

Chapter 6

Visualising Informal Repair: Exploring Photographic ‘Routines’ in Ethnographic Methodology

Neha Mungekar^{a,b}

^a*Dutch Research Institute for Transitions (DRIFT), Erasmus University Rotterdam, Rotterdam, Netherlands*

^b*Erasmus School of Social and Behavioural Sciences (ESSB), Erasmus University Rotterdam, Netherlands*

Abstract

In this chapter, I illustrate the use of visual ethnography to uncover the nuanced role of informal processes and structures, henceforth referred to as informality, in navigating the complex challenges of water governance in India through enabling repair. By repair, I refer to the ability of informality to act as a transformative approach, adept at navigating and addressing the multifaceted governance challenges faced by Indian cities. The mapping of informality in repair within urban water governance uncovered three dilemmas: 1) the difficulty of documenting transient oral narratives, 2) the discrepancies between verbal accounts and observed practices and 3) ethical concerns associated with documenting illicit activities. To address these dilemmas, I coupled ethnographic approaches with photographic methods. Ethnography provided reflection, clarity and a documented record, although it introduced a delay in capturing observations. Photographic methods compensated for this by offering an immediate visual record and facilitating live analysis alongside textual notes. I outline five routines of conducting visual ethnography, applied in the cities of Bhopal and Bhuj, to shed light on how various actors enact informality in addressing the gaps

Informality in Policymaking: Weaving the Threads of Everyday Policy Work, 97–112



Copyright © 2025 by Neha Mungekar. Published under exclusive licence by Emerald Publishing Limited. These works are published under the Creative Commons

Attribution (CC BY 4.0) licence. Anyone may reproduce, distribute, translate and create derivative works of these works (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this licence may be seen at <http://creativecommons.org/licenses/by/4.0/legalcode>
doi:[10.1108/978-1-83797-280-720241007](https://doi.org/10.1108/978-1-83797-280-720241007)

within urban water governance. These routines served as a photographic praxis to critically engage with both human and non-human actors in these locales. Through these routines, I illustrate how informality results in two types of repairs: reactive and reparative. Reactive repair serves as a temporary measure to restore the status quo. In contrast, reparative repair aims at fostering long-term change, illustrating the dynamic ways in which informality contributes to repairing the intricacies of water governance in India.

Keywords: visual ethnography; methodology; informality; water governance; India; repair

1. Introduction

In the context of navigating India's complex water governance challenges (Narain, 2000), this chapter presents a methodology that aims to shed light on the underexplored role of informal processes and structures, henceforth referred to as *informality*, in *repairing* the gaps and hindrances in urban water governance in the cities of Bhopal and Bhuj. In this context, repair goes beyond mere technical fixes; it is studied as a transformative approach adept at tackling governance challenges. Despite its associated drawbacks, informality emerges as a critical element in bridging governance gaps, offering nuanced perspectives on the interconnectedness and relationships among actors within this sector (Ahlers et al., 2014; Roy, 2005). Current research methodologies often need to encapsulate these nuanced perspectives (Goodman & Marshall, 2018), indicating the need for an innovative, cross-disciplinary approach.

To fill this research gap, the heart of this chapter lies in a novel methodological proposition: the use of visual ethnography to illuminate the informal practices of water governance. This method navigates moral and methodological challenges through five photographic *routines*. The routines served as photographic praxis to critically engage with the human and non-human actors in Bhopal and Bhuj between September 2021 and January 2022.

I begin with a vignette from Bhopal, focusing on the informal practices of overhead water tank (OHT) supervisor Ram Singh*. This case illustrates visual ethnography's role in uncovering obscured informal practices within complex governance structures. Subsequent sections delve into the concept of informality, exploring its potential as a means for repairing governance structures and processes. Insights gleaned through photographic routines in Bhopal and Bhuj follow this discussion. This chapter concludes with an examination of how visual methods can complement textual analysis and reflections on how my positionality influenced the research trajectory.

2. Why Did Ram Singh Shush Farhan?

In September 2021, during my fieldwork in Bhopal, India, I stepped into the world of Ram Singh, a municipal field supervisor responsible for overseeing the

water supply of his assigned zone. His multifaceted duties encompassed monitoring the OHT, maintaining the pipe network and ensuring smooth water delivery to the local citizens.

As part of my study, I conducted interviews with local residents, gathering oral testimonials about their water supply experiences. Repeated narratives of dissatisfaction with the supply emerged due to various factors like inadequate provision, substandard water quality and erratic pressure. Interestingly, I observed their illicit measures to these predicaments, which mostly involved tinkering with the physical water infrastructure themselves. This resourcefulness sparked my interest in Singh's critical role at the OHT, a pivotal node in the water supply network. I was intrigued: how was he dealing with these challenges? What strategies did he employ to ensure a consistent water supply amid scarcity?

As we talked, Singh projected an image of a diligent bureaucrat, committed to the rule book, seemingly untouched by the torrent of obstacles that accompanied water shortages. His responses danced around the challenges, skirting away from acknowledging the issues that his peers openly accepted, e.g. pressure from citizens, biased prioritisation and lack of human and financial competencies. Farhan*, a member of a local political party, present during our conversation, possibly influenced Singh's responses. Yet, Singh's steadfast denial of these challenges left me baffled. Despite my persistent questioning, Singh maintained his silence, amplifying my curiosity about the untold strategies he might have in place.

Unexpectedly, Farhan stepped in, recounting episodes of Singh's benevolence when water was dispensed free of charge to citizens. This revelation, standing in stark contradiction to Singh's narrative, took us both by surprise. Caught off guard, Singh swiftly shushed Farhan, conveying a subtle message that certain information should remain concealed from prying ears. The incident further propelled my curiosity about his underlying strategies, making me linger longer.

Post-interview, I observed Singh, who was perched under the looming water tank, engrossed in his newspaper while a few locals gradually joined him for their evening chat. It struck me how effortlessly Singh blended into the local landscape, sharing laughs and conversations with the passers-by (see Figure 6.1). This realisation became apparent when observing through the camera of my smartphone, focusing on the exchange between Singh and the residents. As an observer, the smartphone's screen served as a visual frame which excluded distractions and allowed me to focus on the exchanges between Singh and the residents. I began to comprehend the significance of these personal relationships in Singh's public service.

I came to the realisation that Singh was trying to suppress any mention of these personal relationships, aiming to project an impartial image of himself. While not necessarily illegal, the subtle revelation of these relationships and Farhan's unintentional disclosure indicated that admitting to the governance challenges would force him to reveal his informal strategies. This could jeopardise his position and potentially lead to his relocation to a different zone, uprooting the network he had painstakingly built over the years.

As I continued to observe and document, it emerged that Singh's team, primarily comprising migrant plumbers, worked in a hostile environment riddled with casteism, threats and intimidation. Singh's personal alliances within the community acted as a protective shield, facilitating a smoother service delivery.



Figure 6.1. Left - The physical infrastructure - overhead water tank; Right - Social infrastructure that enabled access to the resource - in-person relationships. (30/9/2021)

He cleverly leveraged relationships to enable provision (albeit unequally) while ensuring a safety net for his subordinates against local prejudice. Yet, these strategies were deliberately kept under wraps, protecting the integrity of his job and his network. However, these strategies remained hidden, safeguarding Singh's position and his informal ways of water management.

Thus, the incorporation of photographic methods in studying people's cases became an integral part of my ethnographic journey, providing me with a deeper understanding of the interplay between formality, informality and the resilience of urban life. Unearthing the intricacies of urban Indian water management necessitates understanding these clandestine practices. Traditional research methods alone, like semi-structured interviews and desk study, often miss the nuances. Consequently, I propose a combined approach, integrating traditional methods with visual ethnography to unmask the instrumental role of repair in informal water governance.

3. On Performing Different Forms of Repair Through Informal Practices

Actors like Ram Singh often face the challenge of circumnavigating formal procedures to amend service shortfalls. By building networks with key citizens,

Singh reduced potential hostility towards his subordinates, thus ensuring smoother maintenance operations. His manoeuvres within the formal water supply system, coupled with informal water distribution, effectively bridged the inherent gaps in these formal protocols. This was evident when residents grew frustrated with slow services or the use of non-local labour. In response, these personal networks became crucial, fostering understanding, patience and allowing for unhindered work.

Moreover, formal arrangements often involve lengthy bureaucratic processes. However, through nurturing informal networks, individuals like Singh can distribute risks and gather benefits, enhancing service provision through reparative practices. Here, the concept of repair goes beyond technical fixes: it signifies a governing approach to managing transitions. I delve into the concept of 'repair', recognised in the literature as a transformative mode adept at addressing complex governance challenges faced by Indian cities through informal mechanisms. This exploration underscores the need to view the informal as an integral component of urban governance rather than an anomaly.

The literature on repair circumscribes two perspectives. The first conceptualises repair as a reactionary process, striving to maintain the existing state and restore its original properties (Henke, 2017). Singh's use of social capital to address challenges in water supply exemplifies this. The alternate perspective positions repair as a sensibility that guides reparation as a mode of transition (Bhan, 2019). This viewpoint advocates long-term, community-focused approaches to rectify past colonial policies, ensuring equitable service provision. It emphasises collective memory, incremental change and iterative processes (Bhan, 2019; Broto et al., 2021; Perry, 2020). These two facets of repair – reactive and reparative – are not opposed but exist on a spectrum, functioning in hybrid forms based on context.

Reactive repair and reparation require mobilising personal networks, collective memory and local knowledge. Regional languages like Hindi proffer nuanced understandings to expand the meaning of repair with terms such as *Marammat* (returning to the original), *Rafu karna* (bolstering the old with the new), *Dosh rahit* (emphasising faultless repair) and *Sudharna* (seeking betterment for the future). These vocabularies provide a heuristic map for multifaceted repair approaches within given constraints and opportunities through informal means.

Informality, therefore, is pivotal in steering transformative repair processes and structures, especially in managing contested resources. Drawing from the works of Roy (2005), McFarlane (2012) and Ahlers et al. (2014), I align with Roy's (2005) understanding of urban informality as an organising logic – a system of codes governing repair processes. This logic is pertinent in a deregulated state where formal rules exist but are negotiated based on contextual conditions (Roy, 2005). Here, informal governance processes and structures do not operate in isolation or in the absence of the state but are mutually co-constitutive with formality, helping bridge gaps in service delivery (Ahlers et al., 2014; McFarlane, 2012).

The structure of informal governance resembles an ephemeral web that mobilises services as needed (Jaglin, 2014), coalescing when necessary and allocating tasks into manageable units based on availability, capacity and resources, often circumventing formal regulations (Ahlers et al., 2014). With the formation of new coalitions, shared understanding and vocabulary materialise to enable service

delivery. These relationships, characterised by their temporary and flexible nature, demonstrate resilience to shocks and adaptability to changing circumstances (Ahlers et al., 2014).

I analyse how informality's organising logic plays a role in addressing governance challenges such as mitigating departmentalisation, extending capacities in resource-deficient situations or nudging behavioural change. Ram Singh's actions demonstrate this adaptation as he negotiates with users to ease access to infrastructure. He confronts challenges, employing emotional intelligence by empathising with his subordinate staff's needs, bridging resource provision gaps and risking his job to meet citizen demands, thus identifying repair pathways within a deregulated context. These diverse repair pathways, laden with obscure narratives and nebulous interpretations, make their understanding a complex task, thus necessitating the development of a non-intrusive methodology to unravel how the informal processes and structures enable repair.

Hence, my research aimed to reveal the intricate ways in which actors perform informality to facilitate repair. I describe the actions as performances due to their embodied meaning and vulnerability to situational contingencies, which prompt individuals to address governance barriers hindering water service provision. This chapter emphasises the centrality of ethnographic methodology in discerning these equivocal and ambivalent practices, enabling an understanding of repair in its various forms in Bhopal and Bhuj.

4. On Capturing and Making Visual Narratives About the Role of Informality in Repair

Based on ethnographic scholarship, I outline a methodological framework to capture the varied and informal manifestations of repair. An ethnographic sensibility provides an epistemological framework for 'experiencing, interpreting, and representing' (Pink, 2013, p. 34) the multifarious performances of informal practices reflexively shaped through social norms and beliefs (Gobo, 2008). I employed textual and photographic methods to explore how repair manifests through informal means. I examine repair through personal networks, local knowledge and grey practices – a realm between legality and illegality, where certain practices are accepted but not necessarily supported by formal codes.

In my investigation of informal water governance in Bhopal and Bhuj, I conducted 64 interviews along with 10 separate observations with users, government authorities, practitioners, non-governmental organisation (NGO) actors and academics. Complementing the interviews, I made *thick* descriptions (Kharel, 2015) to cross-reference participant accounts and unravel the intricate web of informal relations. The ethnographic notes captured the practical execution of formal mandates, highlighting the actual roles of actors and identifying gaps between their actions and prescribed responsibilities. By examining the decision chain of actors at different hierarchical levels, I obtained insights regarding their vulnerabilities and intentions in adopting informal practices. This holistic approach deepened my understanding of the informal management of water resources.

However, investigating repair practices posed three dilemmas:

- i. Capturing and accurately representing transient oral accounts are often abstract and challenging to document.
- ii. Addressing discrepancies between respondents' oral accounts and observed actions on the ground, resulting from overlooked mundane actions or intentional concealment of facts related to illicit activities.
- iii. The moral dilemma of documenting illicit activities, questioning the researcher's responsibility in reporting and the potential implications of being involved in unethical practices.

To navigate these dilemmas, I coupled ethnography with photographic methods. While the former allowed for reflection, clarity and a record of the information, it did have limitations (Adhikari, 2018). Primarily, recording observations introduced a delay, potentially leading to missed real-time details. Photographic methods helped mitigate this issue by providing a visual record that supplemented the textual notes. The immediacy and accuracy afforded by this visual analysis helped bridge the gaps left by textual methods.

In my research, I used a Fujifilm XT3 Digital Camera and OnePlus 9 mobile phone for photography. Predominantly, I utilised my smartphone due to its less intrusive nature. The compact size and perceived casualness of the mobile phone, as opposed to the more conspicuous digital camera, made individuals more comfortable, thereby easing the consent process for photographs. The immediate on-screen viewing facilitated quick assessment and reflection, while the viewfinder or screen frame provided focused perspectives. The photography process often occurred after or alongside verbal interviews, influencing the framing of photographs. Employing an iterative approach, starting with an 'establishing shot' (Thirunarayanan, 2006), I zoomed in and out, juxtaposing fragments with the whole to decode ambiguous oral utterances and address the first dilemma of capturing oral accounts accurately.

To address the second dilemma, which involves resolving discrepancies between narratives and actions, I practised visual ethnography by actively engaging in shared activities with the respondents, such as walking, eating and even waiting in cramped spaces outside offices. I moved with the camera, following the subjects' movements, continuously observing, analysing and photographing while immersing myself in the experience. Using the camera or mobile phone screen, I repeated this cycle of observation and reflection. This sensory approach acknowledges that human experiences are not solely verbal or cognitive but also shaped by sensory perceptions, emotions and bodily sensations (Pink, 2015).

Resolving the third moral dilemma of documenting illicit activities involved adopting two ethnographic approaches: immersive presence (Roncoli et al., 2016) and maintaining distance using the *rear-mirror technique* (Wamsiedel, 2017). Immersion fostered trust and understanding of interviewees' vulnerabilities, capturing implicit cues and adding meaning to photographs. Conversely, the rear-mirror technique helped me maintain a critical distance from illicit scenes and activities. This allowed me to reflect on my biases and influence, ensuring I did not become too immersed in or influenced by the illicit activities being documented.

By maintaining a critical distance, I ensured ethical integrity and respect for participants' confidentiality. Striking a balance between these approaches enabled ethical considerations to guide documentation and analysis while respecting participants' rights and confidentiality.

My background as a photojournalist and documentary photographer significantly influenced my approach. Documentary photography (Hodson, 2021; Kratochvil, 2001) allowed me to delve into the intricacies of subjects over three months. Budgetary constraints necessitated a smaller sample of interviewees focused on a well-connected group to explore repair practices across various levels, which was facilitated by snowball sampling. Conversely, photojournalism (Becker, 1995; Kratochvil, 2001) honed my ability to capture and represent stories within limited timeframes, negotiate morally ambiguous situations and foster agility.

Drawing on these insights, I developed five routines to navigate the dilemmas encountered in my fieldwork. I term them as routines as they were informed by theoretical insights on repair and implemented during fieldwork. These routines serve as a photographic praxis that facilitates reflexive visual analysis. In the subsequent section, I will explain how these photographic routines, applied singularly or combined, helped interpret various forms of repair in Bhopal and Bhuj.

5. Visual Tales of Repair in Bhopal and Bhuj

Examining the informal water governance in Indian cities Bhopal and Bhuj reveals varied impacts on repair processes due to contrasting geographical and socio-political contexts. Bhopal, a state capital in central India, abundant with lakes, leans heavily on the distant Narmada River for water supply. Meanwhile, Bhuj, in an arid region on the north-western national border, rebuilt its water system following a 2001 earthquake, sourcing this from a canal linked to the Narmada River, located 700 km away (Sheth & Iyer, 2021).

Bhopal's water governance is fragmented and dominated by governmental bodies that often overshadow environmental NGOs and civil society's efforts, creating sporadic measures. Despite relying on an external source, the Narmada River, water security concerns appear less emphasised, reflecting a lack of urgency and unified vision for water management. This disconnect is noticeable in a report from the [Comptroller and Auditor General of India \(2021\)](#) and is reinforced by my fieldwork observations.

Conversely, Bhuj, a city hardened by repeated natural disasters, exhibits community resilience and self-organisation (Sheth & Iyer, 2017). Such conditions spur the growth of civil society groups addressing water security issues. However, my study reveals discordant approaches between these civil society organisations and local authorities, side-lining the former's efforts and downplaying the conditions which produced water issues.

Both cities showcased distinctive repair practices in response to their unique circumstances. In Bhopal, local governmental actors grappled with citizens' threatening behaviour (exemplified by Ram Singh) and departmental fragmentation (illustrated by Miheer Soni below). Water users in Bhopal also adopted informal strategies to sustain water provision by tinkering with the infrastructure.

Meanwhile, Bhuj residents demonstrated remarkable resilience, blending their professional duties with personal resolve to address water security issues, embodying the city's strong inclination towards community-led repair initiatives.

a) Scale-shifting photography: Unveiling interpersonal infrastructure as a means to repair

Intrigued by Ram Singh's informal approach to water management, revealed during his interaction with Farhan, I found it challenging to fully comprehend the influence of personal alliances on water access. With the aid of scale-shifting photography, I ventured deeper to try and make sense of the role of these alliances. Following the interview, I stepped away from the spot to capture an establishing shot and found myself instinctively drawn to photographing the larger infrastructure elements. The camera's zoom feature allowed a telescopic focus on subtler elements near and beneath the water tank, eliminating visual distractions within the frame. This oscillation between zooming in and zooming out allowed me to observe the relationship between part and whole, prompting a critical examination of what the infrastructure entailed. The collage of zoomed-in and zoomed-out photographs is seen in Figure 6.2. Initially drawn by the colossal scale of the OHT, the scale shifting led me to realise that the real essence of infrastructure lay in the personal alliances that choreograph the flow of water to the desired recipient.



Figure 6.2. Scale shifting photography at OHT. (30/9/2021)

b) Walking with a camera: Uncovering repair tactics to navigate inter-departmental relations

Miheer Soni*, an Assistant Engineer at Bhopal Municipal Corporation (BMC), deals daily with the intricate balance of maintaining water supply, managing public dissatisfaction and obtaining repair permissions. To comprehend these challenges, I joined Soni on an inspection walk with the State Public Works Department (PWD).

This first-hand experience unveiled the tensions Soni faces and his innovative approaches to alleviating bureaucratic constraints. The assertive demeanour of the higher ranking PWD officers was evident in their tone and gestures. In contrast, Soni displayed calmness as he methodically noted down the requirements, communicating them to his subordinates, illustrating his hierarchical position (see Figure 6.3 right).

However, at the junior level, the hierarchy blurred. I observed camaraderie between Soni's subordinates and the PWD junior reporting team, which offset the stern exchanges among their superiors. Their informal interactions



Figure 6.3. (Left) Soni (in blue checked shirt) waiting for the PWD officers. Meanwhile, his team exchanged greetings with PWD's team. (Right) Soni flanked by his men, displaying support and strength. (28/9/2021)

(see Figure 6.3 left) bridged bureaucratic gaps and expedited operations, contributing to the mending or *marammat* (returning to the original) of siloed operations.

Using a camera to document this walk offered a deeper understanding of Soni's professional environment, revealing nuances missed in our initial interview. While the walk could have been purely observational, the camera provided a focused lens, facilitating real-time analysis without peripheral visual distractions. Through this lens, the intellectual curiosities from our previous conversation – power dynamics, loyalty, subservience, obedience, fear, pride and respect – were visually depicted in their daily context. This inspection walk highlighted Soni's adeptness at navigating within the intricate relational dynamics to ensure operational smoothness.

c) Sensorial knowledge production: Decoding intention and situated expertise

During my interactions with Ramanbhai Patel* and Jyotsnaben Jadeja* in Bhuj, I was absorbed in multi-sensory experiences. Patel, a dedicated citizen, showcased his decade-long quest to get a lake notified, which is a long formal process of declaring a body of water as a lake in an urban area. Despite his unwavering effort, evidenced by stacks of diligently arranged documents, success remained elusive. Similarly, Jadeja, who worked in an action research organisation, conducted informative Sunday walks about the city's water sources and distribution. Her patience was evident as she took time to answer tangential questions, broadening the group's understanding beyond the immediate walk.

While their methods might not yield instant results, they were instrumental in fostering awareness of these issues among citizens. Patel and Jadeja's resilient efforts, showcasing their understanding of the challenges faced, embody the essence of *sudharna* (seeking betterment for the future). Their perseverance was tangible: I felt the weight and aged scent of Patel's paperwork, symbolising the endurance required for such advocacy (see Figure 6.4 left). Likewise, while photographing Jadeja, my own dust-covered state mirrored her disregard for the soiling of her clothes as she addressed inquiries (see Figure 6.4 right). Participating in shared activities with a camera made me aware of the peripheral influences on repair, such as dedication and thorough knowledge, shedding light on their ambitions and challenges.



Figure 6.4. (Left) Patel presenting piles of paperwork required for lake notification requirements (21/12/2021); (Right) Jadeja engaging in soil-covered Q&A session while kneeling on the ground (19/12/2021)

d) Improvising photographic composition: Strengthening the representation of repair

Visual ethnography, an ongoing dialogue between camera and photographer, allowed my photographs to engage with the conceptual understanding of repair. These photographs embrace both content and composition.

Pareshbhai Patel*, a Bhuj school principal, initiated a systemic change by co-teaching water conservation and pollution to school children. Given the slow pace of educational curricular changes at the state or country level, without further ado, Patel collaborated with advocacy organisations and co-taught lessons as extensions of regular classes. His central position in the Figure 6.5 (left) captures his dynamic energy and optimism, essential for the reparative process of *sudharna* (seeking betterment).

In another instance in Bhopal, an interviewee highlighted how modern digital platforms like government websites can overwhelm citizens, leading many to use tools like WhatsApp for public participation. Citizens, municipal operators and party workers rely on these groups to share events and complaints, often supported with photographic evidence. This free social media platform effortlessly



Figure 6.5. (Left) The School principal in Bhuj explaining the importance of rainwater harvesting and conservation to his students centred in the photograph (16/12/2021); (Right) A supervisor effortlessly showing WhatsApp-enabled phone to display water kiosk updates in Bhopal’s old city (03/12/2021).

coexists with modern digital platforms. The image of a phone showing the WhatsApp platform held by a supervisor (see Figure 6.5 right) illustrates the accessibility and integration of such tools alongside modern digital platforms, embodying *rafu karna* (bolstering the old with the new).

e) Long-form documentation approach: Discovering tools for repair

Observing patterns requires distance and demarcation. Patterns often hide in the mundane details of everyday life, subtly emerging through focused observation. My photographic journey, initially centred on the ordinary, unfolded over months and revealed a coherent pattern.

In Bhopal, citizens expressed concerns over groundwater quality, inadequate water pressure and irregular supply. To address this, they innovatively tinkered the existing infrastructure with everyday objects. The photo series (see Figure 6.6)



Figure 6.6. First series showcasing ordinary objects to tinker the original physical water supply infrastructure. (3/10/21; 3/10/21; 18/11/21) Second series - Mobile phones becoming a norm to access easily. (6/1/22; 6/1/22; 6/1/22)

spotlights these adaptations, e.g. in the first series: (1) specialised pipes connecting to a water pump for propelling water to upper floors, (2) an unauthorised pressure pump and (3) a pipe for transferring groundwater from private bores into water tankers, subtly hiding their unofficial status. Local authorities were typically aware of these adaptations; some even tacitly approved them as they filled gaps in the water system. In Bhuj, despite available redressal platforms for water issues, grassroots government employees used mobile phones to improve accessibility to water services and respond to emergencies, becoming tools for socio-technical repair.

Upon revisiting the photographs, a recurring theme emerged. Over time, images initially captured for various reasons revealed a consistent theme of inventive adaptations and technology's role in social repair, embodying *Dosh rahit* (faultless repair).

6. Discussion and Conclusion

Through my field experiences and engagement with literature, I have appreciated the importance of informal governance processes and structures facilitating repair across legal, geographical and social contexts. Often undervalued due to their clandestine nature, I employed an ethnographic approach, complemented by digital photography, to capture these expressions of repair. Navigating the dynamics of informal governance arrangements presented me with three dilemmas, wherein the five routines proved invaluable for their resolution.

The first dilemma, ensuring the accuracy of oral accounts, was addressed by employing visual ethnography sensorially. This approach proved a powerful tool for understanding dedication, especially in cases like Jyotsnaben Jadeja's. Oral accounts, while providing hints at her intentions, often left much to interpretation. However, visual cues enabled a comprehensive interpretation of her unspoken markers when decoded using the routines.

The second dilemma was the resolution of discrepancies between oral accounts and actions. For vulnerable individuals like Ram Singh, who was worried about his job, verbal disclosures led him to alter or conceal facts. I cross-referenced with others, such as plumbers and supervisors, to verify Singh's account. This triangulation process highlighted inconsistencies, revealing the complexities of his situation. Additionally, looking through the screen or viewfinder highlighted overlooked elements, like everyday interactions, emphasising the significance of personal relationships within these informal systems.

The third dilemma was the ethical aspect of documenting illicit activities. The notion of 'distance' (Rose, 1997) was crucial in managing ethical challenges during research. Determining the extent of immersion, mainly when covering sensitive topics like illicit water pumps and knowing when to withdraw, was essential. I opted to respect the users' oral accounts, documenting their approaches through the less conspicuous medium – the smartphone. This approach was validated when local authorities acknowledged their awareness of these illicit measures, resolving my moral dilemma.

These routines revealed two types of repair – reactive and reparative. The former is a temporary measure to restore the status quo, while the latter focuses on

localised efforts to facilitate reparation. Photographic methods, when incorporated with ethnography, provided a nuanced understanding of these dynamics. Integrating photographs and interview notes enriched the textual analysis, serving as meaningful ‘codes’ within qualitative coding software like ATLAS.ti.

Being an Indian ethnographer in unfamiliar Indian cities, I encountered ‘situated dilemmas’ (Ferdinand et al., 2007), influenced by my identity. Consent posed a challenge for some, as formal documentation was required for capturing informal actions in line with my institution’s best practices. Affiliation with a Dutch organisation compelled me to have written consent, which a few participants perceived as a liability. To address this, I utilised verbal consent, maintaining ethical engagement while respecting Dutch transparency norms. Balancing these contrasting ethical considerations proved challenging throughout the research process.

Recognising my inherent subjectivity as a researcher was crucial to this study. My Indian nationality offered familiarity with the study sites. This cultural proximity facilitated trust with research subjects, allowing them to share ‘open secrets’ (Wamsiedel, 2017). Despite sharing an Indian identity, my metropolitan roots in Mumbai differed from the realities in Bhopal and Bhuj. Meanwhile, my Dutch association amplified perceived power differentials. The balance between these experiences guided my approach to power differentials and the concept of distance. The interviews became a platform for mutual exchange and personal reflection, prioritising respondents’ motivations and perspectives over purely technological and planning aspects. This approach acknowledged the value-laden, historically contingent nature of oral accounts.

7. Returning to Ram Singh

Ram Singh’s shushing gestures highlighted his balancing act between the covert aspects of interpersonal arrangements and formal mandates. Officially, he managed the OHT and water distribution, but pressure from residents led to unequal resource allocation. This deviation built essential personal networks with residents, facilitating operations. His informal management rectified governance processes which were ill-equipped for citizen-based threats.

The camera’s lens and employment of the routines served as a gateway, illuminating the latent dynamics inhabiting the space beneath the OHT. Through this visual exploration, it became evident that this seemingly mundane location bore significant weight in dictating the decisions of water distribution.

End Notes

*Indicates pseudonyms used.

Acknowledgements

I thank my supervising committee – Dr Anelli Janssen, Dr Katharina Hölscher and Prof Derk Loorbach – as well as the editors of this book for their invaluable

guidance. This research is part of the Water4Change (W4C) programme, supported by the Dutch Research Council (NWO) – (Grant W 07.7019.103) and Indian Government Department of Science and Technology (Grant DST-1429-WRC). I express deep gratitude to all contributors, including the W4C programme's member institutions.

References

- Adhikari, D. P. (2018). Ethnographic fieldnote writing: Methodological challenges in the 21st century. *Dhauagiri Journal of Sociology and Anthropology*, 12, 98–106.
- Ahlers, R., Cleaver, F., Rusca, M., & Schwartz, K. (2014). Informal space in the urban waterscape: Disaggregation and co-production of water services. *Water Alternatives*, 7(1), 1–14.
- Becker, H. S. (1995). Visual sociology, documentary photography, and photojournalism: It's (almost) all a matter of context. *Visual Sociology*, 10(1–2), 5–14. <https://doi.org/10.1080/14725869508583745>
- Bhan, G. (2019). Notes on a southern urban practice. *Environment and Urbanization*, 31(2), 639–654. <https://doi.org/10.1177/0956247818815792>
- Broto, V. C., Westman, L., & Huang, P. (2021). Reparative innovation for urban climate adaptation. *Journal of the British Academy*, 9(s9), 205–218.
- Comptroller and Auditor General of India. (2021). *General and social sectors for the year ended 31 March 2019, Government of Madhya Pradesh. Report 3 of the year 2019*. <https://saiindia.gov.in/ag2/madhya-pradesh/en/audit-report/details/115252>
- Ferdinand, J., Pearson, G., Rowe, M., & Worthington, F. (2007). A different kind of ethics. *Ethnography*, 8(4), 519–543.
- Gobo, G. (2008). What is ethnography? In *Doing Ethnography*. SAGE Publications Ltd. <https://doi.org/10.4135/9780857028976>
- Goodman, J., & Marshall, J. P. (2018). Problems of methodology and method in climate and energy research: Socialising climate change? *Energy Research & Social Science*, 45, 1–11.
- Henke, C. R. (2017). The sustainable university: Repair as maintenance and transformation. *Continent*, 6(1), 40–45.
- Hodson, D. (2021). The politics of documentary photography: Three theoretical perspectives. *Government and Opposition*, 56(1), 20–38. <https://doi.org/10.1017/gov.2019.3>
- Jaglin, S. (2014). Regulating service delivery in southern cities: Rethinking urban heterogeneity. In S. Parnell & S. Oldfield (Eds.), *The Routledge handbook on cities of the global south* (1st ed., pp. 434–447). Routledge. <https://doi.org/10.4324/9780203387832>
- Kharel, D. (2015). Visual ethnography, thick description and cultural representation. *Dhauagiri Journal of Sociology and Anthropology*, 9, 147–160.
- Kratochvil, A. (2001). Photojournalism and documentary photography. *Nieman Reports*, 55(3), 27.
- McFarlane, C. (2012). Rethinking informality: Politics, crisis, and the city. *Planning Theory and Practice*, 13(1), 89–108. <https://doi.org/10.1080/14649357.2012.649951>
- Narain, V. (2000). India's water crisis: The challenges of governance. *Water Policy*, 2(6), 433–444. [https://doi.org/10.1016/S1366-7017\(00\)00018-0](https://doi.org/10.1016/S1366-7017(00)00018-0)
- Perry, K. (2020). Realising climate reparations: Towards a global climate stabilization fund and resilience fund programme for loss and damage in marginalised and former colonised societies. SSRN 3561121.
- Pink, S. (2013). *Doing visual ethnography* (3rd ed.). Sage.
- Pink, S. (2015). *Doing sensory ethnography*. Sage.

- Roncoli, C., Crane, T., & Orlove, B. (2009). Fielding climate change in cultural anthropology. In S. Crate & M. Nuttall (Eds.), *Anthropology and Climate Change: From Encounters to Actions* (pp. 87–115). Left Coast Press.
- Rose, G. (1997). Situating knowledges: Positionality, reflexivities and other tactics. *Progress in Human Geography*, 21(3), 305–320.
- Roy, A. (2005). Urban informality: Toward an epistemology of planning. *Journal of the American Planning Association*, 71(2), 147–158. <https://doi.org/10.1080/01944360508976689>
- Sheth, D., & Iyer, M. (2017). Opportunities and challenges in upscaling decentralized wastewater treatment plants city wide: Case of Bhuj. *SPANDREL-Journal of SPA: New Dimensions in Research of Environments for Living*, 13, 57–65.
- Sheth, D., & Iyer, M. (2021). Local water resource management through stakeholder participation: Case study, arid region, India. *Water Practice and Technology*, 16(2), 333–343.
- Thirunarayanan, R. (2006). *Visual communication of mood through an establishing shot*. Texas A&M University.
- Wamsiedel, M. (2017). Approaching informality: Rear-mirror methodology and ethnographic inquiry. In A. Polese, C. C. Williams, I. A. Horodnic, & P. Bejakovic (Eds.), *The informal economy in global perspective: Varieties of governance* (pp. 97–115). Springer International Publishing. https://doi.org/10.1007/978-3-319-40931-3_6