will be dealt with in detail in section 6.1.3 of this part.

Despite this history, most respondents who are not active themselves are unaware of the existence of RWAs. "There is no RWA here, no *pradhan*, or other local leader." (101208VA), a neighbour states, and others react similarly when questioned about the associations. They have never approached them for assistance. A communication gap therefore seems to exist between active residents and others; maybe between those who have time to meet and discuss and those who do not. Most importantly, no interviewee of a *kaccha* street and no woman were members of any RWA. It can thus be assumed that these groups are excluded from processes of collective action to a substantial degree.[147]

A similar gap was also observable during fieldwork. It showed that the doctor's practice on street No. 10 worked as a social meeting point for a number of men before prayer time. Since the doctor was present in the colony all day long, he provided a (if small) space to meet for others, and knew about several initiatives. He himself was member of the RWA in his street, and had been involved in the initiative to provide the street with a brick cover ten years before (discussed in this part, section 1.2); he knew about the street No. 20 association, and was an interested interview partner for all political issues as he regularly read the newspaper 'Punjabi Kesari'. His neighbour, a carpenter who joined in the brick laying process too, but even more often an older resident of street No. 12 who was retired, and an Accountant from that same street would meet and discuss; others joined in the evenings. The young General Secretary of the RWA in street No. 9 was equally on friendly terms with the group and was called twice to join an ongoing interview. Inhabitants of the streets from No. 14 onwards were however never seen here. While this might be due to the fact that another doctor had his practice on the corner of street No. 14,[148] it also shows a certain division of C-Block: Mostly the old, respectable, men of the Northern streets would be aware of – and would comment on – the political processes. Younger men, and

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[147] This might explain why these streets are still *kaccha*.
[148] Here, no such discussions could be observed.

especially labourers with no time to sit down and chat, had no access to the information circulated here. My assistant and I typically were the only women joining in the conversations, though being invited upstairs to meet the doctor's wife from time to time to switch to discussing mostly the children's schooling progress. This loose group is therefore to be considered the local elite of the area, with political connections, knowledge and economic resources that allow different ways of governing, as will be seen below.

2.4 Political organisation

Politically, the UAC is organised at three levels. At national level, it fell into the East Delhi constituency until the delimitation process. The Member of Parliament then was the Congress member Sundeep Dikshit, son of Delhi's Chief Minister. In 2009, it shifted into the newly created North-East Delhi constituency and since then is represented by Jai Prakash Agrawal from the Congress party.

At State level, too, the constituency was newly delimited in 2006, and the representative has changed subsequently: in December 2008, a Muslim Congress representative residing in Okhla was elected as Member of the Legislative Assembly (MLA); before that the BJP ruled the bigger constituency since at least 1993.[149] Besides being MLA, the new representative has several other party- and religion-related posts, so that he only visits his office in the colony on two days a week.

At Municipal level, the UAC falls into the Shahadra North Zone, and forms its own MCD ward which counts around 50,000 inhabitants (131109MA-MC-MATS).[150] This ward was delimited in 2007, drastically reducing the number of voters, and giving it a high Muslim percentage.[151] Although the ward was under Congress rule at least since 2002, the political landscape has changed recently: According to the reservation policy under the 74th Constitutional Amendment, the Municipal Councillor (MC) post is currently reserved for ladies. Since April 2007, therefore, the Councillor is an illiterate Muslim woman from the Congress party, whose husband unsuccessfully contested in earlier elections. She resides in the colony itself and belongs to the Saefee (carpenter) caste. As she originally was, however, "not interested in politics" (111208SH-MC), her husband takes over a majority of tasks within the colony. Although supportive, and

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[149] The constituency name could be traced back until 1993; before that, data is available on the 1983 elections, but the name of the constituency does not figure here, pointing at earlier delimitation processes (Election Commission of India 1999-2010).

[150] Exact numbers will be available only once the 2011 Census data is analysed.

[151] In 2002, the ward counted ca. 73,000 voters (State Election Commission Delhi 2009) ; in 2007, the number was 29,866 (State Election Commission Delhi 2010). Exact percentages of members of different religions will also be available once the 2011 Census data is published.

understanding himself to be progressive, he has a rather patronising attitude towards her new public role, and is in a paternalistic way proud to 'have empowered' his wife.

> "I wrote so many things about women, that they can do the same thing as men; and then I did the practical thing with my wife. She used to be a housewife, cooking food, and not showing her face to any man. Now what can't she do? She can do everything on her own. People were afraid: how would she speak in Town Hall? And then I made her speak. I am not going to meetings with her. I told her that I will make her in such a way that people will say he made her so that she can do everything."
> (060909MA-MC)

That residents hardly attribute any importance to her occupying the post showed when interview partners used both names his and hers to designate the Councillor.[152] Also, both husband and wife, are usually at home during the morning hours to receive complaints and visits from inhabitants and both sign under the Councillor's seal. But sometimes, this task is also fulfilled by their children, the husband's brother, or the Assistant Sanitary Inspector (ASI). Residents report that the ASI also accompanies the MC on her official visits, an arrangement which might be used to hide her illiteracy from her voters.

3 Visibilities of waste water in the Unauthorised Colony: What is the problem?

Although the previous sections indicate that stagnation of waste water is the major problem in the low-lying C-Block, problematisations of waste water occur in a number of different ways in the described situation. One striking feature is the absence of the visibility of health hazards related to the specific layout of pit latrines which discharge black water into open drains. Apart from that, waste water is quite visible. Yet, not all residents see waste water in the same way; nor are the same issues pointed out as problems by residents and state representatives. Waste water is visible from different perspectives, and day-to-day experiences vary extremely within the area. Accordingly, various actors' relationships with waste water are in the focus of governing practices, as will be discussed in the following.

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[152] Distinguishing between 'him' and 'her' in Hindi, if no name or verbal form is added, is moreover impossible, as there is only one personal pronoun in the singular that has no gender specification.

3.1 The residents' perspective

Through their everyday practices, and the frequent exposure to waste water inhabitants develop specific problematisations. It has been described in this part, section 1.2 and shown in map 8 that the infrastructure situation in the UAC differs strongly between three types of streets – *kaccha*, brick, and *pakka* – and service provision is not the same, too. Because both proved to influence the visibility of waste water to a high degree, residents' perspectives will be presented according to the status of streets.

3.1.1 Kaccha *streets: Outflow is difficult*

Rank	Type of problem
1	**Street is *kaccha*, water supply**
2	**No proper drain**
3	No [working] streetlights
4	**Waste water stagnation in low parts**
5	Solid waste
6	Lack of health facilities
7	Lack of education

Table 4: General problem ranking in street No. 17 (241109SH).

In *kaccha* streets, waste water-related problems are high on the agenda. The general problem ranking highlights how the absence of infrastructure creates waste water stagnation which is perceived to be very problematic (see Table 4). Residents report how the lack of a coherent slope in the street and missing drains make outflow of waste water difficult.

Stagnation then has several effects: first, because most parts of the drain are *kaccha*, too, waste water seeps through drain walls into the houses, damaging the foundations. It thus negatively affects earlier investments. Second, stagnating waste water can flow back into houses: "In the rainy season we have to be cautious because the waste gets into the house through the sewer pipe. (…) [W]e all have to live upstairs, but to get out of the

Photo 19: Problems in the *kaccha* streets. Because the slope is not coherent and there are no drains, waste water stagnates in lower parts throughout the year. In front of the entrances, the septic tanks with their pipe outlets are visible *(Photo: A. Zimmer, December 26, 2008)*

house we have to go down and get wet." (151208AK), one resident complains about exposure to

liquid waste. Third, stagnating water allows mosquitoes to breed, and smells bad, creating nuisances and health risks. Finally, water pools in the street make walking difficult (see Photo 19).

3.1.2 Brick streets: A little improvement

Rank	Type of problem
1	Lack of education
2	**Waste water stagnation in drains**
3	Electricity
4	Water supply
5	**Street is not concreted**
6	**Dirtiness**
7	Poverty

Table 5: General problem ranking in street No. 10 (251109SA)

In brick streets, residents problematise waste water in comparison to earlier. Before the brick cover, they report, the street was muddy and uneven, and waste water used to flow in the middle of the street. From the experiences in the *kaccha* streets we can imagine a similar situation to the current set-up there.

Waste water stagnating in lower parts, backflow from the open space in which drains ended, and subsequent overflow in the street were thus common, making walking difficult especially for children.

Yet, today problems still prevail. An inhabitants therefore ranks waste water stagnation in drains second in the general problem ranking only after lack of education (see Table 5). Overflow in the rainy season can still reach a half or one foot depth in the street, and stagnating water contributes to mosquito prevalence and bad smell

Photo 20: Problems in brick streets. Especially children are exposed to waste water when drains overflow in the rainy season. (Photo: A. Zimmer, August 16, 2009)

(see Photo 20). People complain about garbage which lies around, causing health problems, and an overall lack of cleanliness. Inhabitants also report contamination of drinking water and problems of waste water seeping through walls.

In houses which are below street level indoor overflow can be as deep as two feet. They moreover face the challenge that their septic tanks are too low to discharge in the drains any longer. Where the difference in level is only small, this leads to toilets being disused in times of heavy rain as water then starts flowing into the septic tanks and residents have not installed permanent solutions to the problem. Nuisance, impracticalities, health risks and damage to houses are thus at the centre of waste water-related complaints.

But waste water-related problems also interfere with religious duties: If people resort to self-help to clean the drains, they have to wash again before being allowed to pray. Finally, residents complain that the street does not look good and talk about feelings of embarrassment: "when our relatives come from UP [Uttar Pradesh] they are mocking us because it's so dirty" (111208SA). Statements like this hint at the complex social and aesthetic dimensions of the waste waterscape which will be discussed in more detail in later sections.

3.1.3 Pakka *streets: Mixed feelings about the upgrading*

Rank	Type of problem
1	Drinking water
2	No government hospital
3	No good school
4	**Dirtiness & solid waste [of the colony]**

Table 6: General problem ranking in street No. 11 (251109NA)

In *pakka* streets, too, inhabitants make extensive comparisons with earlier times when asked about waste water-related problems. They report how the situation was "messy" and "muddy" with stagnating water pools. The dirt was so prevalent that even in the dry season they "couldn't go out barefoot" (131109TE), and inhabitants hold that overflow in the rainy season could reach chest level. The severe water logging made getting out of the house and street difficult, people fell in the slippery streets, and overflow in houses occurred through the individual pipe outlets into the open drains. Today, in contrast, "it is far better" (251109ME). Short-time overflow in the roads only happens in the rainy season, and is not very prominent any more. Lack of cleanliness and the accumulation of solid waste are given rank number 4 but this refers to the level of the colony (see Table 6). "Earlier the dirt of the street and drains was a problem but not any more", the interview partner who did the ranking observes. In interviews, too, neighbours complain about the dirtiness of the open space, about bad smells, mosquitoes and health hazards with regard to waste water (see Photo 21).
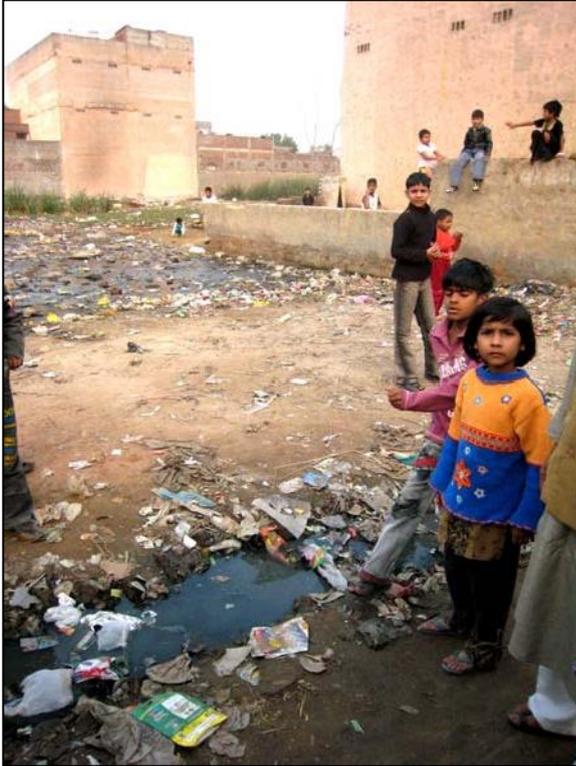
Photo 21: Problems in *pakka* streets. Residents are more concerned about solid waste and waste water accumulation in the main open space of the colony. (Photo: A. Zimmer, December 11, 2008)

Yet, as concreting the streets meant raising them about three to four feet, inhabitants also feel that upgrading was "good for the road, but bad for the house" (141208SA), so that they are "happy and sad, both" (141208SH). Problems have shifted: Many houses have been buried so low that their water pipes and septic tanks are submerged, and overflow occurrence in houses has increased a lot. If water stagnates in drains, people who did not raise their pit latrines cannot use them any more. Waste water blockages also create conflicts amongst neighbours, as only joint cleaning can really remove them. One woman reports that some people allow their kids to use the drains as toilets, a practice she finds deeply revolting. Yet, nobody mentions feelings of embarrassment in the *pakka* streets.

The three accounts show certain similarities as well as differences. All groups focus their problematisations on stagnation of waste water in the residential area which is linked to health hazards, damage of houses, and difficulties of organising daily life. However, while in *kaccha* and brick streets, collective problems of overflow in streets are most prominent, in *pakka* streets, individual problems of overflow in low houses are more important for the inhabitants. Also, the dignity dimension of waste water problems is visible only in the statements of residents of *kaccha* and brick streets. I will investigate the reason for this further in section 5 of this part.

3.2 State perspective: Lack of infrastructure and problematic work experience

When discussing the state perspective, it is important to keep in mind, that, unlike in the JJC, the Municipal Councillor is a resident of the UAC herself, although not of the investigated block. She lives a few streets further towards the North. Despite this fact, waste water-related problems are not very prominent in her account of the colony's issues. She however admits that "In the colony there are so many problems. Eighteen years back this was still jungle and some

abandoned houses, there were no facilities." (111208SH-MC). Her husband adds that until today, 20% of the drainage is still *kaccha*, i.e. not made out of concrete. Both therefore frame the waste water problem as one of infrastructure.

Bureaucrats, too, hardly describe waste water-related problems that inhabitants face. Only the Sanitary Superintendent of the Shahadra North Zone talks about overflow as an issue in the Transyamuna area in general. Although according to him a proper slope exists within the individual colonies, he discloses that the whole of East Delhi has no natural drainage and waste water needs to be pumped towards the river bed. The Malaria Inspector reports problems of dengue in the area. In the ward, the Assistant Sanitary Inspector (ASI) notes that people complain about three issues: blocked drains, garbage, and streets that are not swept. More importantly, however, lack of infrastructure is mentioned as a problem. The ASI describes the situation of the UAC most illustratively as follows: "Here all drains are open, there are no urinals, no dumping spaces, the faeces are flowing in the drains and we have to dump the waste in any open space (…). Animals' dung also flows in the drains." (200109SU-ASI).

Apart from these few statements, street-level bureaucrats chose to talk about the problems the situation is causing for themselves and their work. The DEMS staff complains that they do not get any office space and therefore depend on the good will of the Municipal Councillor (MC) to provide them with somewhere to sit (see Photo 22). They report lack of equipment, a problem which is confirmed by the MC's husband. The fact that people have "encroached" (200109SU-ASI) is said to create additional difficulties for scavengers, without further elaboration.

Photo 22: The public scavengers. Staff can only sit and meet in the parking space of the Municipal Councillor's house. (Photo: A. Zimmer, January 16, 2009)

But working in the UAC is an unpleasant experience in general. Scavengers report that they get constant complaints from citizens; they face untouchability and people do not respect them. Residents throw solid waste in the drains and thus nullify their efforts to provide cleanliness. The nature of the work itself is such that "We don't like it, we have to take out the shit, who would like this? It is very dirty. We don't like it at all but we can't steal and we have kids to raise, our

stomachs want to be filled." (160109SK-G). Since the infrastructure is deficient and the Department lacks equipment, working in the UAC is unpleasant for the ASI as well:

> "there is more tension here [than in authorised colonies], people are threatening me, that they can approach the Town Hall people, so whenever I reach here from my house I feel tense. People complain in advance also so every day I come I have a complaint waiting for me. (…) In the authorised colonies there are facilities, so there is no tension. I really don't like this job at all, there is so much quarrel at times that I am very tense and feel very bad." (200109SU-ASI)[153]

Issues of overflow and dirtiness are thus not problematised by state representatives. Rather, lack of infrastructure and equipment is discussed, and both are related to a problematic work experience by the DEMS staff.

In contrast to residents, then, state representatives open a very different field of visibility with regard to waste water. Rather than problematising exposure to waste water, their accounts quickly shift towards issues of interactions with citizens in UAC. Unlike in the JJC, it is not inhabitants' interaction with urban space which is the focus of attention; rather it is the interaction between citizens and state representatives. More precisely, state representatives complain about lack of deference, something I will come back to in section 4.2.2 of this part. To understand better in how far state representatives' or residents' conduct is problematised in relationship to waste water, the next section will discuss different forms of waste water-related knowledge.

4 Contested waste water 'truths'

The following section reflects on the 'truths' state representatives and citizens develop in the waste waterscape. These include reasons that interviewees gave for problems of dirtiness and overflow, the two major issues brought up by residents. Waste water knowledge portrays certain types of behaviour as acceptable while others are constructed as objects of government that need to be rectified. Explanations therefore allow investigating whose conduct in relationship to waste water is problematised by whom. Another type of knowledge discussed in section 4.2 of this part concerns broader discourses on the state and on UAC residents that will allow a more complex understanding of practices that aim at allocating different subject-positions to members of both groups.

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[153] The role of complaints in waste water governance will be discussed below.

4.1 What are the causes of waste water-related problems?

The truths residents have formed about the waste water problems they face are not static as the environment they live in is under constant change (see this part, section 1). Explanations are in fact very dynamic, and have changed especially since the electoral victory of Muslim candidates in both Municipal and State elections. Moreover, explanations are very different in the three types of streets.

4.1.1 Kaccha *streets: The politicians are inactive, and self-help is too costly*

In section 3.1.1 of this part I discussed how residents of *kaccha* streets problematised stagnation of waste water in roads and houses. People explain this with the fact that some households have raised the street and the drains in front of their dwelling, so that the streets are very uneven. Neighbours' attempts to improve their situation have thus created problems for those 'upstream'. There is also backflow from the Eastern side as well as from neighbouring higher streets to the North and South. Outflow towards the East is difficult as the level of the open space keeps rising with growing amounts of solid waste being dumped there. Also, there is no proper drain that connects the open space to the main drain.

But drainage, in the eyes of residents, is also inhibited by the fact that public scavengers do not come to clean the drains (wherever they exist) on a regular basis. The reason for scavengers not showing up is, according to inhabitants, because the street and drains are not cemented. Yet, residents are also aware that there are "only ten scavengers in the whole (…) [colony]" (x160909SH), limiting the possibility of service provision significantly. While some neighbours would like to employ a private scavenger, others opine that it is too costly and it is better to "buy food for our children" (241109NA). Private scavengers are also said to be unreliable in their service.

But why are streets not cemented? Several causes are named for this: In general, the feeling prevails that the politicians do not assist the inhabitants. Partly, this is explained by the fact that residents here are poor – and the poor are either not listened to or do not manage to find time to complain in the first place. Also, more people live on rent here than in other streets and thus do not approach the Councillor. But politicians in general are perceived not to do any work after the elections, and corruption is blamed for the status quo. Especially in those areas where politicians did not receive the united vote of all, work is delayed, according to the residents. While some neighbours link the lack of infrastructure to the former BJP MLA and the government discriminating against Muslims, others relate it to the fact that the colony is

unauthorised. Comparing their situation to the brick streets, neighbours of *kaccha* streets comment that laying bricks would have been too expensive as "we earn 150 Rs per day" (030109RA).

This account shows how a complex mix of issues is conceived of as problematic. Importantly, collective self-help in terms of both infrastructure and services, is too costly for inhabitants of *kaccha* streets. Moreover, individual self-help even creates more problems for other households. In this context, the state's inactivity at different levels is blamed for problems: The local political representative is held responsible as much as the earlier representative at State level; other, more difficult to grasp processes such as the legal status of colonies, major drain construction and the organisation of solid waste disposal are seen as causes, too.

4.1.2 Brick and pakka *streets: The public makes mistakes, unity lacks, and politicians fail*

When talking about problems of the whole colony, people in brick and *pakka* streets blame earlier brick making for the low level of the UAC and waste water stagnation. Apart from that, inhabitants of *pakka* streets agree that overflow in houses is due to raising the street level. Yet, as seen in this part, section 3.1.3, people mostly feel that there was no other option to solve the problem of drainage. Especially in brick streets, inhabitants problematise overflow of waste water in streets (see this part, section 3.1.2). In both types of streets, residents complaine about dirtiness, solid waste and choking drains.

All these waste water-related problems are blamed on both, neighbours and the state: "The politicians are making mistakes, but the public also makes mistakes", an interviewee holds (x131009AL). Neighbours contribute to dirtiness when they throw solid waste in the drains, keep buffaloes whose manure is dumped in the drains, and do not let the scavengers take out the silt in front of their houses. "Everybody keeps their house clean, but in the streets, nobody is interested", a woman complains (231009NO). Residents throw garbage on empty plots, and if these do not have a boundary wall, the solid waste falls back into the drains and causes blockages. When thinking of cleaning the drains amongst all neighbours, there is also lack of unity, and especially those living in higher houses do not support those in lower houses, as they are not immediately affected by indoor overflow. Neighbours sometimes refuse to clean their portion of the drain. Those covering the drains in front of their houses are exacerbating the problem further, because cleaning this stretch is then impossible. Problems of lack of unity are also visible with regard to scavenging services: Earlier, people all had appointed a private scavenger to maintain the drains; today, there is no consensus on paying for this service, as public scavengers have started coming in the streets. All these explanations clearly problematise

inhabitans' conduct, in relationship to waste water and solid garbage, but more so in relationship to their neighbours. The expected solidarity is missing.

While the public scavengers still come very rarely, the private scavengers come irregularly, or have stopped coming altogether. If they come, they clean only in front of the houses that pay them – and in that case people relate that neighbours' garbage flows into their stretch from the back. The existence of both types of service providers, private and public, has also complicated the situation as "[t]he private scavenger goes and complains to the Councillor that he is stealing the work from her by sending public scavengers. So she neither comes, nor lets the public scavengers come" (231009NN). Further problems thus arise through the situation of shifting rules that regulate waste water drainage.

Yet, residents blame waste water problems on the state by the majority. First of all, they are not happy with the public scavengers' performance, as they do not come often enough, and do not work properly. They leave the silt heaps lying on the street to dry and thus cause more dirtiness. Residents criticise that the trolley supposed to come after some days to collect the silt never showed up. They would also expect scavengers to collect the household garbage. Public scavengers are therefore accused of being "loose in their duties" (231009KH).

This situation is due, in the eyes of residents, to the fact that politicians are not responsive and do not pay much attention once the elections are over. "Even if someone goes to complain it doesn't work, it's like banging your head against the wall, so nobody goes", one respondent explains (261009ZA). No matter how often they complain to the MC, the scavengers will not come more than once a month. Some hold that the female MC "is following this Muslim way of life and doesn't walk around" (190109BA), and is thus not even aware of the problems.

There are also too few scavengers in the colony. This is partly blamed on the Councillor: "We didn't choose the right person to be Councillor, she doesn't have the ability to get more scavengers, and also she is not getting them to work properly, we should not have chosen her, she is the wrong person", one resident judges (111208MO). But some suspect larger political obstacles here: the fact that the Municipal Councillor is of a different party than the Mayor of Delhi is said to be a reason for the small number of scavengers. A member of an RWA is also aware that the former MC who continued his mandate in the neighbouring ward took more than his share of scavengers after delimitation.

Still, residents feel that a proper system of allocating the duties amongst the existing number of staff would be enough to provide cleanliness. Some accuse the MC of personal, political and

caste-based partiality in this context. A resident explains how the MC's husband "has some bitterness against (…) all the houses of the street because there are mostly Mallik people here and there was a Mallik contestant in the same election in which (…) [the MC's husband] lost" (110109IM), so that scavengers are not sent in that particular street. Moreover, those scavengers who are there do not work all the time as there is a lot of corruption: "The Councillor, the [Assistant] Sanitary Inspector and the scavengers all share and eat together" (x131009AL), people hold, insinuating that scavengers bribe the politician and their superiors in order to get the attendance signed although they privately work somewhere else instead.

There are infrastructural deficiencies, too, which are blamed on the state: The lack of big dustbins at street-level is deplored. Also, within individual streets, drains are "not properly constructed" (110109BI). More importantly, the open space got gradually filled up with solid waste as the government does not send anyone to clean it. Because the blocks of houses between the open space and the main drain were raised, drains of C-Block do not have an outlet any more. No proper drainage was constructed for this space as there is a legal case pending. Thus, it fills up with water from the street drains and then blocks further outflow. Politicians do not pay attention to that situation, as "the Councillor's husband's and the MLA's eyes are on that land because it is worth 20-25 crores[154]" (x131009AL), both hoping to capture it once other actors have lost interest in that stretch of land.

Regarding the status of the street, residents of brick streets relate the lacking concrete/cement cover to several causes: The administrative process of providing infrastructure is seen as bound up with favouritism: "politics are going on" (101208VA), a woman tells, so that "files were not taken out". Others are aware that the politicians' funds cannot be spent in Unauthorised Colonies without restrictions. They therefore hope that infrastructure will be provided once the UAC is regularised. In the eyes of residents, religious favouritism has led the BJP MLA to not construct their streets in the past. Today, discrimination of Muslims continues through bureaucrats, because the administration is dominated, in the view of one respondent, by the RSS[155] ideology.

But even the present Muslim political representatives are not performing well: The Municipal Councillor has pushed work for her supporters while being negligent regarding the streets of his opponents. This is qualified by one inhabitant as follows: "Here there are no political politics; in

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[154] 200-250 million Rs.

[155] The Rashtriya Swayamsevak Sangh is a Hindu nationalist organisation, associated with anti-Muslim movements.

other colonies there are political politics, so they [the politicians] want to attract all people. (…) Here the politics are revengeful politics" (x131009AL). The Councillor and the MLA do not work hand in hand, as there is a conflict between them. People also wonder what the new MLA is doing as he "should construct streets" but they haven't "seen any progress" (231009KH). He is not accessible and cooperative. Shortly after the elections, it is criticised, he went for Hadj. He visits his office only once a week, and only the Personal Assistant attends phone calls. Both politicians are moreover busy with party-related posts and duties.

These rich narratives point very clearly at political representatives as the main culprits for waste water-related problems, as they have the power to facilitate or inhibit citizens' access to state services. It is their conduct in relationship to citizens – their neglect and partiality – which are blamed for a lack of these services and subsequent waste water-related problems. Citizens equally criticise politicians for a lack of professionalism in their work: they are not practising 'political politics', they fight amongst each other although belonging to the same party, and have an eye on personal financial gains instead of working towards the development of their area. Local neglect is complemented in the view of residents by broader processes in which a specific social space is assigned to unauthorised, and moreover Muslim, colonies in the city, deepening exclusion from state services. A little improvement is however stated due to the delimitation process: "Earlier it [the colony] was not known but now with the delimitation the name is known" (280809IF), a resident observes. The visibility of the UAC has therefore grown, and residents hope for subsequent governing interventions.

Yet, statements also convey a certain self-responsibilisation at political level: The fact that scavengers do not come more often, and that street construction is not proceeding at a faster pace is related to the fact that people are too busy in their daily lives to put pressure on the Councillor. Here, too, lack of unity hampers the effectiveness of complaints. Also, house tax is not paid, so that money for development is not available and government's "attention" (160809MO) is limited.

Moreover, citizens are conceded a responsibility to choose their political representatives wisely, as seen above. An inhabitant explains how in a different constituency people had been "cleverer" (x131009AL) by agreeing on one candidate to vote for in the last elections so that work would be done evenly in the whole colony. Badly performing politicians are thus related to wrong decisions by inhabitants. In contrast to poorer residents in the *kaccha* streets, then, those in brick and *pakka* streets see a greater role for themselves in the solution of waste water

problems. Their confidence in their agency is bigger, and lack of unity and strategic collective action is deplored as a major cause for ongoing waste water stagnation.

4.1.3 State representatives' truths: Faulty practices of residents, politics and lack of planning

The explanations of waste water problems by state representatives are equally diverse. A first strand of the discourse problematises the conduct of residents. According to this 'truth', the practices of inhabitants, particularly the disposal of solid waste into the drains, play a major role for lack of cleanliness and overflow, as documented in statements of the sanitary staff and the former MLA. Apart from household waste, the Sanitary Superintendent holds that refuse from unlicensed slaughtering and cattle rearing is put in the drains, too, thereby blocking outflow. Solid waste is disposed of on individual empty plots when owners are away because residents lack awareness, according to the MC's husband. The MATS points out inhabitants' agency in enhancing the situation: they should give their garbage to the scavengers. While admitting the fact that the trolley is far too small for the household garbage of the whole colony, it is omitted that the lack of dustbins poses major problems for inhabitants, and that the scavengers do not allow the residents to use the vehicles for disposing of their litter.

A second facet of the discourse blames waste water problems on conflicts between different local state representatives. The former Municipal Councillor is accused of partiality: As he lived in the part of the ward which is now separate from the investigated colony, he mainly employed the scavengers over there. The MATS and the ASI relate how, at the time of delimitation, he "kept 60 scavengers for his area, and only 20 are here" (150109MU-MATS). "After the delimitation", the ASI notes, "the former Sanitary Inspector took the clean ward. It is also unauthorised but it is much cleaner because (…) [the MC] was living there." (200109SU-ASI). The current MLA, despite being Muslim and a Congress member, is criticised for his lack of commitment: after winning the elections, he first went to perform the Hadj. But the former MLA also reports that out of the appointed scavengers not all work, and that MCs do not allow the staff to accompany him on his supervision rounds. Lack of cooperation between the different political parties and layers of governance are therefore responsible for waste water-related problems, too.

Yet, most importantly, all state representatives trace waste water problems back to higher levels of governance. In their view, long-term solutions are impossible unless the number of scavengers is increased. Under the current circumstances, individual streets can be cleaned

every two-three weeks only. The small number of staff is partly associated with the status of being unauthorised, and partly with the fact that the UAC is inhabited by Muslims. These statements can be read as attempts of state representatives to lower pressure that residents exercise by pointing to own powerlessness.

The scarcity of staff is complemented by lack of infrastructure and equipment, making provision of services difficult. Scavengers for example refuse collection of silt from the drains on the grounds that they lack the necessary trolleys to transport it. Attempts at improving the system through provision of vehicles are nullified in the eyes of the MATS, because these vehicles are too small, and are supposed to dump the garbage at a 40 km distance – too far to reach and come back within daily working hours. The former MLA decries the lack of dustbins and garbage collection points [*dalaos*], stating that cleanliness cannot be expected under these circumstances. As a result, the open space is used instead, since there is a legal case pending concerning the ownership of that area.

The Municipal Councillor and her husband also explain that MCs are not allowed to spend their funds on infrastructure development in UAC; MC funds "can only be utilised on the 'Chakbandi Road', which is the old access road that was already here when this was still agricultural land", the Councillor complains (060109MA-MC). This set-up leaves the MC powerless to upgrade the streets by her own; she has to rely on funds from other MCD Departments, or from the MLA or Member of Parliament (MP). The general backlog of the area is explained by her husband with the fact that political representatives did not invest "in this Muslim area" (060109MC-SH) before delimitation. But the former MLA holds that MP and MLA, too, cannot use their funds without restrictions on the UAC (041209MO-MLA), and instead have to rely on the fund set up for Unauthorised Colonies by the State government (see part V, section 2.3). The MC's husband adds that administrative procedures are lengthy, often prone to corruption and moreover depend on election cycles. Earlier attempts to provide cement/concrete cover to one street with the help of the MP funds failed for example because the National Elections kept people busy so that the tender which had been invited lapsed. Timely and local decision-making is therefore hampered.

These problems add up to a general lack of planning. The former MLA points to this shortcoming, and states that earlier brick making activities aggravate the situation. As the missing slope hampers drainage towards the Yamuna, overflow occurs. Moreover, according to him, the increase in population has led to a situation where existing drains are well over capacity and would need to be reconstructed.

In contrast to the case study on the JJ Cluster, the discursive dimension of the waste waterscape appears to be more differentiated in the statements of residents and political representatives of the UAC. Interestingly, the explanations that residents living in brick and *pakka* streets and local representatives of the state offer show an overlap. Often, inhabitants would explain which reasons the politician had given them for delay of infrastructure or deficient service provision, showing that communication is more frequent here. Explanations are also richer in detail in these two types of streets, pointing to the fact that residents have requested explanation from different actors to analyse the situation they live in.

A certain solidarity with their voters is apparent especially in the discourses of the Municipal Councillor's family. Particularly higher levels of governance and an overall lack of planning in unauthorised colonies are named as prominent causes for waste water-related problems, pointing them out as the right addressees of residents' complaints. Nevertheless, both administration and political representatives hold citizens responsible to some extent; residents' relationship with solid waste and waste water which is constructed as – although not primary – object of government. The next sections will put this observation into perspective, as larger narratives on UAC residents do portray their behaviour as highly problematic.

4.2 Narratives on the Other and their impacts on practices of waste water governance

Despite the greater overlap between waste water truths presented in section 4.1 of this part, the contested character of knowledge in the waste waterscapes shows in the narratives that inhabitants and state representatives unfold about the 'Other'. The next sections present how both groups construct each other's conduct as object of government. When circulated, these discourses work towards influencing people's subjectivities and subsequently their self-governing actions; they moreover justify interventions to govern the 'Other'.

4.2.1 The state, inequality to the point of criminality

Inhabitants have everyday encounters with state representatives that shape their ideas on how 'the state' "*should* work" – and how it in fact "*does* work" (Corbridge et al. 2005: 119). The overall narratives by residents on the role of the state in the UAC is rather negative. The vast majority of politicians are not trusted. "We expect that out of 100 promises they should keep ten. The real politicians have become rare nowadays. Today they do only 10% of what they say." (280809IF), an older resident laments. Corruption is rampant, with politicians receiving fixed percentages of any tender from contractors before agreeing to sign the contract (190109BA). Residents are aware of party politics, and have observed that even within parties, the state

apparatus is not unitary: They know that the MLA is connected to Sonia Gandhi, head of the Congress party, while the MC is linked with Sundeep Dikshit, the son of Delhi's Chief Minister, and that conflicts exist between these two sections.

A certain shift can however been observed in narratives on the state. An anti-Muslim bias amongst the BJP and the administration was the single most important factor used to explain the neglect of the colony until 2008. A major part of the feeling of lack of support and justice by the state was founded on this perception. The greater size of the earlier ward, and the fact that the former MC was not from their colony played a role here, too. Residents thus related how before the current MC "there was no-one" (110109BI) to look after the waste water issue. Although there was an elected Councillor, this person was not from the colony, so that people had no approach to him and felt that there was no way to get control over scavengers' cleaning rhythms.

Today, access to the state representative at local level has improved. While the feeling of alienation has thus receded since both political representatives are Muslim themselves, and the MC is a woman from the colony, new fault lines have however become apparent that shape state-citizen relationships in terms of other characteristics.

Similar to the experiences in the JJ Cluster, people in the UAC distinguish between two categories of people that get differential treatment by representatives of the state. On the one hand, there is the favoured group. This comprises people with money or a good post; those who are themselves government employees; property dealers and "important" (231208RE) people. They are the ones who are connected to the politicians in terms of class, as "this is the connection from top to top" (160809MO), an inhabitant of a *pakka* street notes. But the group also comprises those who have a personal relationship with politicians through belonging to the same caste, family or region. If no relationship exists, citizens can establish it through visiting the office frequently or helping in election campaigns.

But inhabitants also opine that favourable treatment can be obtained through different demeanour: "Those people who are more aware and educated quarrel with them [the bureaucrats]", a respondent from a brick street notes (231009KH). A woman residing in a *kaccha* street indicates that her husband gets different treatment because he "has a different way of communicating" (161109SH). The importance of communication has been noticed by Corbridge et al. (2005: 115-117) in their study on interactions with the state in rural India as well. This group therefore includes those who do not easily accept the subject-position of the governed.

On the other hand stand the poor; those who are labourers or daily wagers and cannot afford the time to visit the politicians and offices. People who did not vote or supported someone else than the elected representative also count in the disfavoured group. Since demeanour counts, the illiterate, uneducated, those who are less assertive and "innocent" (231009KH), fall in this category, too.

This categorisation results in a situation where the favoured group not only gets friendlier treatment by officers, but also gets any work done easily, fast, and properly. Its members are listened to, they can approach the politicians, and their papers are signed. At a grander scale, they receive infrastructure and other government benefits. Whereas in the eyes of residents earlier the whole area was discriminated against because they are Muslim, "what happens is that today work is done for those who have contact with the MLA and MC, the development is not equal, some are deprived of it" (190109BA). But the influential even get favourable treatment if it is against the law. A government teacher whose husband works for the police recounts:

> "I can also use my husband's ID card; when I don't wear the safety belt I can show it and the police will smile and let me go. I also have put a DP [Delhi Police sticker] in the car, so I don't have to pay the tax to cross the Delhi/UP [Uttar Pradesh] border." (131109TE)

The disadvantaged group, in contrast, is treated rudely and is ridiculed when visiting politicians or offices. They are given false promises, while their work gets delayed. They are often sent back, so that they have to come again and again. Also, people might have to pay to get assistance. Those in brick and *kaccha* streets feel that the fact that they do not get better infrastructure is the result of belonging to this category of people. To them, the state is not transparent: "The common man doesn't know what is happening within the system" (011109NA). Procedures of service provision remain seemingly arbitrary.

As the government is not "afraid" (031109SH) of the poor, work is not done properly, and, worse, the police do not respect the law when dealing with them. The quoted inhabitant of a brick street notes how

> "there is a law that the police has to take the order from the court to arrest someone. They do so for the educated areas. But in these areas they just come and grab them, lock them in jail and give them a thrashing." (031109SH)

These statements point here at an indignation that state representatives do not follow the rules: the law, people feel, is on their side. While the government is an accomplice of the rich and

influential in breaking the law, it does itself break the law when dealing with poorer and uneducated citizens.

The knowledge residents have gathered on the state functions as a practice of (self-)government in two ways: First, increased social proximity to the Councillor encourages her voters to complain about waste water-related problems more often. Yet, second, particularly poor residents are at the same time discouraged to seek assistance as they have experienced that the poor are not listened to. Equal service provision is therefore not expected.

4.2.2 UAC residents, not understanding their role as citizens and uncooperative

State representatives, in turn, also have a specific image of UAC residents that will be discussed in the following. Although moral inferiority is invoked when bureaucrats describe inhabitants of the colony as backward and biased, and scavengers in particular complain that a great majority of the people practice untouchability, this description is less thick and wide-spread than in the JJ Cluster. Rather, the image revolves around three dimensions: lack of understanding, lack of respect and deference toward the state authorities, and lack of cooperation.

A population which lacks understanding

All state representatives in the ward and zone agree that UAC residents lack education. This is however not related to literacy per se; rather, it is associated with a presumed lack of understanding on the part of the residents of what their responsibilities are. This shortcoming is reported regarding garbage-related practices when the former MLA holds that "the people need to be educated" in order not to throw garbage in the drains (041209MO-MLA). But it is also mentioned with regard to the complaint system. The Sanitary Superintendant of Shahadra North Zone explains how inhabitants create problems in the first place and then complain; also, they do not understand that public scavengers will not come on official holidays: "What do they do? They throw the garbage in the drain and on top of that they complain. During the gazetted holiday[156] it starts getting dirty and they complain that scavengers are not coming." (281009SA-SS) He concludes that "Where educated people live, less complaints are coming". Education, in the eyes of state representatives, teaches citizens the thin line between problems for which they have to take responsibilities and those for whose solution it is legitimate to rely on the state. This is similar to observations of Coelho (2005: 180-81) in Chennai, where street-level bureaucrats related 'illiteracy' or 'lack of understanding' to a way and frequency of complaining

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[156] National Holidays, announced in the Gazette of the Indian Government.

that was unpleasant for the administration and to residents who were supposedly insensitive to the difficulties faced by bureaucrats. Since this kind of education is said not to be there in the UAC, the scavengers opine that "people don't take their responsibilities" (161109SK-G). This discourse undermines the legitimacy of complaints and functions as a broad discouragement to citizens who use the complaint system to solve their problems.

Lack of respect and deference

Also, lack of education is related to unpolite and inadequate social behaviour.

> "Some days ago I was in the 25 feet [wide] road and I made the scavenger work and a woman threw a plastic bag [with garbage] down and it fell on my head. I threatened her that I would challaan her [issue a fine] but she didn't even bother to say sorry. People are illiterate here and not very aware." (200109SU-ASI).

Education is thus supposed to teach people their 'proper' role vis-à-vis the state and its representatives: Respectful and deferent behaviour is expected from literate residents. Instead, inhabitants of the UAC "are not afraid of the law, they are ready to fight and abuse" (200109SU-ASI), and do not show respect for the DEMS staff and its work. They show a negligent attitude and "don't bother" (161109SK-G). Inhabitants are expected to accept the subject-position of the governed when interacting with state representatives. Lipsky (1980: 62) had already commented on this fact in his study on street-level bureaucrats when noting that multiple arrangements in interactions obliged citizens to submit to state power. UAC residents' lack of deference presents therefore a major flaw in the eyes of the state representatives.

Lack of cooperation

In the eyes of the state representatives, both lack of understanding and lack of deference combine to produce a pattern of behaviour where inhabitants of the UAC do not cooperate with representatives of the state. This complaint is very frequent in interviews with bureaucrats, and the husband of the Municipal Councillor joins in. Non-cooperation for example means that people throw garbage in the drains (161109SK-G), or do not let the municipal Malaria Inspectors inside the houses in order to check mosquito breeding (060109GO-MCD). Statements convey that the state will not be able to solve waste water problems on its own. Without cooperation of citizens, it is powerless.

But the outlook is rather pessimistic: Attempts to teach cooperative behaviour through the political institution of the Municipal Councillor and the religious institution of the mosque have

not shown any results. Therefore, the Malaria Inspector assesses: "I am really hopeless, because the government spends money on us but they waste their time, nothing changes here" (060109GO-MCD). The Assistant Sanitary Inspector equally thinks that the colony doesn't have a "bright future" (200109SU-ASI).

Although the notion is used less in interviews than when talking about JJ Clusters, here, too, inhabitants are therefore qualified as lacking civic sense (281009SA-SS). Yet, civic sense takes a little bit a different meaning in the case of the UAC, as it is associated with a higher degree of understanding of own and state responsibilities; the relationship between citizens and state needs to be clear to citizens for the latter to be acknowledged and avail state benefits. This understanding not only requests deferent and respectful behaviour; most importantly it entails that citizens need to cooperate with the state and not work against it. Since inhabitants are understood especially by bureaucrats to lack 'civic' qualities, bureaucrats are pessimistic about the UAC's future.

The discourses on the UAC residents forcefully work towards subjectivities in citizens which accept taking over responsibilities like the cleaning of waste water drains. Stressing the need for cooperation, state representatives delegitimise confrontative behaviour or struggles for improved infrastructure or services. They present themselves as relatively powerless without citizens' support, thus justifying any missing commitment residents might accuse them of.

To sum up this section on the narratives on the Other, both groups complain that members of the other group are not 'afraid'. This expression, conveying that the Other is not obeying, or not giving enough respect, finally points to a lack of power over the counterpart the speaker perceives. Both have the impression to be unable to govern the Other's conduct; both resent that the Other does not accept the subject-position of the governed. These observations deepen the understanding gained from section 4.1 of this part. Residents' accounts of politicians failing to support their voters gain depth as residents identify with the disadvantaged group of citizens that do not receive adequate treatment by the state. In contrast to the JJC, state representatives' accounts did not problematise the interaction people entertain with urban space and criticised citizens' waste water-related conduct only to a certain degree. These narratives are complemented here through insights in a discourse that constructs people's behaviour vis-à-vis state representative as a major object of government. Unless UAC residents become more cooperative, it is held, no solution to waste water problems will be achieved. But what are the effects of these discourses on residents' subjectivities?

5. Subjectivities

The truths on UAC residents discussed above are part of the discourses that influence how people construct their identity in relationship to Others. The experiences people have when interacting with politicians and bureaucrats produce an understanding in people of their own position in society, their role as citizens, and the power(lessness) they have as voters vis-à-vis their political representatives. It is therefore in the direct interaction with the state representatives that the subject-position of being a citizen is negotiated and produced.

5.1 *Kaccha* streets: Invisible and powerless

In the *kaccha* streets, subjectivities mostly centre on the notion of poverty. Interviewees identify themselves or their husbands as daily wagers, or labourers and craftsmen; "we are not shopkeepers" (151208AK), a woman insists. In other streets, they feel, people are economically better off. As discussed in this part, section 4.2.1, inhabitants have experienced that 'nobody listens' to the poor. Their poverty therefore is at the root of a feeling of powerlessness. In their understanding, this powerlessness leads to their exclusion from state interventions. The status of the street is therefore explained to be due to their poverty: "In the whole C-Block this is the dirtiest street" (281208KH). The poor are obliged to live in a dirty space. In section 3.1.1 of this part, I have discussed how this dirtiness provokes feelings of shame in front of outsiders.

Worse still, residents in *kaccha* streets reveal a sense of being invisibile in the eyes of the state. In interviews, people asked for politicians to take a round of the area to see how bad the situation was. This shows how citizens here have the impression that the state does not even see them; they do not exist on its radar. There is therefore no hope for improvement.

These kind of subjectivities strongly discourage residents of *kaccha* streets to struggle for waste water service provision. Where state representatives are perceived not to pay attention and to be disinterested, people do not go to complain about infrastructure and scavenging services. Section 6.1.1 of this part will show this very clearly.

5.2 Brick streets and *pakka* streets: Educated and entitled, but still living in dirt

In brick and *pakka* streets, less people describe themselves as poor, and nobody considers the whole street as inhabited by poor; rather, poverty is used to explain why certain families could not raise their houses and are subsequently affected more by overflowing drains. Also, one inhabitant explains how people are actually kept poor by the government: as MCD is not doing its job, people have to spend "99% of (...) [their] income" (011009AS) on raising their houses

again and again. Other reasons for poverty are described as lack of education, or tragic incidences such as accidents of the head of household. Poverty is described as something which entitles them to assistance: "We could keep a private scavenger, but since the Councillor and the MLA are there now, they should do it, it is their responsibility, we are poor and how should we afford it?", an inhabitant judges (060109SU). Rather than perceiving poverty as a deficiency, inhabitants thus use it to strategically make a claim.

Even less people describe themselves as uneducated. They perceive that politicians and the administration "think those people [in UAC] are not even aware" (031109SH). Yet, they resist ascriptions by state representatives that they lack education, and know that they have become full fledged Delhiites acquainted with the city. The self-respect which is visible here is even more evident in the way people identify themselves as a large vote bank. They also report that "in Delhi, 85% of the colonies are illegal" (021009AS). Living in an unauthorised colony is therefore nothing to feel bad about; it is the norm.

Therefore, people compare their colony as a whole extensively with other areas, negotiating their space in the social web of the city: first of all, they compare with Hindu areas; second, they compare with nearby authorised colonies, and the residence of their MLA; third, with smaller towns or villages in UP. In contrast with all these areas, inhabitants see their colony as dirty.

> "This is a 3rd class area, I would prefer to call it 4th class, (…) [the neighbouring authorised colony] is 2nd class. In 1st class areas even the cars are not covered, you can't find any dust on them and the trees look like washed, but here even inside the house there is so much dust" (131109TE).

The cleanliness of authorised colonies is thus the goal and the bar against which inhabitants compare their colony – and feel others compare, too: "Outsiders from approved colonies say 'it stinks so much, how can you live like this'" (021009AS). Section 3.1.2 of this part discussed how inhabitants of brick streets feel embarrassed in front of their relatives. The environment of the UAC thus exposes them to shame. *Pakka* streets, in contrast, seem to represent a status where people are still inconvenienced and unsatisfied, but do not need to feel embarrassed.

As 'normal' citizens, and moreover part of the majority, they feel entitled to public services. Yet, they express the feeling that despite their being educated and being a big vote bank, they do not get the facilities they are entitled to. This entitlement is such that residents feel the right to penalise the state for failing to deliver: "We are not paying the house tax because the government is not providing any facilities", one interviewee holds (141208MO). They are also

aware of their power as voters which enables them to punish non-performing politicians at the ballot box, a point we will come back to in this part, section 6.1.2.

Due to the frustration that stems from their assessment, inhabitants have mixed feelings about the future. While some are optimistic about the regularisation process and ongoing infrastructural upgradation attributed to that, others are rather pessimistic given the fact that they do not trust politicians. Shortly after the State-level elections in December 2008, residents were extremely hopeful, as they perceived the backlog of the area to be caused mostly by the lack of a Muslim representative, as seen in section 4.2.1 of this part. Yet, at the end of 2009, people voiced their impression that the new MLA had let them down. Hopes have therefore become very dim over the period of my fieldwork: "if even after giving the vote to Congress nothing happens then what will we do?" (060109SU), a man asks. New narratives to explain the lack of development are now more centred on pessimistic accounts of the state's attitude towards the citizens in general, and the poor in particular, as seen in this part, section 4.2.1.

5.3 Members of Residents Welfare Associations: "It is our duty to fight for our rights"

Out of residents of brick and *pakka* streets, however, members of Resident Welfare Associations (RWAs) present a special case and will be discussed separately in this section.[157] For members of RWAs, their role as citizens is a clearly defined part of their subjectivity, and is important in the way they see themselves. Vis-à-vis the state, but also their neighbours, they show an attitude which is pro-active. They understand themselves to be educated, but more importantly, they see their role as taking initiative and bringing about change. As a member of the association in street No. 20 explains:

> "My mentality is to move forward. We are bound to society on the one side and to religion on the other, and we have to make a way in between to be free, otherwise we get stuck. In order to move you have to leave some things behind, sometimes even your own people. (…) If people say God will feed us, it won't work out, we have to grow the wheat ourselves." (190109BA).

Things can therefore not be left to God. Yet, they cannot be left to the state alone, either. Initiating the laying of brick covers, or organising the drawing of the layout plan for the regularisation process is thus something RWA members are proud of doing. If neighbours show little understanding for their commitment, they can take this very personally. With regard to the layout plan procedure, one interviewee therefore explains: "Others are uneducated, or even

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[157] Remember how no resident of a *kaccha* street was member in a RWA, see this part, section 2.3.

some educated don't understand and say it's the government's work, so the government will do it; so I will feel hurt" (011109AS). RWA members thus have a different view of the role of the citizens and the state. They want to work with the state, and therefore claim a say in decision-making. The accountant of street No. 12 argues that it would be good to have associations even at street level; these groups could then assist the political representatives: "If something slips off their minds we can remind them." (040109MO). With regard to the administration, too, members of RWAs want to participate in decision-making because "The JE [Junior Engineer] and Contractor can't just do their own thing [regarding the street construction]; since we live here we have to look after our own comfort." (261109AS).

Yet, this forceful claim goes hand in hand with an understanding of the role of citizens as bound to the state by duties in an equal measure as by rights. The quoted interviewee holds that "If we leave everything to the government it won't work, we have to take certain responsibilities too. It [cleanliness] is our right, but first we have to fulfil our duties" (261109AS). Own duties towards the state are thus perceived very strongly by this group, reflecting that here, narratives of cooperation with the state and awareness about responsibilities circulated by representatives of the state have been accepted by residents.

Even so, there are also clearly defined limits to citizens' duties, as this statement shows: "[The MC] has asked people now to come to her place and take the sweepers with them but this is not the responsibility of the common man to invite them." (160809NA). Cooperation also does not necessarily mean passive acceptance of the way things are: "It is our duty to fight for our rights" (011109AS), argues the RWA president in street No. 14, D-Block. Perhaps this seemingly contradictory statement best mirrors how RWA members define their identity as citizens: While they are entitled to certain services according to the law, it cannot be assumed that the state will deliver those entitlements at their door step; rather, obtaining their fulfilment will require the willingness of citizens to become active.

Summing up, it can be observed, how residents in the *kaccha* streets relate to the state mostly as poor. In contrast, in brick and *pakka* streets, inhabitants' relationship with the state is predicated on their understanding themselves as citizens who are entitled to certain services, and who have rights. Finally, RWA members relate to the state as participants in the governance process: as sometimes uncomfortable, but reliable partners. These very different understandings lead to different forms of governing state representatives' conduct in the waste waterscape, as will be seen in the following sections.

6 Technologies of government

The waste waterscape of the UAC is highly dynamic. Previous sections have shown how in *kaccha* and brick streets, inhabitants face overflow problems in the streets, while in *pakka* streets, residents are exposed to waste water in their houses if these are below ground level. All groups complained about lack of cleanliness and the accumulation of solid waste in the open space and smaller plots which are not built up. In *kaccha* streets, inhabitants are too poor to execute major upgrading by themselves, and to keep private scavengers. In both other types of streets people had invested in brick covers and private service providers. Since the state started investing in infrastructure and staff, however, collective action has receded, and former rules have lost their binding character. Under these conditions, residents in brick and *pakka* streets blame state representatives for unsatisfactory service provision and construct their neglect as major object of government. Especially members of RWAs presented themselves as willing partners in governance in order to enhance the situation.

State representatives, in contrast, problematised lack of infrastructure, planning and staff in the context of the waste waterscape. Pointing thus at higher levels of governance, they nevertheless also claimed that citizens' lack of cooperation was inhibiting problem solution. Against this background, how do these 'thoughts' find their way into 'reality' (Miller & Rose 1990 in Dean 1996: 49)? Although discourses influence peoples' subjectivities and lead to self-government, there are also direct interactions in the form of technologies of government, aimed at conducting the Other's conduct.

6.1 Governing the state

In the UAC, like in the JJC, complaints are the most important technology used to govern state representatives at ward level. The voting exercise, too, is understood as a powerful tool. Certain groups even employ legal instruments to conduct the Municipality's conduct.

6.1.1 Kaccha *streets: Is there any use in complaining?*

In *kaccha* streets, since people are pessimistic about accessing public services and only a small minority of people wants to get services from a private scavenger, attempts at governing the waste water situation is mostly directed at neighbours, but results are minimal.[158] The focus in the following is on interactions with state representatives.

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[158] Sakdapolrak (2010: 246-247) describes a similar situation, where governing neighbours' waste water-related practices take place in an informal settlement in Chennai.

Regarding public service provision, experience tells inhabitants that it is very difficult for them to conduct the conduct of state representatives, as those are mostly responsive to money or personal connections. When attempting to get services from the administration, such as ration cards, residents use therefore middlemen, as they do not have direct approaches and cannot afford to bribe officers. Only one high caste woman whose husband runs an air conditioner business recounts how he managed to get assistance through perseverance and an assertive way of communicating:

> "One day there was a black out and my husband called an officer and told about it and the officer said we have not heard about it. Then he called a second officer, asked what was the point of rupture and asked how long it will take and then the officer said it can take all night. So my husband said okay, I will call someone else and he called the third officer and said I need the electricity now, and it came before 1 am. Other [uneducated] people wanted to go for a rally but what's the use, calling is just a three hour job." (161109SH)

Education and a different way of behaviour as compared to neighbours are seen as more successful and efficient in order to obtain services by her.

Concerning waste water problems, too, inhabitants perceive the politicians as not listening to the poor. People therefore relate having gone to the Councillor only in the rainy season and before Bakreid, when extra pressure can be exerted due to strong moral norms. Before the festival, women went in a group of 10-15, after which the Councillor sent the scavengers. With regard to infrastructure, most residents have given up on her support, because they wonder "what is the use" (030109RA) since "she is not listening" (241109HI).

The account shows how democratic rules of representation and accountability alone are perceived as insufficient to successfully employ the technology of the complaint or vote. Poverty is thus perceived as a major bottleneck for the use of governmental technologies.

6.1.2 Brick and pakka *streets: The politician owes performance*

In brick streets, residents frequently try to access services through complaints to the Municipal Councillor. This technology has experienced dynamic change since the delimitation process. People remember how earlier, they did not have access to the MC. "Before (…) [name of MC] was councillor we couldn't go to the councillor, we had to write an application at the MCD office. The councillor was Gujjar,[159] and he used to say he didn't get the votes from us" (141208IF). Despite visits to the earlier representative to get drains cleaned by the public scavengers,

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[159] To recall, Gujjar is a Hindu caste.

nothing happened: "in his whole life he has never sent anyone" (141208MO). The complaint therefore has become much more powerful: Today, complaints are used to achieve better quality, and especially better frequency of services. Yet, this technology is still of limited success. This might be due to the fact that scavengers have a better relationship with the Councillor than residents: "The scavengers are closer to the Councillor [than the voters], they see her every day." (021009AS). To underline their entitlement, different strategies are used by residents to exercise pressure. People use upcoming festivals to raise the moral pressure on the politician, or highlight the urgency of their complaint, as it is very dirty, the drains are completely full, or have started smelling bad.

Some have seen how upcoming elections facilitate getting a response. To enhance the chances of their complaint being heard, people invest in building a relationship with the Councillor, as they know that this factor is highly important (see this part, section 4.1.2). Those who help the politician in their campaigns feel that they have given support in the candidate's personal work – and expect the politician's help for their personal work in return. People with a better connection to the Councillor, instead of going in person, can also call her on the phone to convey their complaint. Moreover, people appeal to the democratic obligation of the elected representative and perceive they have created a link of reciprocity through their vote: "we went to him [MC's husband] and told him that he was not doing anything for us" (231208RE). This

Photo 23: Voter ID. Voting is an important technology of government. *(Photo: A. Zimmer, November 03, 2009)*

reflects the power people feel as a vote bank, as elaborated on in section 5.2 of this part. Even outside the complaint system, voting holds a special role (see Photo 23). It can itself be considered a technology of power. Voting is perceived by the residents as a sort of personal contract of exchange against which the politician has to fulfil certain duties. Regarding cleanliness, this means, to put it in an interview partner's words, that "we gave the vote to the Councillor so that the colony would be clean and we can get rid of the garbage and the dirt" (x131009AL). A similar attitude exists towards the MLA and his obligation to upgrade the infrastructure. Voting for someone entitles the voter to a well performing political representative. Through the vote residents gain power over the representative, and they are very conscious of this fact, as shown in the statement of this

resident from a *pakka* street: "We'll see the government for five years and then if the MLA doesn't do anything we'll push him off [his post]." (060109SU).

If results of governing practices are still not satisfying, public scavengers are governed by residents through shaming and surveillance. On the one hand, they tell them that if they don't take the silt away, they might as well not come at all. On the other hand, they "stand and control" (231009KH) to make sure drains are properly cleaned. In a few streets, there is one person, such as a shop keeper who keeps an eye on the cleaning process in the whole street; mostly, however, residents just overlook what happens in front of their own house. While this technology is judged to be successful, it is not necessarily accessible to the poor: "We are poor and we have to earn our livelihood so we can't afford to stand there [and control the SKs]", an inhabitant tells (231208ME).

6.1.3 The role of Residents Welfare Associations: Opening the door to the legal system

A yet very different picture is presented by members of RWAs. As shown in section 5.3 of this part, RWA members have a very precise idea about own and state duties. They claim that "whether we vote for someone or not doesn't matter, the duties of the elected candidate are the same" (160809NA), forcefully dismissing any legitimacy of partiality by the political representatives. We have also seen that the duties of the state are understood as something for whose delivery RWAs are there to fight. The technologies they use to govern the state are thus very different from the ones opted for by the rest of the residents. First of all, the RWAs are the counterparts of the Delhi Government in the Bhagidari Scheme and the regularisation

Photo 24: The new street signs in the UAC. The yellow and green hands are the symbol of the Bhagidari Scheme. The name of the colony has been hidden here. *(Photo: A. Zimmer, November 26, 2009)*

process of UACs, documented in part V, section 2.3. While cooperation within Bhagidari only started towards the end of my research (leading to street signs suddenly appearing in the colony, see Photo 24), the regularisation process was already well underway. Because RWAs have to provide the layout plan for the colony, and this map has to be drawn by a recognised architect, the RWA in street No. 14 took over this task, as mentioned in this part, section 2.3. Residents have been asked to contribute 1 Rs/*gaj*. In total, 56,000 Rs were paid for the first map of the colony, comprising of blocks A-H, and corrections were estimated to require another 50,000 Rs. Subjected to these corrections, the RWA received a provisional certificate of regularisation. Part V, section 2.3.1 explained how investment in infrastructural upgrading of UACs has increased with the regularisation process. It remains to see which results participating in this process will have for the investigated colony.

Second, in section 2.3 of this part, I mentioned how RWAs had filed a legal case twice in order to obtain more scavengers for the ward. Little information was available on the first of these. Yet, documents pertaining to the second case were made accessible to me through the Municipal Councillor's husband. This case was apparently filed on his initiative, but members of the RWA in street No. 14 had thought about a legal procedure already before and discussed it with him. The lawyer supported the associations for free and only received money for his expenditures.

According to the available documents, in September 2008, five associations had come together to take the Municipal Corporation and the Lieutenant Governor of Delhi to the High Court. This was the last step after more than a year of struggling for more scavengers and equipment through addresses and letters which the Municipal Councillor herself had endorsed after her election in April 2007, as well as applications under the Right to Information Act. In the petition, it was argued that environmental protection, and related protection of citizen's health demanded urgent action, and that deploying such a small number of sanitary staff, and a lower number than in adjacent wards, was violating the rights of inhabitants under Article 21 (Right to Life), 14 (Equality before the Law) and 48-A (Duty of the State to Protect the Environment) of the Indian Constitution. It is claimed by the President of the RWA in D-Block, street No. 14, that due to this move, MCD allocated a higher, though still insufficient number of staff between my two periods of field work. After allocation of more staff, the Court then decided not to take the case further.

The court case especially shows how very different means of governing the state are available to the inhabitants of the UAC as compared to the JJC. Higher levels of education, better links to the Municipal Councillor, and social networks that include highly qualified people like lawyers open

the door to legal procedures. These represent a way of claiming their rights as citizens. Yet, the President of the RWA also sees these steps as a way of punishing underperforming state representatives at higher levels of governance. "We don't have any other way to punish them", he declares. Yet, he also adds the desire to find forms of protest that are more disciplined and controllable than the traditional rallies of the poor: "The last option is to go for demonstration. We don't want that because if some negative elements join someone might get hurt." (011109AS). This statement shows the anxiety of the RWA to subscribe to norms of a more bourgeois civility in order to find greater acceptance by the state and reflects the observations of this part, section 5.3 where RWA members identified themselves as partners of the state. Yet, the court case also shows how members of the RWAs struggle with the state regarding the question who is actually better informed about the respective obligations of the state and the citizens. Using legal language, and accusing the state of not fulfilling its duties laid out in the Constitution shows how the narrative that UAC residents are not aware of their role as citizens is forcefully dismissed by this group.

6.2 Governing the UAC residents: Asking for cooperation

On the side of the state, as a substantial part of waste water problems are blamed on residents' faulty practices of throwing garbage into drains, efforts of influencing inhabitants' behaviour are visible in daily interactions.

6.2.1 Rare incidents of negotiation and punishment on duty

In comparison to the JJC, interactions between the administrative staff and residents are much less frequent. In fact, they did not take place at all before delimitation as "before [MC] was Councillor there was no Sanitary Inspector sitting there, nor someone was coming to inspect" (150109SH). Until today, residents have hardly any contact with the ASI. Also, public scavengers come to the colony since a relatively short time. On duty, scavengers try to influence people's practices by telling them that picking household garbage is not their duty, that they lack equipment, and that litter in general should not be thrown in the drains. But residents do not accept being governed. Therefore, scavengers are often frustrated, and welcome even smaller signs of cooperation.

> "First they should keep a private scavenger to take the household garbage. If they throw it, at least it should be in a polythene [bag] so that the new vehicle can just pick it easily. (…) At least if they throw it on the road it would be better than throwing it in the drain." (161109SK-G).

Anything, other than throwing garbage in the drains is still acceptable to the staff. But scavengers' power over residents is very limited. Forms of punishment such as leaving or taking the silt out deliberately in front of their house are thus being employed. Especially "if people are a bit arrogant he [the scavenger] will get aggressive and angry and just leave the whole drain and leave" (261009ZA). Similar practices were already observed in the JJC.

The Assistant Sanitary Inspector relates how he has the power to fine residents according to the MCD Act, Section 397 (Prohibition of Nuisances) and 357 (Prohibition against accumulation of rubbish, etc.) if they "accumulate garbage in front of their house or dirty the place" (200109SU-ASI). The basic fine is of 100 Rs, but the Magistrate can increase it up to 1,000 Rs. However, as seen in section 4.2.2 of this part, the ASI also feels powerless as inhabitants in the UAC are not scared if he threatens to fine them. In cases of fights with residents, he remembers having called the police sometimes. This shows that he does not have enough power on his own accord but needs to rely on the power of this authority in order to control residents – yet, it also shows that he has access to the police in order to get support. As no resident recalled such an incident, however, this kind of event seems to be very rare. In fact, inhabitants did not recall interacting with the ASI at all, so that these practices seem to be exceptional.

6.2.2 The Councillor's office hours

In comparison, the interaction of residents with their local political representative is much more frequent. When people go to the Councillor or her husband to claim the services of public scavengers, their expectations are voiced. Yet, the politician can refuse accepting the demands citizen put forward, and in turn push for people's own responsibilities as citizens. The MC's husband, as seen in section 4.2.2 of this part, therefore emphasizes that people have to cooperate in order to create a cleaner environment. The view that inhabitants are responsible themselves is widely shared in the administration, as seen above. In a joint interview, the MC's husband and the scavengers' supervisor (MATS) explain:

> Husband: "The people should cooperate with the scavengers. The amount of responsibility is equally distributed between scavengers, citizens and Councillor".
> Supervisor: "Yes it is like that. We tell them even if you don't have a dustbin, you can simply throw the garbage in the trolley instead of on the street or in the drain. It is not my duty to take the household waste but for my own convenience I tell them, otherwise they will put it on the street and it will be dirty and my effort will be invisible."
> Husband: "The government service is not sufficient to maintain cleanliness, the citizens have to cooperate and take the responsibility." (131109MA-MC-MATS)

Yet, in the eyes of the state representatives, citizens' responsibilities are more far-reaching than just cooperating through disposing of their household garbage in the right way. According to the MC's husband, residents have to inform the MC about any problem regarding cleanliness. He also encourages citizens to file applications under the Right to Information Act to get information on infrastructure provision, and even to go to court in order to obtain more scavengers for the ward, as seen in this part, section 6.1.3. As the MC's husband understands himself to be a progressive person, and following his statements about his wife's role in section 2.4 of this part, a more general agenda of empowerment can be identified here. Yet, while his attitude can be seen as empowering, and making the voters aware of their entitlements, this behaviour is a double-edged sword in that it also alleviates the MC's responsibilities in fighting for better equipment of her ward in political forums. Attempts at making citizens cooperate, as well as bringing them to claim their rights thus result in governing practices which subscribe to logics of a regime of agency.

To conclude, political as well as administrative representatives of the state convey the following message to UAC residents through their practices of interaction: inhabitants have to cooperate in order to solve waste water-related problems in the colony. This cooperation relates to direct practices of solid waste disposal, but stretches out to supporting the MC in her task to obtain more sanitary staff and waste water infrastructure for the ward.

7 Preliminary conclusions

As in the format followed in the case of the JJ Cluster, I will now discuss how the four dimensions of visibilities, truths, subjectivities and technologies come together to produce regimes of practices that govern different conducts in the waste waterscape.

7.1 Governing practices of UAC residents: 'Unequal spaces of governance'

UAC residents are exposed to waste water in multiple occasions, and all interview partners see this as a problem. They develop different 'truths' about this situation. In *kaccha* streets collective self-help is too costly for inhabitants and the neglect of the poor by the state is used to explain infrastructural deficiencies; in brick and *pakka* streets, most importantly negligence, partiality and incapability of the Municipal Councillor are blamed for the situation. Whereas inhabitants of *kaccha* streets have the impression that their poverty leads to invisibility and powerlessness, in other streets, residents are more confident about their entitlements and their power to realise

them. Those who are organised in RWAs understand their role as being active partners in governance. As a consequence of these differences in knowledge and subjectivities, three major strategies can be distinguished.

Facing overwhelming problems of infrastructure and the neglect of the state towards the poor, residents of *kaccha* streets resign and limit their attempts at governing the state to a minimum in order not to waste valuable time on what is perceived to be a vain exercise. Because daily wages are urgently required to provide a living, they cannot even enter negotiations with their Municipal Councillor. They then pay the price of dismal waste water infrastructure and lack of services, as described above, in terms of health hazards and inconveniences. On top of that, time is spent for cleaning the drains to achieve drainage.

In brick and *pakka* streets, residents use the complaint as well as the vote as technologies of performance to control their local representative. They lament its limited success, but insist in their entitlement and perceive especially the vote as a powerful tool to punish non-performing politicians. Finally, members of the RWAs accept the discourse of agency that especially the Municipal Councillor and her husband propagate. Although not all agree with the extent to which citizens are supposed to become active, it can be observed how governing attempts of these residents are addressed to higher levels of governance to struggle for infrastructure and sanitary staff. They work in coalition with the Councillor, and concentrate their efforts on achieving a more favourable position of the colony at the level of the Municipality.

This typology should however not be misread as a static social reality. The above said shows very clearly that governance processes in the UAC are neither straightforward, nor stable. Outcomes are always dynamic, and subjected to change and contestation.

When looking at the past, it is striking how very few arenas of negotiation existed at the local level until the delimitation and before the regularisation process was initiated. Higher levels of governance were accessible only to RWA members, but even for them, outcomes were not very favourable. Since the delimitation process, in contrast, the ward has opened up as a major arena for negotiations with the local state, while at the same time the support of the Municipal Councillor facilitates access to higher arenas of governance. It can therefore be stated that the power of citizens in negotiations with the state has increased considerably through decentralisation. The regularisation process has made negotiations with the state even more complex and dynamic, as, here, RWAs are engaged as partners of the State government. However, expenditures are faced in this process, because residents are requested to prepare documents and maps to apply for legalisation. Apart from financial costs, we have seen how

inhabitants have to invest time in order to carry out these tasks. Not everybody in the UAC can afford these costs. The poor, and especially daily wage labourers, are therefore left out of the new dynamic. To conclude, recent political processes have brought major changes. While increasing the power of well educated, more affluent and better organised citizens, it has transformed the UAC in a highly unequal space of governance (Harriss 2007: 2719) where the poor face increasing marginalisation (Zimmer 2012a: 95-96).

7.2 An agency- and citizenship-oriented regime of practices

State representatives' focus has shown to be on residents' solid waste-related practices, but more importantly, on the conduct of citizens vis-à-vis state representatives. Especially the street-level bureaucrats decried inhabitants' lack of deference, and were pessimistic about the colony's future unless people understood their position in the state and were ready to accept the subject-position of the governed. Yet, claims not only emphasise the need for more 'education'; they are more importantly couched in a language of cooperation: The power of the Councillor as well as the administration is belittled to 'one third' with regard to cleanliness, and citizens' support is sought. This means that waste water-related problems can be solved by state representatives only if residents 'cooperate'.

Major bottlenecks for cleanliness are identified in the lack of infrastructure and staff. In this context, the MC's husband calls upon voters to become active in terms of political struggles for more staff in the ward. Governing the residents of the UAC means, particularly for the local politician, to encourage them to get educated and knowledgeable, and subsequently use legal tools to claim their rights.

A strong discourse is therefore employed which follows the lines of technologies of agency and citizenship: administration and politicians try to convince residents that they have the power to take over parts of the waste water governance. They want to create a specific understanding in citizens of their duties and responsibilities, and encourage them to see themselves as active partners in the governance process. This partnership could then significantly diminish their own role and support or even replace state representatives' efforts.

VIII DISCUSSION: EVERYDAY GOVERNANCE AND THE PRODUCTION OF WASTE WATERSCAPES

The last four sections have presented detailed analyses of both waste water governmentalities that concern informal settlements in Delhi, as well as everyday governing practices in the waste waterscape of one JJ Cluster and one Unauthorised Colony (UAC). Against this background, this part aims at addressing two questions. ***What are the commonalities and differences in everyday practices of waste water governance in JJ Clusters and Unauthorised Colonies? What is the relationship between governmentalities and everyday governing practices in informal settlements?***

Discussing these questions will allow revisiting the theoretical framework and critically assessing the usefulness of the concept of everyday governance as well as the benefit of introducing Foucault's work on governmentality in an analysis of waste water governance, and governance in megacities more generally.

Moreover, with this part the thesis comes full circle by indicating how governance processes produce the waste waterscape in its three spatial dimensions: the material, the constructed, as well as the social space are co-produced. The last section of this chapter will attempt to present results for these three spaces separately.

1 Comparing everyday waste water governance in JJ Clusters and Unauthorised Colonies

The last two chapters have discussed in detail the everyday practices of waste water governance in one JJ Cluster (JJC) and one Unauthorised Colony (UAC). Both case studies have made it clear that everyday waste water governance is not a homogeneous, coordinated process of joint problem solving. Rather, governance is conflict-ridden and heterogeneous. The next sections will highlight commonalities as well as contrasts of practices in both areas while distinguishing between residents on the one hand, and state representatives on the other.

1.1 Residents' practices of waste water governance

In the JJC as well as the UAC, residents have developed similar strategies in the waste waterscape. Despite parallel patterns, differences exist especially at the level of the role of the local elite and the relationship to the political representatives.

1.1.1 Heterogeneity in the waste waterscape

Both areas are heterogeneous in terms of residents' exposure to waste water, and visibilities of the waste waterscape. Both settlements also show a broad variety of explanations given for waste water-related problems. In the JJC, especially those living in low lying areas towards the South complained about waste water stagnation and overflowing drains. Residents of the Northern areas, in contrast hardly faced overflow. In the UAC, inhabitants of *kaccha* and brick streets ranked overflowing drains and stagnation of waste water very high in a list of problems, while those living in *pakka* streets were concerned only if their houses were below street level. In the JJC, the Naribat live closest to the blocked main drain, and in the UAC, daily wage labourers stay mainly in *kaccha* streets. The local elite of both areas lives in relatively better parts, i.e. the higher parts of the JJC and the brick and *pakka* streets in the UAC. There is therefore a tendency of socially and economically marginalised groups being exposed to waste water more.

In terms of subjectivities and technologies of government, in the UAC, the poorest residents living in *kaccha* streets, and in the JJC the Naribat (being socially most excluded and on the lower spectrum of income and education) convey a similar overwhelming feeling that the state is not there for them, and that they are not listened to, or invisible. Both groups therefore show signs of resignation and hardly attempt to conduct political representatives' conduct. As a result, they are obliged to clean drains by themselves more frequently and are thus again exposed to waste water more.

In contrast to these groups, both settlements have a section of the population that, although not part of the local political elite, takes an active part in the waste water governance through complaints and votes. These sections have a feeling of entitlement to public waste water services, which is derived in the case of the JJC from the impression to share values of cleanliness and hygiene with the middle classes, in the case of the UAC from the pride to be educated and the knowledge about the large vote bank within Delhi that UACs constitute.

Finally, in both settlements, a local elite exists which is politically active and struggles for improvement, although in the JJC this group does not include all educated residents. These groups use the power of knowledge in a strategic way, filing RTI applications, and insisting on education as an important part of their identity. Table 7 summarises the practices of the different groups identified in both research areas.

Practices \ Groups	Economically and socially marginalised groups	Middle groups	Local social/political and educational elite
Seeing waste water	Waste water stagnation and overflow of drains common	Ways of seeing waste water depend on part of settlement they live in	Waste water stagnation and overflow of drains less common
Forming Subjectivities	Own feeling of difference, invisibility and powerlessness	Feeling of entitlement, of being no different	Feeling of entitlement, education important part of identity
Using strategies and technologies of government	Resignation	Struggle through complaints and voting behaviour	Struggle especially through contestation of knowledge, RTI applications etc.
Exposure to waste water	Own cleaning of drains frequent	Own cleaning of drains 'in between' cleaning of scavengers	Own cleaning of drains 'in between' cleaning of scavengers
Participation in governance	Participation perceived as impossible	Participation perceived as possible	Participation perceived as possible

Table 7: Three groups of inhabitants in the informal settlements.

This analysis shows that using the grid of intelligibility that Foucault called "governmentality" (2007: 108) is very useful to distinguish practices of various groups of residents. A differentiated picture appears which allows to address the effects of governmentalities and governing practices of state actors critically, and to look into why certain groups do or do not participate in governance. While large sections of the populations of informal settlements spend large amounts of time and energy in governing waste water and continue struggling, the most marginalised do not. These groups apparently face such strong patterns of exclusion on account of their illiteracy, poverty, or their 'difference' and supposed moral deficiencies, that participation does not make sense to them. Because inequality is too institutionalised in state practices, attempts at governing waste water means for these groups to loose valuable time.

1.1.2 Differences in conducting the local politicians' conduct and in the role of the local elite

Despite these important commonalities, major differences can be identified. At the level of truths, for instance, the JJ Cluster is divided between those who blame waste water-related problems on residents and hold that there is no political solution – parts of the local elite, but also other residents – and those who hold the scavengers or more generally state actors responsible. In the UAC, in turn, scavengers are not held responsible for the situation in *kaccha* streets, because they simply do not go there. Blame is therefore allocated to political representatives, and poverty is said to inhibit self-help. In other streets, lack of unity among

residents is decried, but more importantly scavengers, and above all the political representatives' neglect or partiality are blamed for waste water-related problems.

With respect to the group of socially and economically marginalised inhabitants, Naribat residents in the JJC attempt to resist having to clean by themselves in a partly violent way and through ardent negotiations with scavengers over social hierarchies. This conflict is not apparent in the UAC where scavengers do not visit *kaccha* streets. Inhabitants here either dispose of waste water in cesspools or clean drains by themselves on a regular basis, and conflicts over waste water-related problems are carried out between neighbours.

In general, contact between residents and the administration is much less frequent in the UAC as compared to the JJC. In contrast, contact with the local political representative is much less frequent in the JJC, an asymmetry I have already pointed out elsewhere (Zimmer 2009). In the JJ Cluster, the possibilities of conducting the politicians' conduct are very limited. The strengthening of municipalities through the 74th Constitutional Amendment, or the delimitation process at the level of the Municipality have not shown any effect in the investigated settlement, especially because Municipal Councillor and Member of Legislative Assembly are from the same family and the State representative has taken over all JJC-related affairs. As a result, governing practices are not very successful, and long-term solutions are not achieved. There is no talk of further improvement of the situation: sewer lines are not discussed, and improvement of waste water-related services is very unlikely.

In the UAC, on the contrary, delimitation has led to major shifts because the ward has opened up as an arena for political negotiations. The vote has become a very strong and successful technology of government through which residents can conduct their Municipal Councillor's conduct. Residents of brick and *pakka* streets therefore talk about improvement of services and infrastructure as an attainable goal in the (near) future. This leads to a situation where the JJC is conceived of as a hopeless space by most, while the UAC is understood to be dynamic. Optimism in the UAC peaked when two Muslim politicians got elected as Municipal Councillor and Member of Legislative Assembly; since then, however, new scepticism has appeared.

Despite newer disappointments, this different outlook causes a striking difference in strategies of the local elite. In the JJC, a majority of this group distance themselves from other residents, while only a small minority struggle for better service provision because positive results are not expected. Many members of this group choose the path of individual improvement, which leads through education, better incomes, and eventually, the move out of the cluster. In the UAC, in contrast, the local elite has taken up the challenge to struggle for the regularisation of the colony, confident that better infrastructure and better service delivery will result. The struggle

here is therefore for collective improvement of the area, and residents do not move out. Table 8 sums up the discussed differences.

Settlement Groups	JJ Cluster	Unauthorised Colony
All groups	More interaction with street-level bureaucrats, less interaction with local political representative	Less interaction with street-level bureaucrats, more interaction with local political representative
Economically and socially marginalised groups	Partly violent negotiations with scavengers over social position	Conflicts between neighbours
Local social/political and educational elite	Waste water-related problems are blamed on residents	Waste water-related problems are blamed on political representatives
	Majority aims at individual improvement and moving out	Majority is engaged in struggle for collective improvement

Table 8: Differences in residents' practices of waste water governance

At the conceptual level, these results point to three insights. First, they show how important it is to undertake empirical research in the localised waste waterscapes of Delhi. Practices between and even within settlements vary to a significant degree, and no general picture at the level of the city can lead to an in-depth understanding of problems and strategies that residents or state representatives chose to govern these. Second, results highlight that informal settlements cannot be treated as one category, but need to be differentiated because very different policies have consequences on residents' way of engaging with waste water governance. Finally, different strategies cannot be understood without analysing the power relations in the waste waterscape: Without investigating the negotiations that go on to assign others the subject-position of the governed and to conduct their conduct, it is impossible to comprehend why Naribat e.g. are in conflict with the scavengers, while educated residents of the UAC successfully put pressure on the Municipal Councillor. Including Foucaults' (2007; 2010) concepts in an analysis of governance has therefore proven to be extremely fruitful.

For the governance of Delhi, the results mean that the strengthening of the Municipality has been a first and very important step towards inclusive governance, and especially reducing the number of voters per ward has effectively strengthened the ties between citizens and their political representatives. However, the JJC also shows that the most marginal populations do not benefit much, and are rather in day-to-day contact with the bureaucracy, over which they do not have direct power – in contrast to political representatives they can govern (albeit with

difficulties) through their voting power. Creating forums for direct interaction with bureaucrats such as in the suggested (but badly implemented) Ward Committees is of paramount importance here to strengthen the ties between citizens and the administration, and creative solutions for empowerment of residents vis-à-vis the bureaucracy could have significant impacts on governance outcomes. Finally, the results show that the local elite can only play a positive role if there is optimism regarding the upgrading of the settlement as a whole. If this is not the case, better educated or less poor residents will chose leaving the settlement, therefore making struggles for those who remain more difficult as they will not be able to rely on literate residents for written complaints or 'a different way of communication', seen to be important in the case of the UAC.

1.2 State representatives' everyday practices of waste water governance

Next, I will discuss commonalities and differences in the practices of state representatives in the wards and zones. It shows that in both research areas, state representatives govern waste water through a focus on solid waste and notions of cleanliness/dirtiness. Also, in both settlements, processes of Othering show in governing practices. Yet, regimes of practices differ.

1.2.1 Governing cleanliness/dirtiness, Othering residents of informal settlements

In the UAC as well as in the JJC, state representatives' focus is not on waste water. Rather, staff of the municipal Department of Environment Management Services is concerned about accumulation and disposal of solid waste, and both administration and political representatives criticise that residents do not maintain cleanliness. Therefore, processes of Othering are visible to varying degrees. Residents of informal settlements are described as dirty and undisciplined in the case of the JJC, and as recalcitrant and unaware in the case of the UAC. Inhabitants are blamed for the problematic situation and their agency in enhancing cleanliness is highlighted. Lack of education is a point which comes up in interviews with state representatives in both cases. Although slightly with a different meaning, this is an important point as residents are called to change because education is supposed to instil discipline and a better understanding of citizens' role in governance. Moreover, education is supposed to encourage a positive future development because children will then be taught the accepted practices. Also, in both cases, residents' behaviour vis-à-vis state representatives is problematised. This, however, happens in a different way in both areas.

1.2.2 Regime of discipline, regime of citizenship

Despite the presented commonalities, major differences appear between both case studies with regard to state actors' practices. This starts from the ways waste water-related practices of residents are problematised. In the JJC, the major point of contention for state representatives is the way settling has happened in a spontaneous way, leading to high densities. In the eyes of street-level bureaucrats, this appears to inhibit proper service delivery. The understanding of state representatives depicts JJCs are hopeless spaces. JJ inhabitants are believed to have major deficiencies that make the situation not improvable. Therefore, the state cannot solve the waste water problems until and unless residents change: Residents have to actively discipline themselves before solutions are achievable. Technologies of agency and discipline are coupled in this approach with the aim of behavioural change.

Very much in contrast to these observations, UAC residents' waste water-practices are problematised by state representatives most importantly in terms of cooperation. Settling in the UAC is not at all criticised, especially since the Municipal Councillor is a resident of the UAC herself. Instead, the message here is that the state can solve waste water problems if residents cooperate. Technologies of agency are coupled with technologies of citizenship to 'teach' citizens their role and duties. The UAC is conceived especially by the Municipal Councillor (and her husband) as a dynamic space where improvement is very likely, and can be accelerated when politicians and citizens work hand in hand. Bureaucrats, however, are not so optimistic.

Table 9 sums up commonalities and differences in state representatives' practices.

	JJC	UAC
Focus of problematisations	Solid waste-related practices Dirtiness	
	High density of the cluster, major deficiencies of its residents	Residents do not cooperate enough
'Truths' about residents	Residents lack education, do not interact with state representatives in an acceptable way	
	Residents are 'different', dirty and undisciplined	Residents lack awareness and are recalcitrant
'Truths' about the settlement	Hopeless space, state cannot solve waste water-related problems	State can solve waste water-related problems if residents cooperate
Technologies of government	Technologies of agency	
	Technologies of discipline	Technologies of citizenship

Table 9: Commonalities and differences in practices of waste water governance by state representatives.

These results unveil a situation where the inclusion of residents in governance processes by local state representatives is not without pre-conditions. Especially if residents are not educated, or

'too different', especially bureaucrats seem to believe that cooperation is not possible – and even unilateral initatives of service delivery are thought to be obstructed (see for a similar point of view Coelho 2005: 180).

The insights gained here build on a conceptualisation of the state as an "everyday state" (Fuller & Bénéï 2001). Only the attention to individual state representatives and their views, knowledge and negotiations can reveal these patterns of governing residents of informal settlements in day-to-day interactions. The benefit of doing so will be further discussed in the following section.

2 Comparing governmentalities and everyday governing practices

In parts IV and V I have discussed the broad lines of acceptability along which waste water in informal settlements is governed in Delhi – the waste water governmentalities. Comparing these with the everyday practices found in the research areas is of great interest to understand better how governance actually works, how governmental projects are implemented on the ground, and in how far the everyday state, but also citizens, have an influence on governance outcomes. This approach fleshes out how a concept of everyday governance – introduced in part II in order to avoid the "managerial perspective" (Hoff 2003: 41) of many analyses of governance – can be operationalised. As a result of such an approach, governance processes show in all their heterogeneity, contradiction and multi-directionality.

2.1 Governance matches on the side of the state and resistance of residents

Several matches between governmentalities and practices on the ground can be identified. These matches make governing efforts of state actors relatively powerful. Although residents resist these efforts, their influence in these cases is rather small.

2.1.1 Invisible waste water?

Most striking in the analysis of waste water governance is the fact that waste water lacks discursive space in accounts of state actors at all levels. Waste water is rather invisible, integrated in, and often dominated by debates on water, health and sanitation at international level; in Delhi, the topics of sanitation and river pollution structure the discourse. On the ground, waste water disappears beneath discussions on solid waste and dirtiness (pointing to an important difference between both governance levels, discussed below). Waste water governance by state actors therefore seems to happen partly in an unintended manner while intentionally governing something else. This has the effect of inhibiting an integrated view on

the urban water cycle and leads to fragmented responsibilities where waste water produced by around 30-45% of Delhi's population with all its pertaining health hazards is not governed actively by any agency because it flows (or stagnates) in 'storm water' drains.

On top of that, when studying informal settlements, it appears that waste water governance by state actors is integrated forcefully into the more clearly visible governance of 'slums': because 'slums' occupy such a large discursive space in Delhi as opposed to the rather invisible waste water, governmentalities regarding how to acceptably 'steer' populations of informal settlements in their relationship with urban space determine to a large degree which goals of waste water governance are formulated for these areas and how they are pursued. Part V documented how informal settlements represent particular spaces within the urban fabric, in which waste water governance is inscribed in larger mechanisms of exclusion or participation. On the ground, it shows that residents of informal settlements are conceived as 'different' especially in the case of the JJC, so that different governing practices are employed in the waste waterscape.

JJ and UAC residents' ways of seeing waste water contrast with this situation, because for most, waste water is very visible, and trying to control stagnation and avoid overflow of waste water drains is a major part of day-to-day governing practices. That state representatives even in the wards do not problematise these issues shows how little influence residents can exert in interactions of everyday governance in terms of the framing of problems even at local level.

2.1.2 Objectionable practices of 'slum' residents?

When looking at how residents are governed in their relationship with waste water, both levels of governance appear to gear into each other in important ways. The critical ways of seeing 'slums' at the administrative and political headquarters translate on the ground, where local politicians and street-level bureaucrats offer very depreciative accounts especially on residents of JJ Clusters, but also on inhabitants of UACs. The focus on education at policy level points out that for the citizens being illiterate is inacceptable in the eyes of the state, as this debilitates their capacity to become active 'partners in (waste water) governance'. The discussed Mission Convergence that reaches out to JJ residents is therefore still predicated on notions of 'masses' that are in need of improvement. In the wards, this assessment is reflected in the insistence of street-level bureaucrats and local politicians on residents' lack of education, depicted as a major deficiency especially in the case of the JJC. This supposed deficiency is targeted by rather unspecific educational programmes at national and municipal level which aim at inducing residents' 'behaviour change'. Both case studies point to the fact that these attempts are

forcefully translated to the ground even without a clear policy framework. Residents of both settlements are 'taught' in their day-to-day interactions with state representatives that they need to change their waste water-related practices.

Yet, regarding the JJC, policies of slum demolition expressed the view that the majority of slum residents are not 'improvable'. On the ground, this view is also prevalent, showing in processes of Othering that are visible through governing interactions. Residents are perceived by state representatives as fundamentally different from other citizens. In the UAC, in contrast, the regime of practices at State level aims at including 'improved' and governable inhabitants into the urban fabric after their participation in the regularisation process (Zimmer 2012a). This reflects on the ground where technologies of citizenship call for residents' cooperation with state representatives. To sum up, inclusion of residents of both types of settlements is envisaged by state actors only once they have changed: Those living in informal settlements cannot remain the way they are.

The empirical chapters have shown how residents resist depreciative accounts forcefully, and display what might be termed "counter-conducts" (Foucault 2007: 201). It is in the discourses on the Other that the contested character of governance shows most clearly. Norms of cleanliness and literacy or formal education are used by inhabitants to claim a different 'truth' about who and how they are. Resistance also plays out at the level of discourses on the state, where inhabitants of both settlements depict this institution as biased against the poor and against those without influential connections. Lack of infrastructure but also unfavourable outcomes of negotiation processes are traced back to the inequality in politicians' but more so bureaucrats' approach towards citizens. The fact that politicians show a little bit less biased against inhabitants of informal settlements is certainly due to the power voters have over their elected representatives. Yet, as JJ residents revealed that support is strongest shortly before elections, the limitations of this technology of government are obvious. Despite resistance, state discourses on education show effects in that, especially in the JJC, concerned residents perceive their illiteracy as a major shortcoming. Behaviour change takes place here, as several illiterate respondents sent their children to school.

Finally, at all levels it is apparent that regimes of governing practices overlap, strengthening the argument of Füller & Marquardt (2009: 96) that analyses of governmentalities need to acknowledge plural practices. There is no neat distinction between a disciplinary, performance-, agency-, or citizenship-oriented regime of practices to waste water governance. Rather, different elements are integrated into a complex reality of interaction. The next section, however,

demonstrates that this dispositif aims at very different objects of government on the side of state representatives at both levels.

2.2 Governance mismatches on the side of the state and 'invented spaces of participation'

While state representatives seem to agree on what they do *not* govern (namely, waste water), and on how they address residents of informal settlements, there are mismatches that can be identified, too. These mismatches make policy implementation a result of reinterpretation. Yet, policies are also transformed through residents' ardent negotiations.

2.2.1 Different objects of government

The first obvious mismatch between waste water governance by state representatives at national, State, and municipal level on the one hand and in the wards and zones on the other hand, is the fact that on the ground, concerns of river water quality and access to sanitation are strikingly absent. In official policies, interventions aim at maintaining or achieving an acceptable level of waste water exposure of the population, an acceptable burden of water-related diseases or an acceptable level of river water quality. In the wards and zones, in contrast, Municipal Councillors, Members of Legislative Assembly and street-level bureaucrats see and try to govern inhabitants' solid waste-related practices, the way they interact with storm water drains, and the notion of dirtiness and cleanliness.

This shows that governance is not only a process in which actors have "discrepant interests and ambitions" (Kooiman 2003a: 79) – it is a process of interaction in which different actors focus on different objects of government. If higher ranking bureaucrats think that sanitation policies will be implemented on the ground, they overlook that the staff of the sanitary department does not govern sanitation: It governs 'dirtiness', drains, and solid waste. The reinterpretation of policies at local level (Hyden et al. 2004: 133), the gap between different levels of the administration (Kaviraj 1991: 91), show here to be even more profound than assumed – the objects of policies themselves are redefined in everyday interactions.

This shows even in matters of language and understanding of infrastructure and waste water. For example, the division between sewage and storm water is completely blurred on the ground because it proves to be in fact inexistent. The institutional split, of course, prevails, leading to responsibilities for different kinds of infrastructure. Yet, scavengers realistically describe their work as "we have to take out the shit" (160109SK-G), although in theory (and from a point of view of Delhi Jal Board or the Engineering Wing of MCD), they should exclusively handle storm water and solid waste. The empirical examples had already shown that residents in JJ Clusters,

too, problematise that waste water in drains mixes with faecal matter. Moreover, in both areas, residents do construct waste water stagnation and overflow as an object of government, as seen above.

These gaps in perception illustrates how important it is to incorporate the "situated knowledge" (Loftus 2007: 56) of low ranking bureaucrats and residents into policy debates. Nobody can make scavengers believe that only Delhi Jal Board handles black water in Delhi. Residents will not allow waste water to remain invisible in governance processes. Both groups highlight the importance of acknowledging waste water – and especially black water – and of clearly assigning responsibilities for waste water management outside of the 'sewer box'. Both can contribute to formulating a policy that addresses issues of exposure (of residents as well as staff) to waste water in informal settlements in a comprehensive way that starts from ground realities. Results of this thesis thus strongly put the importance of the knowledge dimension of governance to the fore (Baud 2011; Karpouzoglou & Zimmer 2012).

2.2.2 A plurality of rules

Moreover, even if state representatives focus on those problems pointed out in policies, their practices not always refer to formal state institutions. In the JJC, for example, links of patronage and an older welfarist notion of governance seem to prevail. While in the person of the Member of Legislative Assembly, this leads to protection from demolition and infrastructural upgradation being linked to re-elections, street-level bureaucrats show lenience in imposing fines for littering public space with reference to inhabitants' poverty. Also, complaints about overflowing drains turned out to be most successful before elections, but also before religious festivals in both settlements. This shows that a variety of different institutions inform state representatives' practices: moral norms of pity for the poor, religious duties, or patronage of the rich might be more powerful than administrative rules of punishment and democratic representation. Similarly, cooperation between administration and politicians might be due to bureaucrats' fear of transfers the political representatives can initiate informally, rather than to formal governance procedures. This backs up insights by Anjaria (2009) and Bawa (2011) that noted large differences between institutions in use by different state actors in India, and generally confirms the advantages of seeing institutions as results of bricolage (Cleaver 2002).

2.2.3 Negotiating the implementation of policies

Policies are not only reinterpreted by local level staff because different ideas about what and how to govern prevail. The actual implementation is also a result of powerful negotiation

processes between staff and residents. Residents do not simply accept what state representatives do, and do not always act as "governable subjects" (Foucault 2010: 12). Rather, residents set their own political agendas, they claim services, and try to govern state representatives through their own views, understandings and technologies, as both empirical examples have shown at least for those groups which are not marginalised within the settlements. The way waste water-related policies are implemented is therefore a negotiated result.

The empirical examples also show that in informal settlements, citizens have to assume a very important part of the waste water governance. While in authorised colonies sewer lines exist and citizens do not even have to think about waste water, those living in informal colonies invest either time in cleaning by themselves or in trying to get services from the state, or otherwise spend money in getting private infrastructure and services. In negotiation with state representatives, participation of citizens in governance takes different forms: On the one hand, residents organise in Residents Welfare Associations (in the case of the UAC) because the State government requests this in the course of regularisation, and offers them a formal partnership through Bhagidari. Yet, on the other hand, residents also participate in the waste water governance through ongoing complaints, their voting behaviour, quarrels with the scavengers, or legal cases they initiate. This points at the usefulness of distinguishing between "invited" – formally legitimised, like in the case of RWAs – and "invented" – confronting, like in the case of quarrels and complaints – spaces of participation (Miraftab 2004), a distinction which has not been explored in this thesis. The results of the empirical research call for greater attention to the importance of invented spaces of participation for the outcomes of urban governance.

To sum up the section on the comparison of governmentalities and everyday governing practices, the process of everyday waste water governance – the process of decision-making and interaction that is the outcome of everybody's governing practices which are oriented along and shape the lines of acceptability drawn in governmentalities – appears as contested at all levels. Therefore, the conceptualisation of governance as a process of interaction undertaken most prominently by Kooiman (2003b) and Schimank (2007) is of high interest to understand governance from 'below' – from day-to-day negotiations – rather than, or at least in addition to a perspective on organisations and legal provisions. Yet, because of this contested character of governance, it is imperative to complement the concept by a theory on power relations such as the one Foucault's work on governmentality can offer. Only through a focus on the powerful practices of governance can analytical 'black boxes' such as the notion of lack of political will, implementation failure, or governance failure be opened up. Looking at everyday governance

practices allows identifying at what actors aim, whose (lack of) determination to bring about change has an effect, and on which discourses this determination rests. Decisions can be traced back to the framing of certain problems, such as waste water, and to different types of knowledge that dominate debates or are marginalised. A focus on the everyday state enables the analysis to understand which actors are supposed to 'implement' which policies, and how they understand and negotiate them in their local contexts. Such an approach also avoids seeing the results of negotiations as fixed, and instead acknowledges that 'implementation' takes place again and again in a multitude of relationships. The last section will now look into the effects of these contested and ongoing processes in terms of production of space.

3 Production of space: Waste waterscapes in Delhi's informal settlements

Part II, section 1.2 referred to governance as a process in which waste waterscapes are produced as material, constructed, and social spaces. What are the space-producing effects of the described waste water governance? Governing – understood as a powerful practice that attempts assigning the subject-position of the governed to the other actor – produces social relations in the waste waterscape. Social relations in turn have an effect on whose constructed waste waterscapes get more credibility and attention – and whose ideas can shape material realities. Finally, social relations lead to a situation where some practices in the production of material waste waterscapes are seen as acceptable and legitimate and are therefore encouraged, while others are perceived to be illegitimate or are even dismissed as illegal and thus actively discouraged.

3.1 Producing the social space

The social space of the waste waterscape designates the space of differential social positions that are assigned through relationships of power. From a Foucauldian perspective, governing is a powerful practice of interaction (Foucault 2007: 108) which attempts to assign to some actors the subject-position of the governed while others occupy the subject-position of the governors. Producing the social waste waterscape always takes place in an already existing social space. Yet, this space is not static, but highly dynamic, and is continuously produced and reproduced.

Introducing Foucault's concepts of governmentality proved very useful to grasp the conflict-ridden governing interactions and the contestation of subject-positions found in the informal settlements. Social positions – this shows very impressively here – are not fixed: in each interaction, negotiations start again, and outcomes are sporadic (Foucault 2010: 12).

Negotiations take place for example between residents and state representatives. Because assigning the position of the governed works to a large degree through production and circulation of knowledge about the Other, contestation of the production of social space between state actors and inhabitants takes place most significantly at the level of knowledge. Yet, technologies of government such as complaints and votes, RTI applications or legal cases are also important means through which residents attempt to conduct their political representatives' conducts, thus assuming the position of the governing actor.

Despite day-to-day dynamics, discourses and knowledge – including waste water governmentalities – can be very stable (partly going back to colonial times, as seen in part IV and V, and arguably even to earlier periods). Because governmentalities as well as knowledge of state representatives in the wards and zones depict the practices of residents in informal settlements as problematic, these groups, and especially JJC inhabitants, face strong pressure to subject themselves to the position of the governed. That residents see themselves as crucially deficient because of lack of formal education, or that residents attempt at 'improving' themselves through education, better incomes, moving out of JJC or joining the process of regularisation in the UAC shows how inhabitants accept this position and adapt their conduct to expectations voiced by state representatives.

But the social position of the governed and the governors are not the only positions that are negotiated in the waste waterscape. To recall, low social positions in societies are also assigned through allocation of 'dirty' work to certain groups (Cox 2007: 12). Empirical research shows how the cleaning of drains is such a task. Both groups at the lower end of the social ladder, scavengers and residents of informal settlements, suffer from this assignment, which is perceived as humiliating and embarrassing. Moreover, it is obvious how aggressive negotiation among those two groups aim at improving the own status by obliging the other to clean. This indicates that the tensions that ensue in society due to social inequalities lead to conflicts that are openly waged between those in unfavourable positions.

Yet, also amongst residents of informal settlements, social positions are not fixed and thus contested. In the UAC, general caste residents showed a tendency to put others down by qualifying them as 'dirty'; in the JJC, this was found with regard to Naribat which are excluded socially by other communities. In the UAC, the regularisation process has led to a further social polarisation within the colony, as the poorest, and especially daily wage labourers, cannot participate in new governance processes because of financial and time constraints. The question arises whether these populations might get further excluded in the future if regularisation leads

to rising property prices (pushing out renters), or to further expenses in terms of development charges and penalties. In this case, this group might witness further loss of social status and move to more insecure forms of informal settlements such as JJ Clusters. This would lead to a form of social homogenisation and gentrification of the UAC. In the JJC, in turn, a majority of those who are educated and economically relatively better off, plan to move out, and some have done so already. Here, the future might therefore hold further loss of status of the whole cluster, and social homogenisation of the settlement at the lowest end of the spectrum.

3.2 Producing the constructed space

Constructed waste waterscapes are produced in two main processes. First, "situated knowledge" (Loftus 2007: 56) of those living and working in the wards and interacting with waste water produce a mental waste waterscape imbued with meaning. Second, waste water knowledge that is derived from larger discourses without being bound to day-to-day practices of interaction with waste water produce constructed spaces which take the shape for instance of theoretical models, plans of urban development, and policy visions.

For both kinds of constructed waste waterscapes, it holds true that waste water is conceived of as something inherently dirty (Douglas 1988). Waste water is polluting from a ritual point of view, but also dangerous for human health, and thus has to be avoided. Waste water provokes disgust. In constructed waste waterscapes there thus exists a dichotomy between areas where waste water stagnates – areas to shun, areas to eliminate – and areas where waste water flows out and is invisible – areas to frequent, areas to produce.

Recalling the colonial era, but also discussing interviews with state representatives in the wards has shown how state representatives' (and partly local elites') truths about waste water reproduce this dichotomy in informal settlements while extending it to residents: Areas where waste water stagnates are 'dirty' because 'dirty' people live there (a discourse found with regard to the JJC) – people whose interactions with waste water, human and solid waste, as well as infrastructure is not acceptable, who have not learned the right practices from their parents, and do not teach the right practices to their children. Waste water stagnates where residents do not 'cooperate' with the state and are not deferent enough towards state representatives (a discourse found in the UAC). Therefore the aspects of the waste waterscape which are perceived as problems are, from the point of view of state representatives, discursively tied to problematic conducts of residents. As Scheduled Castes are overrepresented in Delhi's JJ Clusters, and based on statements of general caste residents in the UAC, it seems likely that these notions of

dirtiness are tied to categories of ritual impurity according to the caste system, although such a conclusion would need further investigation.

Because of the inherently different way JJ residents are seen as compared to UAC residents, the waste waterscape in JJCs is constructed as a hopeless space whose deficiencies are not likely to be remedied. Yet, as JJCs are generally seen as temporary settlements, these spaces are also not in need to be improved: It is assumed that they will simply disappear in a future 'slum-free Delhi'. In contrast, the waste waterscape of the UAC might be problematic at present, but there is optimism especially on the side of the Municipal Councillor that things will change, and waste water might start draining out. The ongoing regularisation process further encourages these expectations.

At the same time, residents' situated knowledge produces very different constructed waste waterscapes: here, waste water stagnation is associated with the neglect and disrespect of the state for the poor and uneducated, most prominently. Lack of drainage expresses lack of equality of residents vis-à-vis the state: Those whom the state considers as 'useless' are left to live in a situation of exposure to waste water. Where residents feel that they are no different from the rest of urban society (as seen above in the case of those living in brick or *pakka* streets, and of all JJ communities except the Naribat) this exposure represents in their eyes a violation of rights that citizens have. The waste waterscape is thus constructed as a space of injustice. This points to the social dimension of the waste waterscape, discussed above.

As a result of neglect, inhabitants of informal areas moreover spend time in trying to achieve waste water flow by cleaning drains by themselves. In both cases, through direct exposure as well as through own cleaning practices, residents get in contact with waste water. This contact provokes disgust and shame. The waste waterscape here comes to mean humiliation.

But constructed waste waterscapes are also produced independently of ground realities in offices of different organisations. Here, it is not material waste waterscapes which carry a meaning, but rather theoretically constructed waste waterscapes which are used by actors to model the material realities. Truths are circulated which affirm for instance that a cleaner river crucially depends on sewer networks and sewage treatment plants, or that storm water drains exclusively drain storm water – hence the name used to designate them. In Delhi, the notion of the city with 100% access to the sewer network is such a constructed waste waterscape. Because of actors' position in the social space, this construction in turn inscribes itself into the material waste waterscape through allocation of funds, and execution of engineering works. This

259

substantiates Swyngedouw's (1999) findings that waterscapes are shaped by powerful notions of modernity and development. In this constructed space, areas of waste water stagnation simply do not exist except as a temporal situation to be resolved through more funds, and more engineering works in the future.

In informal settlements, these constructions overlap with powerful images of 'slums' as spaces of risk, as discussed in part V. Here, especially JJCs are perceived to be 'dirty' spaces which need to be eliminated in order to produce the city which planners have in mind. Both constructions – the city with 100% sewer coverage, as well as 'slum-free Delhi' – have the effect of making the waste waterscape of informal settlements a temporal space in the eyes of high ranking bureaucrats and politicians, and therefore relativising the immediate problems faced by their inhabitants or street-level staff working here. Due to the social positions of residents of informal settlements discussed above, these constructed spaces are very powerful in producing the material waste waterscapes.

3.3 Producing the material space

How are these social and constructed spaces finally reflected in the material space? The material space of the waste waterscape in any given residential area has three major aspects: First, the kind of waste water which is discharged (grey water or black water); second, the infrastructure that carries waste water; and third, the movement or stagnation of waste water.

3.3.1 Black water, grey water

The question of what kind of waste water flows in storm water drains in the absence of sewer lines partly depends on governance processes. The constructed space of the 'slum' as a temporary shelter of the urban poor leads to allocation of public funds for (sometimes mobile) public toilet blocks in JJCs. Struggles between residents and their former political representative have resulted in these funds to be disbursed in the JJC chosen for research, so that a public toilet block exists here. The amount of black water in internal drains of the residential areas is therefore significantly reduced. Yet, faeces might still flow (or stagnate) in larger storm water drains such as the Najafgarh drain if these toilet blocks are not connected to sewers. That the covered drain contained (and partly backed up into the JJC) highly hazardous waste water from a nearby hospital until at least 2008, too, has to be seen as a result of governance, although not of the processes and practices discussed in this thesis.

Where no public toilet blocks are provided, like in the UAC, composition of waste water in drains largely depends on individual technology choices. Because UACs are not conceived as residential

areas of the poorest sections, access to toilets is not considered an object of government by state representatives. In the investigated case, pit latrines are connected to storm water drains. The waste waterscape here is therefore made up of black water which mixes with storm water in times of rains. This implies severe health risks to inhabitants when overflowing drains expose them to waste water directly, but also to sanitary staff or residents who clean drains manually. The constructed waste waterscapes of higher ranking bureaucrats and politicians discussed above do not acknowledge this fact, and residents, too, seem to overlook the pertaining health hazards. This makes addressing this issue very difficult.

3.3.2 Building infrastructure

Infrastructure is first and foremost dominated by negotiations at higher policy level, as individual political representatives can only influence the governance outcomes so much. Especially in Delhi, with the powerful position of the National Government through the Delhi Development Authority, but also through the Lieutenant Governor who heads the administration at State level, this dominance of higher levels is obvious. The constructed spaces produced here were described above, and result in policies on informal settlements such as eviction drives and regularisation, as well as high public investment for sewer lines. Regularisation of UACs, and the court order that led to linking the legal status to infrastructural upgradation are likely to bring sewer lines to those areas which will obtain the status of 'unauthorised-regularised' in the near future (without, however, specifying if these waste waters will be treated adequately before their release into the Yamuna river). However, certain UACs will not receive better legal status, as they fall under certain restrictions, discussed in part V, section 2.3. The "dualistic" (Gandy 2006: 7) treatment of urban space therefore prevails. JJC are in any case very unlikely to become connected to sewers; UACs will be further divided into those areas that will be regularised and those that will not.

For those settlements that are not connected to the sewer network, provision of storm water drains (that goes hand in hand with provision of streets) is crucial. In the UAC, research has shown that decisions, such as restricting how Municipal Councillors' and Members of Legislative Assembly's funds can be used here, make access to this infrastructure difficult, pointing to an unfavourable social position of local politicians especially of informal areas in larger governance processes. For those who rely on the storm water drain network for the discharge of waste water, the city-wide policy of covering major storm water drains will have major impacts. On the one hand, solid waste might not block drains as easily as before. On the other hand, once drains are silted, their cleaning will be very difficult, so that drains' volume might be reduced

261

significantly, leading to overflow. But most importantly, waste water in the 'storm water' drains will become even more invisible than it actually is already. Here too, therefore, the impact of the waste waterscape constructed in offices far away from ground realities, have an important impact on the material waste waterscape, while residents' knowledge that covered drains are difficult to clean (as seen in the JJC) is neglected.

Within this broader policy framework, however, the situation on the ground depends to a large extent on day-to-day interactions. The provision of settlements with concrete/cement-covered streets and storm water drains depends significantly on the ability of Municipal Councillors and Members of Legislative Assembly (MLA) to secure budget funds for their constituency. In the discussed case studies, the MLA of the JJ Cluster appears to have been more successful here, as all lanes in the settlement have a concrete/cement cover since several years. In the UAC, in contrast, this is not the case. This might, however, not only be related to the inability of the UAC's MLA. The ability of residents to influence their political representatives towards making an effort to secure or apply for funds is of great importance. Because not all groups of residents have similar relationships to their political representatives, these processes can lead to very differential outcomes within settlements. As the former MLA of the UAC was not Muslim, residents relate lack of infrastructure to their inability to put pressure on him. But today, too, some might be deprived of investments if allocation of funds happens for example along lines of political, class, or other affiliation, as criticised by residents of this settlement.

If negotiations anywhere in the governance process lead to the failure or refusal to build public waste water infrastructure, residents invest time and money to lay bricks in their streets, build own drains, or dig cesspools. This leads in fact to further economic burdens on those who can afford them least. Direct and indirect costs to residents are high, and not all can pay for adequate technical solutions. As a result, especially the UAC has shown to be a space with highly unequal infrastructural equipment. Moreover, residents' practices of building infrastructure are dismissed by state representatives as illegal in the case of JJCs. That this holds true at the level of building of housing, too – where public construction lags significantly behind plan – shows in the fact that both types of settlements receive the nametag of 'informal', used in this thesis for want of a better designation. These observations point to negotiation processes that powerfully delegitimise inhabitants' production of material space. Not everybody is therefore welcome to participate in the production of the built environment of the city.

3.3.3 Flow and stagnation

Finally, this leads to the question if and where waste water stagnates or flows. The answer to this question partly depends on infrastructure provision, for example if connecting drains lack, as in the case of the UAC. Yet, in contrast to infrastructure, this aspect of the material waste waterscape is subject to constant change. Waste water flow is also related to broader social spaces where due to financial reasons marginalised populations settle in marginal areas such as the former brick field, or along a drain that comes from a hospital, where drainage is problematic and exposure to (hazardous) waste waters is to be expected. The absence of solid waste management in informal settlements further hampers the outflow of waste water.

But stagnation or drainage also depend on governing interactions concerning the allocation of scavengers. These take place at municipal or zonal level on the one hand – deciding on the amount of scavengers allocated to a ward – and on negotiation processes in the wards on the other hand that affect the frequency of cleaning in particular streets. In the zones, I have discussed how in the case of the JJC, Municipal Councillors successfully pushed for an equal allocation of sanitary staff in all the wards. In the UAC, the original number of scavengers was extremely low, pointing to a favourable social position of the former Municipal Councillor (who took staff to the then newly delimited neighbouring ward) when compared to the new Councillor, as well as to a generally difficult position of UACs at municipal level. In order to achieve higher numbers, the current Councillor even depended on residents who were encouraged by her husband to file a legal case.

On the basis of the number of staff achieved in these negotiation processes, the frequency of cleaning services still depends on governing interactions between residents and their political representative. In the UAC, the beat system is not established, so that inhabitants attempt to conduct their political representative's conduct to get public services on a regular basis; in the JJC, negotiations between residents and the MLA aim at sending scavengers to certain spots more frequently. These negotiations are not necessarily successful, but the social position of residents is better especially before elections, religious festivals, or in the rainy season when more than just the democratic rules of representations are at play. Yet, even if residents are successful, waste water flow still depends on their ability to oversee scavengers' work or negotiate successfully with sanitary staff. Here, the conflicts about the respective social position, mentioned above, decide by whom drainage finally has to be secured.

If residents are not successful in governing politicians or street-level bureaucrats, their own efforts produce patterns of flow and stagnation. In this case, solid waste-related practices, and the time inhabitants are able or willing to invest in cleaning drains by themselves are essential to

secure flow. Governing interactions between residents – not discussed in this thesis – come into focus in these cases. Cleaning drains leads to high exposure of residents to waste water, and the direct contact with waste water further reinforces their low social position. To avoid both, residents' struggles in the waste waterscape that were at the centre of this study carry on.

IX CONCLUSION

It is time to conclude this analysis of the waste waterscapes in Delhi's informal settlements. This last chapter will summarise the main results of the investigation. Finally, future challenges for research will be formulated in the outlook.

1 Summary

In the first part of this thesis, the waste waterscape was introduced as the visible part of the earth's surface which is made up of waste water through the encounter with waste water masses on Delhi's streets in September 2010. The following parts of this thesis have given the reader more opportunities of experiencing waste water in residential areas and houses, and in the everyday lives of residents of informal settlements (although not first-hand, but rather second- and most of the time-third hand). The introduction also aimed at problematising an urban 'mosaic' of residential areas with highly diverse levels of public service provision. Parts IV-VII of the thesis have engaged with this perspective through a discussion of the different governmentalities and everyday governing practices found in JJ Clusters and Unauthorised Colonies on the one hand, and within these settlements on the other hand. Against the background of these analyses, the discussion turned full circle to present the production of waste waterscapes as social, constructed, and material spaces.

For the purpose of this investigation, the production of waste waterscapes has been conceptualised in part II as an effect of governance. The concept of everyday governance has been developed by integrating insights on the "everyday state" (Fuller & Bénéï 2001) into the governance debate. Further, in order to address power relations in governance interactions, Foucault's (2007; 2010) work on governmentality and governmental power have been introduced. From this perspective, everyday governance has been defined as the process of decision-making and interaction that is the outcome of everybody's governing practices which are oriented along and in turn shape governmentalities. This approach has shown to be very fruitful in order to understand the relationships between the "multitude of elements" (Foucault 1997: 57) that produce the waste waterscape.

1.1 Revisiting question A: What are the governmentalities currently at work in Delhi?

Investigating *waste water governmentalities* in Delhi, the findings point to the fact that waste water is framed within three different debates internationally (water management, public

health, and sanitation), and within two debates in Delhi (sanitation/health and pollution of the Yamuna river). No agency is formally responsible for municipal waste water in storm water drains, found in both research areas. Waste water is supposed to drain through sewer lines, under the jurisdiction of Delhi Jal Board; storm water drains are managed by several agencies who do not deal with municipal waste water officially.

Nevertheless, urban sanitation has gained new attention due to India's raising international ambitions and the interest in attracting Foreign Direct Investment. This economic impetus leads to a situation where municipalities are put under considerable pressure to perform better. Informal settlements that are not connected to the sewer line are therefore targeted for improvement. Improvement is first and foremost to be achieved through behaviour change of their residents which face processes of "Othering" (Spivak 1985: 252).

Yet, governmentalities regarding both investigated types of informal settlements, JJ Clusters (JJCs) and Unauthorised Colonies (UACs), have shown considerable differences. JJCs are more and more excluded from the city and its governance processes, and residents face regimes of discipline. UACs, in contrast, are in the process of getting regularised, and their residents are asked to organise in Residents Welfare Associations, addressed as 'partners in governance' by the State government.

1.2 Revisiting question B: What are the practices of everyday waste water governance found in informal settlements?

This affects state representatives' *everyday governing practices*, so that both types of settlements have shown in the empirical chapters to be very different, too. The JJ Cluster is governed by street-level bureaucrats and local political representatives through a coupling of a regime of agency and of discipline. The overflow problem is absent from state representatives' accounts. When waste water-related problems are addressed, actors discursively construct the impossibility of the state to solve any waste water and cleanliness issue. Statements highlight residents' perceived deficiencies – their lack of discipline, of education, and of respect for the power of the state. Therefore, governing practices suggest that residents have the responsibility to become more disciplined in order to resolve waste water-related problems.

In the Unauthorised Colony, a regime of agency is combined with a regime of citizenship. Both are used to address residents' solid waste-related practices, but more importantly, their conduct vis-à-vis state representatives. In the eyes of state representatives, waste water-related problems can be solved if residents 'cooperate'. This includes disposing of solid waste in a different way, but especially concerns support of residents to get higher numbers of sanitary

staff in the ward. Therefore, state representatives attempt to create a specific understanding in citizens of their duties and responsibilities, and encourage them to see themselves as active partners in the governance process.

Yet, residents are not passive subjects of state representatives' governing practices. They rather try to govern street-level bureaucrats and local political representatives as well. Contestations most frequently take place at the level of knowledge, as inhabitants put forward their own explanations for waste water-related problems and specifically reject discourses that depict them as deficient. But the picture is not homogeneous.

In the JJ Cluster, a majority, but not all residents, try to put waste water on the political agenda. Waste water stagnation and overflowing drains are a problem for those living in lower lying areas, while those on higher grounds do not face many inconveniences. Most illiterate inhabitants trace problems back to the state's negligence, and especially the practices of scavengers. The majority of the local elite, in contrast, considers cleanliness to be the responsibility of residents themselves. Against this background, inhabitants develop four strategies. The most vulnerable, the Naribat community, have experienced the limits of governing practices and resign, or attempt to solve problems through direct (and sometimes aggressive) negotiations with scavengers. The group of illiterate or semi-literate, but less marginalised residents struggles to get better services through the technologies of the complaint and the vote. The small fraction of the local elite who takes part in waste water governance struggles while employing other means such as RTI applications. Finally, those among the local elite who chose the path of individual improvement attempt to move out of the cluster.

In the Unauthorised Colony, all residents perceive exposure to waste water as problematic, although those who live in *kaccha* streets or low houses are most affected. State practices are most prominently blamed for this situation. Three major strategies were identified here: Residents of *kaccha* streets resign and limit their attempts at governing the state to a minimum because they do not want to waste valuable time when positive outcomes are very unlikely. In brick and *pakka* streets, residents struggle for better service provision through complaints and voting behaviour. Finally, members of Residents Welfare Associations address higher levels of governance to struggle for infrastructure and sanitary staff.

1.3 Revisiting question C: What are the commonalities and differences in everyday practices of waste water governance in JJ Clusters and Unauthorised Colonies?

The discussion allowed a thorough comparison of the empirical findings. Most importantly, it turns out that due to the institutionalisation of inequality in practices of state actors, not all residents of informal settlements take part in governance. Also, participating in governance requires time, a resource that especially daily wage labourers cannot invest if positive results are too unlikely. Particularly the power of residents over the bureaucracy is rather small, as it is indirect and needs mediation by the political representative. Comparing the governing practices of residents showed that social inequalities lead to conflicts amongst those at the lowest social positions: JJ Cluster residents and scavengers.

A major difference between the JJC and the UAC was identified in the relationship between residents and their local political representative. In the UAC, the ward has opened up as an arena for negotiations since the delimitation process reduced the number of voters per ward significantly. The JJC, in contrast, has not benefitted because governance in this case is taken over by the Member of Legislative Assembly, the political representative at State level. In general, residents of informal settlements face strong pressure to subject themselves to governmental power. Because the message is that they cannot remain the way they are if they want to be included in processes of governance, inhabitants give importance to education, and many send their children to school. Moving out of the JJ Cluster, or participation in the regularisation drive of UACs are other forms of acting as 'governable subjects'.

At the same time, the comparison allowed recognising that in no case, residents of informal settlements are included into governance processes by state actors without fulfilling certain pre-conditions. Especially in the JJ Cluster, inclusion is hampered by a discourse that is followed by state representatives but also by parts of the local elite who hold that 'slums' are dirty places because 'dirty' people live in them. This represents a strong mechanism of social exclusion.

1.4 Revisiting question D: What is the relationship between governmentalities and everyday governing practices in informal settlements?

The discussion also addressed the relationship between governmentalities on the one hand and everyday governing practices on the other. The results can be summed up as follows:

First, governing practices are not homogeneous, neither at the level of residents of informal settlements, nor between different state representatives or with regard to different types of informal settlements. This heterogeneity might give governance processes a messy appearance.

As policy implementation is the negotiated outcome of these practices, the notion of 'implementation failure' is a misleading representation of governance.

Second, on the side of the state, waste water is in general 'invisible' and is integrated into other, more powerful debates. While at higher levels, sanitation and river pollution are the objects in the focus of government, state representatives in the ward govern solid waste and 'dirtiness'. This stands in stark contrast to the problematisations by residents who are negatively affected by exposure to waste water. Differences point on the one hand to the fact that objects of government are redefined on the ground. On the other hand they indicate the extremely small influence inhabitants (and to a lesser degree street-level bureaucrats) have on problem framing in urban governance. The dimension of knowledge integration has turned out to be of major importance in order to address the issue of inclusive governance.

Third, comparisons showed that rather unspecific educational programmes at national and municipal level which aim at inducing 'behaviour change' of the residents are translated effectively on the ground, where residents are 'taught' in daily interactions that they need to change their practices. While residents counter these attempts through discourses on the state's unequal approach to its citizens, results also unveiled the strong pressure inhabitants are subjected to.

1.5 Revisiting the main research question: How are the waste waterscapes of Delhi's informal settlements produced?

Governance processes lead to the production of the waste waterscape as a material, a constructed and a social space. These spaces were discussed in the last sections of part VIII.

The *social* space of the waste waterscape is characterised by constant negotiation processes amongst state representatives and residents to claim the subject-positions of governors and governed. Residents face strong pressure to subject themselves to governmental power through discourses that present them as fundamentally deficient. Moreover, the constant exposure to waste water that residents face means that inhabitants of informal settlements are assigned the low position associated with a 'dirty' living environment and the 'dirty' work of having to clean the drains.

The *constructed* waste waterscapes of the JJ Cluster therefore is, for the state representatives on the ground, a space of dirt which is inhabited by 'dirty' people; in the UAC, its problems were linked to residents' lack of education and cooperation. Despite these negative assessments, the UAC still represents a space of hope for the Municipal Councillor at least, while the JJC is a hopeless space in the eyes of state representatives. Because JJCs are supposed to disappear in

the future, however, they are at the same time temporal spaces. Residents, in contrast, perceive the 'dirtiness' of the waste waterscape as an expression of the state's neglect of the poor and lesser educated sections, of disrespect and injustice. Constant contact with waste water is moreover humiliating. State representatives in higher offices, again, construct the waste waterscape of informal settlements as a temporal space which will disappear once the extension of the sewer network is realised.

The *material* space in informal settlements is characterised most prominently by the absence of sewer lines. In this situation, inhabitants face a difficult task in negotiating for infrastructure. Moreover, self-help of residents is costly, and on top of that largely dismissed as illegitimate. Residents' spontaneous participation in the production of the material space of the city is thus not welcome. For UACs, however, the state has devised a formal procedure of desired kinds of participation through the regularisation process. The distinction between "invited" spaces of participation where citizens' practices are encouraged, and "invented" spaces of participation where practices are labelled 'informal' or even 'illegal' seems to be crucial here (Miraftab 2004). As long as sewer lines are absent, the question of waste water stagnation or outflow depends on scavenging services. The supposedly rule-dependent, but in fact negotiated and dynamic allocation process of sanitary staff to the wards showed to be important here. To influence frequency and quality of the service, finally, interactions in the wards are central. Democratic rules of representation alone, however, have shown to be hardly enough for residents in order to achieve the desired outcome. Yet, even if negotiations do not fail, residents and scavengers are in conflict over carrying out cleaning in a specific way. The last option for inhabitants consists in either tolerating overflowing drains or own cleaning. Both mean to put up with exposure to waste water, perceived as 'dirty' and possibly ritually impure.

2 Outlook: Future directions of research

This thesis has attempted to undertake an encompassing analysis of the waste water governance in Delhi's informal settlements. While offering answers to the research question how the waste waterscapes here are produced, the presented results point to new queries. Most importantly, research has shown that governing practices are not only at work between residents on the one hand and state representatives on the other hand.

First, further investigations should be directed at better understanding the interactions and negotiation processes that take place between neighbours and within households, as well as between state representatives. Because waste water is a bone of contention between residents, and explanations partly point out the practices of neighbours, deemed problematic, residents

attempt at conducting each others' conduct, too. The uneven social relations that have become apparent through the empirical research indicate that investigating negotiation processes at the level of neighbourhoods would certainly bring about interesting insights, and could contribute among others to better understand the role of caste in Delhi's governance. Choosing a different conceptual approach might also enable to grasp processes of collective action much better. Certainly, studies at household level would reveal interesting process of interactions and allow delving into the gender dimension of waste water governance.

Second, amongst state representatives, the relationship between administration and political representatives has cropped up in the empirical parts as politicians have the power to suggest the transfer of street-level bureaucrats. These relationships could be fruitfully studied in much more detail. Moreover, the investigation could be extended to higher levels of governance. This, in turn, would allow understanding waste water-related policies as the result of negotiation processes. The everyday state is not only the state in the wards – the concept applies to all levels and ranks. Therefore, policy-making comes into the focus as a contested arena. Access to these data through empirical research would, however, probably be very problematic.

Finally, the analysis of the production of a *space* like the waste waterscape in Delhi's informal settlements points to a last, highly interesting field of investigation. Social relations of power have become apparent which lead to the assumption that the waste waterscapes in formal settlements are produced through yet very different practices of governing. Therefore, a much larger research project could determine the relationship of these different waste waterscapes, and, in short, question the *place* each of these occupy in the larger space of the city. Studying urban diversity through an even broader approach would then be able to look into the geographical dimension of waste water governance even more poignantly. Insights like these could then show even more clearly a way towards integrating different places and their residents in a more equal way into the space of the city. They finally could – through the production of a constructed urban space that advocates everybody's "right to the city" (Lefebvre 1996; Harvey 2008) without preconditions – contribute to a production of space that is truly democratic and inclusive.

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APPENDICES

I) Interview partners (state representatives)

1) Interview partners among local politicians and street-level bureaucrats

a) JJ Cluster

	Interview Partner	Interview-Code
Politicians	Member of Legislative Assembly (MLA) (4 interviews)	-MLA
	Wife of the MLA (1 interview)	-MLA-W
MCD Department of Environment Management Services (DEMS)	Scavenger (1 group interview, 1 individual interview)	-SK (individual) -SK-G (group)
	MATS (1 group interview)	-MATS
	Sanitary Guide (2 interviews with different persons)	-SG
	Assistant Sanitary Inspector (1 interview)	-ASI
	Sanitary Inspector (2 interviews)	-SI
	Sanitary Superintendent & Chief Sanitary Inspector West Zone (1 joined interview)	-SS -CSI
	Sanitary Superintendent (1 interview)	-SS

b) Unauthorised Colony

	Interview Partner	Code
Politicians	Former Member of Legislative Assembly (MLA) (1 interview)	-MLA
	Municipal Councillor (MC) (1 interview)	SH-MC
	Husband of the MC (4 interviews)	MA-MC
Municipal Corporation of Delhi (MCD)	MCD Deputy Commissioner Shahadra North Zone (1 interview)	-DC
MCD Department of	Scavenger (2 group interviews)	-SK-G

Environment Management Services (DEMS)		
	MATS (2 interviews)	-MATS
	Assistant Sanitary Inspector (1 interview)	-ASI
	Sanitary Superintendent Shahadra North Zone (1 interview)	-SS

2) Interview partners in the higher bureaucracy

a) Municipal Corporation of Delhi

	Interview Partner	Code
MCD Slum & JJ Department	Director Planning and Monitoring (2 interviews)	-SLUM
	Superintending Engineer Circle III (1 interview)	-SLUM
	Executive Engineer DD I (1 interview)	-SLUM
MCD DEMS	Director in Charge (1 telephone interview)	-DEMS
	Deputy Commissioner (1 interview)	-DEMS
	Superintendent Engineer (2 interviews)	-DEMS
	Sanitary Superintendent & retired Chief Sanitary Inspector Karol Bagh Zone (1 interview)	-SS -CSI
MCD Engineering Wing	Superintendent Engineer West Zone (1 interview)	-ENG
MCD Water-borne Diseases Department	Malaria Inspector (1 short interview)	-MCD

b) Government of National Capital Territory of Delhi

	Interview Partner	Code
Department of Irrigation and	Executing Engineer (1 interview)	-EE

Flood Control		
	Assistant Engineer (1 interview)	-AE
	Accounts Officer (1 interview)	-AO
Department of Urban Development	anonymous (1 interview)	
Delhi Jal Board	Chief Engineer Project I (2 interviews)	-DJB
	Chief Engineer Project I and Project II (1 joint interview)	-DJB
	Junior Engineer (1 interview)	-JE
	Inspector (1 interview)	-I

c) Government of India

	Interview Partner	Code
Ministry of Urban Development	Director (1 interview)	-UD

II) Participatory Urban Appraisal

1) Rankings

In rankings, interview partner were first asked to list general or waste water-related problems in their neighbourhood. These problems were sketched or written on a piece of paper each, depending if the person was literate or not. These pieces of paper with drawings or problems were then handed over to the interview partner. They were asked to rank them by placing them in front of them, with the problem they found most disturbing on the top, and the problem they gave least importance to on the bottom.

2) Balloons and Stones

In the balloons and stones exercise (Kumar 2002: 275), a conversation was initiated with interview partners regarding waste water-related problems in the settlement. They were then introduced to the exercise. Balloons and stones were drawn on different pieces of paper, indicating factors that would alleviate the situation, and factors that would further aggravate problems or inhibit solutions. Residents would then discuss possible alleviating factors or write them on the balloon papers; similarly they would discuss or write aggravating factors on the stone papers. Then, participants ranked 'balloon' and 'stones'-factors according to the importance given to them.

3) Daily Activity Schedule

In the daily activity schedule (Kumar 2002: 158), residents were asked to recount how a usual day in their lives looked like. At what time did they get up? What did they do next? These questions were followed up until 24 hours had been covered. The named activities were drawn or written into a pie diagramme either by participants or by myself. This diagramme was then discussed with interview partners to understand in which activities water was used, and which volumes were necessary. Because mostly women were responsible for reproductive work in the settlement such as cooking, washing clothes, or doing the dishes, these exercises were exclusively done with female inhabitants.

4) Participatory Mapping

In the mapping exercise, residents were asked to draw a map of their settlement.

II) Participatory Urban Appraisal (PUA): conducted exercises

PUA Exercise	JJ Cluster	Unauthorised Colony
General problem ranking	2	3
Ranking of waste water-related problems	14	6
Balloons and stones	4	4
Daily activity schedule	8	3
Participatory Mapping	3	-

IV) Social Survey

1) JJ Cluster
a) Northern-most street from East to West (higher area)

1	no data
2	no data
3	old shoes repair & deal
4	old shoes repair & deal
5	tailor
6	maid (widow)
7	electrician, producing plastic parts at home for factory
8	hawker (new clothes)
9	factory labourer
10	no data
11	daily wage worker (factory)
12	shop owner, informal leader
13	shop owner
14	no data
15	2 factory labourers
16	fish stall, producing plastic parts at home for factory
17	tailor
18	dealer in grain
19	old shoes repair & deal
20	2 factory labourers
21	factory labourer
22	2 factory labourers
23	old shoes repair & deal
24	old shoes repair & deal
25	old shoes repair & deal
26	old shoes repair & deal
27	old shoes repair & deal
28	no data
29	no data
30	old shoes repair & deal
31	cycle rikshaw driver

b) Southern-most houses next to the main covered drain, from East to West (lower area)
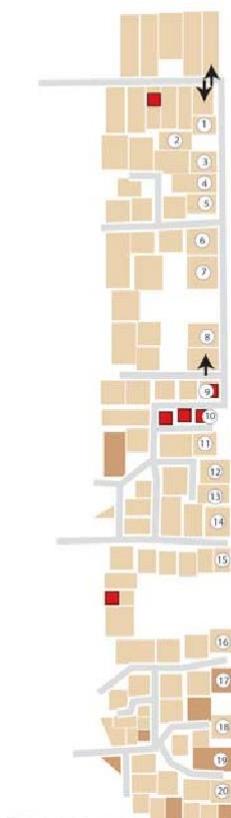
1	hawker plastic utensils, daughter deals with hash
2	hawker TV cover
3	hawker TV cover
4	no data
5	hawker old clothes
6	husband abandoned family, wife collects garbage, her parents beg
7	collecting money in the name of god Shani
8	collecting garbage
9	tea shop owner
10	vegetable shop owner
11	no data
12	hawker old clothes
13	hawker old clothes, white washer; wife: maid
14	hawker old clothes; wife: maid
15	no data
16	hawker old clothes; wife: begging
17	unskilled labourer in factory; wife: maid
18	unskilled labourer in factory; three women of the household: maids
19	no data
20	daily wage labourer; wife: maid

2) Unauthorised Colony
a) Street No. 17 *(kaccha)*

1	widow (on rent)
2	tailor (sewing flags)
3	tailor (sewing flags)
4	construction labourer (daily wage)
5	tailor (sewing flags)
6	middleman for flag trade & 1 renter (no data)
7	husband works in Saudi Arabia
8	mecanic
9	handicrafts business
10	tailor (sewing flags)
11	tailor (sewing flags)
12	auto rikshaw driver
13	construction labourer (daily wage), scrap dealer
14	selling bangles
15	construction labourer (daily wage)
16	tailor & 1 renter (construction labourer on daily wage)
17	factory labourer (gents' purses)
18	tailor
19	carpenter
20	three wheel driver
21	construction labourer (daily wage)
22	construction labourer (daily wage)
23	tailor (on rent)
24	construction labourer (daily wage)
25	cycle rikshaw driver % 1 renter (construction labourer on daily wage)
26	construction labourer (daily wage)
27	carpenter
28	carpenter

➤ Entry from street No. 18

b) Street No. 10 (brick)
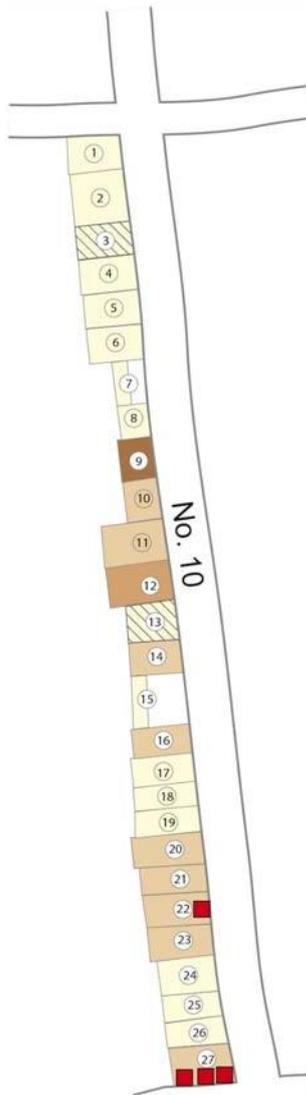
1	carpenter
2	carpenter
3	no data
4	tailor
5	old clothes dealer
6	dyer
7	printing press owner
8	carpenter
9	(under construction)
10	police inspector
11	TV wire dealer
12	scrap business
13	carpenter
14	scrap business
15	black smith
16	(under construction)
17	carpenter
18	carpenter
19	factory labourer (plastics) & 1 renter (helmet dealer)
20	dyer; wife and sister fit parts of MCV boxes
21	carpenter, painter of signboards
22	shop owner
23	no data
24	carpenter
25	black smith & 1 renter (carpenter on daily wage)
26	renters (no data)
27	chef and houseowner (income from shop rent)

c) Street No. 11 (*pakka*)
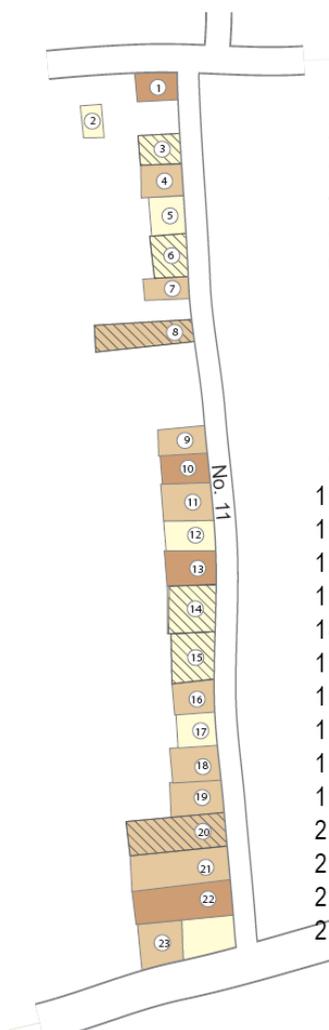
1	auto rikshaw driver & 2 renters (auto rikshaw driver, tailor)
2	construction labourer (daily wage)
3	white washer
4	white washer
5	construction labourer (daily wage)
6	tailor (on rent)
7	police man, wife is teacher in government school
8	purses and handbags workshop
9	scrap business, taxi driver
10	daily wage labourer in food catering
11	owner of clothes godown
12	minibus driver, women do embroidery
13	business with thread & 1 renter (construction labourer on daily wage)
14	supplier of barber tools
15	scrap business
16	export business of jackets
17	collection and dismantling of computer scrap
18	property dealer
19	collection and dismantling of computer scrap
20	owner of vehicle workshop, owner of neighbouring house
21	black smith (on rent)
22	black smith
23	shop keeper

V) Result of the participatory mapping (051108AJ)

The interview partner distinguished between Muslims (black circles), residents who came from Uttar Pradesh (UP) (red circles), Naribat (yellow crosses), Gujaratis (red crosses), and Rajasthanis (black crosses). During the drawing, a heated, but humorous discussion broke out between him and his friend over the number of members of the UP community. The one who drew the map came from UP himself, and his Rajasthani friend accused him of grossly overrepresenting the number of UP residents in the cluster. Because I met only one other interview partner from UP during the course of my fieldwork, I decided to leave this group out. The areas which he signed with the symbol for UP residents rather turned out to be a highly heterogeneous neighbourhood.