

Navigating water access and governance
in peri-urban Ashaiman, Ghana: A case study

by

Megan Michelle Peloso

B.SocSci. University of Ottawa, 2009

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF ARTS

in

THE FACULTY OF GRADUATE AND POSTDOCTORAL STUDIES

(Resource Management and Environmental Studies)

THE UNIVERSITY OF BRITISH COLUMBIA

(Vancouver)

April 2014

© Megan Michelle Peloso, 2014

ABSTRACT

Low-income, peri-urban residents of Greater Accra face disparities in water access, particularly given that piped water services provided by the formal municipal network are highly erratic and unreliable. Often, those underserved by the official provider are able to meet their daily water needs by sourcing water through alternative, or informal, means. Although it is often the case that informal water services pose important challenges for users, for instance in terms of price and quality, this research attempts to understand other dimensions of how populations are served when they are not adequately reached by formal networks. This research also explores the potential for participatory water governance, querying policy and scholarly literatures that advocate for a more inclusive water governance process on the grounds that it is key towards service extension and empowerment.

This thesis is based on two months of fieldwork in Ashaiman, a rapidly growing settlement located on the outskirts of the capital region of Accra, Ghana. The overall objective of the thesis is twofold: (1) To examine the myriad of mediums and networks through which water is accessed, with particular attention to those that extend beyond the municipal water system, and (2) To assess how participation in water governance is experienced and expressed by the peri-urban poor, with the aim of considering possibilities for managing water concerns in this context. These themes are addressed respectively in the two substantive chapters of this thesis.

Insights suggest that a diversity of strategies to obtain water is a key factor in allowing peri-urban dwellers to cope with water insecurities. In addition, mainstream approaches to participatory water governance may be at odds with local institutions operating within Ashaiman, which tend to be multi-purpose and adaptive, based on a wide-ranging goal of improving social welfare. Among other implications of these findings, it is concluded that an in-depth process of consultation with community members, organizations and private water vendors is imperative to promote collaborative governance of water and well-being, where members themselves define the scope of the mandate, and where the critical role of informal water networks is accounted for.

PREFACE

Statement of co-authorship

For consistency, the first-person pronoun ‘I’ is used throughout this thesis. However, a paper version of Chapter 2 has been published in a special issue of *Water Alternatives* and is co-authored with Cynthia Morinville. The core framing of this chapter was conceived of collaboratively between the authors, and Morinville provided support in the writing and revision process. As first author, I wrote the first draft of the paper and took the lead on amendments suggested at different stages by the journal editors, anonymous reviewers, and my UBC thesis supervisory committee. The primary data from which this chapter draws was collected and coded by the first author, and is based on fieldwork I undertook in Ashaiman and Accra, Ghana, from late May to July 2012.

Funding and other support was also provided for this work by the Center for International Governance Innovation; the Institute for Resources, Environment and Sustainability at UBC; The EDGES research collaborative at UBC; and the Social Science and Research Council of Canada (SSHRC Insight grant, *Experiences of Shifting Water Governance: Comparative Study of Water Access, Narrative, and Citizenship in Accra Ghana and Cape Town South Africa*, PI L. Harris).

Publications arising from work presented in the thesis

Peloso, M. and C. Morinville. 2014. ‘Chasing for Water’: Everyday practices of water access in peri-urban Ashaiman, Ghana. *Water Alternatives*. 7(1): 121-139.

Research ethics approval

This research was granted approval by the UBC Behavioural Research Ethics Board. The certificate number of this ethics certificate is H12-00685.

TABLE OF CONTENTS

ABSTRACT	ii
PREFACE	III
TABLE OF CONTENTS	iv
LIST OF TABLES	vii
LIST OF FIGURES	viii
LIST OF ABBREVIATIONS	ix
ACKNOWLEDGEMENTS	x
DEDICATION	xi
CHAPTER 1: INTRODUCTION	1
Theoretical Points of Departure.....	3
Challenges of Water Service Provision in Peri-Urban Informal Settlements.....	4
Research Study Context	6
Water access in urban Ghana: Competing figures.....	6
A history of Ghana's water industry.....	8
Structural Adjustment, PSPs and Decentralization.....	8
Anti-Privatization Campaign and AVRIL Contract (2006-2011).....	9
IWRM and Community Governance of Water	10
Situating the Project	12
Chapter-Specific Research Objectives and Questions	12
Methodology.....	13
Case Study Site and Approach: Ashaiman, Ghana	14
Data Collection.....	17
Data Analysis.....	19
Limitations and Positionality.....	20
Chapter Summaries	21

CHAPTER 2: “CHASING FOR WATER” EVERYDAY PRACTICES OF WATER ACCESS IN PERI-URBAN ASHAIMAN, GHANA.....23

Introduction.....	23
Methods.....	26
Theoretical Points of Departure.....	28
Informality	28
Everyday Practice and Human Infrastructures	30
Context: Water Access in Urban Ghana	33
Ashaiman, Ghana	35
“Chasing for water” in Ashaiman: Analysis of Everyday Practices.....	35
Talk of the tap.....	36
Price	39
Transaction.....	41
Trust and Communication	42
Housing and Mobility	43
Discussion: Informal Water, Everyday Practices and Human Infrastructure.....	45
Conclusions.....	49

CHAPTER 3: “WHAT WE DO IS WELFARE” QUESTIONING PARTICIPATORY WATER GOVERNANCE IN PERI-URBAN ASHAIMAN, GHANA.....52

Introduction.....	52
Conceptual Framework	55
Models and ‘mis-fits’ in participatory water governance	55
Social natures of water and the hydro-social cycle	59
Institutional theory and the local-level	62
Ghana Water Policy & Case Study Site	64
Water Access.....	64
National Water Policy	65
Case Study Site: Ashaiman	66
Methodology.....	67

Results – Fluid meanings of water and governance	68
“Water is life” and other ways of knowing water	69
Group Meetings: Considerations of well-being and social support systems.....	75
Discussion	79
Conclusion.....	84
CHAPTER 4: CONCLUSIONS	88
BIBLIOGRAPHY	93
APPENDIX	109
Interview Guide	109

LIST OF TABLES

Table 1 Interview Sample	18
Table 2 Tariffs for water in Ashaiman from June to August 2012	39

LIST OF FIGURES

Figure 1 Map of Ashaiman (Map of Ashaiman (Source: RS/GIS Lab, Department of Geography and Resource Development, University of Ghana. "Map of Ashaiman," October 5 2013; Reprinted with permission)	15
-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----

LIST OF ABBREVIATIONS

AVRL	Aqua Vitens Rand Limited
AWPD	Ashaiman Women in Progressive Development
CHF	CHF-Ghana (Formerly the Cooperative Housing Federation)
CONIWAS	Coalition of NGOs in Water and Sanitation (Ghana)
CWGAR	Comparative Water Governance African Cities Research Project
CWSA	Community Water and Sanitation Agency
GAMA	Greater Accra Metropolitan Area
GHAFUP	Ghana Federation of the Urban Poor
GPRS	Ghana Poverty Reduction Strategy
GUWL	Ghana Urban Water Limited
GWCL	Ghana Water Company Limited
GWP	Global Water Partnership
GWSC	Ghana Water and Sewerage Company
IMF	International Monetary Fund
ISODEC	Integrated Social Development Center
IWRM	Integrated Water Resource Management
LWB	Local Water Board
MRWH	Ministry of Resources, Works and Housing
NEPAD	New Partnership for Africa's Development
NCAP	National Coalition Against Privatization
NGO	Non-Governmental Organization
PD	People's Dialogue
PPLG	Public Participation in Local Governance
PPP	Public-Private Partnerships
PSP	Private Sector Participation
PUI	Peri-Urban Interface
PURC	Public Utilities Regulatory Commission (Ghana)
SAPs	Structural Adjustment Programmes
SDI	Shack/Slum Dwellers International
SSIPs	Small-Scale Independent Providers
TREND	Training, Research and Networking for Development Group
UNPD	United Nations Population Division
WHO-UNICEF	World Health Organization – The United Nations Children's Fund
WUA	Water User Association

ACKNOWLEDGEMENTS

It would not be possible to list every colleague, friend and family member who, through his or her guidance, support and sense of humor, contributed to the culmination of this thesis. I hope that you know my sincere gratitude, even if not named here. First and foremost, I am indebted to the many people living in Accra and Ashaiman, Ghana, who gave generously of their wisdom, time and hospitality to make this research possible. I would especially like to acknowledge Innocent, Elizabeth, Amba and Akosua for their invaluable assistance and patience in conducting day-to-day fieldwork. I am also thankful for newfound friends, including James, Raymond and Angela, for warmly welcoming me and helping to make this experience an enduring one.

IRES is a remarkably vibrant and cohesive space thanks in no small part to the staff and faculty. I would like to recognize Terre for her accessibility and mentorship as Director. Thanks are also due to Nora for her thoughtful questions and encouragement in the final stages. To Hannah, thank you for seeing this through and challenging me to make the most out of this opportunity. Leila, as supervisor of this research you gave me the freedom to take initiative and to step outside of my comfort zone, and from that confidence I have been able to learn so much, if not always gracefully. I am forever thankful to you for making it possible for me to embark on this research and sincerely hope to continue to work together in the future.

To those who simply sat and listened to my relentless ruminations and conundrums: especially my roommates Ashley, Charlotte and Daniela, colleagues Maryam, Jordan, Sara, Gerald and Rosie and also Brad and Emily. Those moments kept me grounded while no doubt pushing you towards the edge of your own sanity. That is love and I will never forget it. Dave, even though your perspective on ‘magick’ may be depressingly realist, you have inspired me to think and write articulately and with conviction, as you are so gifted at doing. I look forward to disagreeing on most, but never, ever on Sherlock Holmes or Dairy Queen. Lauren, you urged me to be true to myself and to make the most of the ups and downs. More importantly, you introduced me to IPAs and to Portland. For your meticulous comments on parts of this thesis I am truly appreciative. Sean, simply put, you make everything more thrilling. Your energy and sincere fascination with the world is superbly contagious. I’m glad the 99 wasn’t full. Lucy, thank you for the laughter, the whiteboard sessions, for indulging me in my moments of drama, and for going dancing with me. SCHMIDT! Cynthia, there are no words to capture in any eloquent or fulsome way what you have brought to this journey. Thank you for always offering a safe place to abandon the box, the rational, the critic, and to let loose the messy truths of my imagination. There is no greater gift in friendship.

To my family: The Pelosos, the Halls and the Nestmanns – your unwavering support from near and far have inspired me and lent me courage to persevere – Thank you! A final note of gratitude to Susan – you have understood the powerful resonances of quiet words and writings, which have warmed my heart, pulled me through and continue to fill me with hope.

DEDICATION

This research is dedicated to “Sid” Severino Peloso.

Thank you Nono, for your unwavering support.

*Despite life’s deluge of tasks that may wear me down,
through your eyes I see someone with a light and fiery spirit,
not unlike your own.*

CHAPTER 1: Introduction

*There are these two young fish swimming along and they happen to meet an elder fish swimming the other way, who nods at them and says,
“Morning, folks. How’s the water?”*

*And the two young fish swim on for a bit,
And then eventually one of them looks over at the other and goes,
“What the hell is water?”*

David Foster Wallace (2009)

All by itself, water is supremely fluid, fluctuating, fleeting. We mix language, gods, bodies, and thought with water to produce the worlds and selves we inhabit.

...Water is what we make of it.

Jamie Linton (2010)

It is perhaps a rare case of literary-academic synergy between a writer, David Foster Wallace, and a geographer, Jamie Linton, that though by different angles they each arrive at the significance of day-to-day dealings with water. In the first, Wallace delivers a parable of fish in the water to convey the message that our everyday surroundings are hard to notice and even more of a challenge to describe or manage, “but the fact is that in the day to day trenches of adult existence, banal platitudes can have a life or death importance” (2009:6). As human beings, we encounter water on a daily basis, not merely because we depend on it for basic survival, but we also rely on water for countless facets of well-being, such as cooking meals and maintaining personal hygiene. Yet, although integral to the conduct of everyday life, encounters with water are highly differentiated across populations from North to South and even within the same city limits. This brings me to Linton, who in the second quotation hints at why each of us should be concerned with the act of crafting knowledge about water; in other words the process of investing an essential resource with certain contents. As though in reply to Wallace’s question,

“What the hell is water?” Linton offers a somewhat unresolved answer: “Water is what we make of it.” The idea is that what is known about water is limited and mutable; it is constructed over time through discourse and practice both consciously and latently.

At the same time, taken as a whole, perspectives that are attached to water can deeply affect the everyday phenomena involved in deciding its use and management, since “the way water is conceptualized and represented is instrumental in determining who gains access to it and on what terms” (Shiva qtd. in Linton, 2010:69). Gleick (2000; 2002) refers to dominant views around water as a kind of collective consciousness; a water ethic or ‘paradigm’. It has been argued that the current paradigm might be understood as one that portrays water as a discrete resource, devoid of social content and distinct from social processes and consequences; Linton calls this ‘modern water’ (Linton 2010; 2014). Urban water policy is arguably underpinned by this ethic, creating a liability for a limited set of models for water governance to become unquestioned ideals, or driven by ‘hegemonic’ concepts (Sneddon, 2013). In the water world, as in other areas of applied research, thinking outside the box demands “swimming against the policy current” (Jensen, 2013:277). Critically exploring popular concepts in water policy, and being inquisitive about whether policy interventions match socio-economic, ecological and political realities on the ground, can help to explain why certain solutions appear more prominent in discourse, even though there is often evidence that they may not work as effectively across diverse contexts or conditions.

In the spirit of this, a core undertaking of this research project involves squeezing into the liminal spaces where water is accessed and governed ‘off the grid’ in peri-urban Ghana, a country that has been hailed as a “poster-child for democracy” and a “haven of stability” in Western Africa, and is widely regarded in the international community as a model of ‘good’ development and governance (Hirsch, 2013). The term ‘peri-urban’ refers directly to the interface or transition zone between rural and urban spaces, where more migrants are settling as urban expansion spills over to rural fringes (McGregor et al., 2006; Narain, 2010). I will discuss the significance of studying water access in peri-urban sites in the next section of this chapter. In this research, I pay particular attention to everyday experiences and activities of residents living in one such settlement, Ashaiman, Ghana, to consider how people might be experiencing changing water paradigms and policies. I then contrast these experiences with recommendations

set out by participatory discourses, showing how they hinge on a limited set of ideas of water and governance particularly as they apply to the global south.¹ I aim to critically engage with these ideas, to offer insights into scholarship that has called for an expansion of the repertoire of dialogue available to urban water planners working in rapidly growing metropolises in the global South. But before introducing the case study and methodological approach, I begin with an outline of the main theoretical points from which this research departs.

Theoretical Points of Departure

Modern water discourse: Scarcity, infrastructure and governance

The current modern water discourse hinges on a particular problem narrative of scarcity and crisis (Gleick, 2000; Mehta, 2005; Harris et al., 2013). Within this discourse, there is a tendency to emphasize technocratic solutions that in turn incite the commodification of water resources and services. Some authors argue this leads to a steady stripping of water's social content and warn that this can have major implications for policy-making around water management (Budds and Hinojosa, 2012; Linton, 2010). Swyngedouw captures the relationship between modern water discourse and the uptake of management practices succinctly:

A climate of actual, pending, or imagined water crisis serves not only to instigate further investment in the expansion of the water-supply side...but also fuels and underpins drives towards commodification. As the price signal is hailed as a prime mechanism to manage "scarcity," the discursive construction of water as a "scarce" good becomes an important part of a strategy of commodification, if not privatization (2004:47).

Within this narrative is the idea that 'modern' water is experienced in ever more rigid and calculated ways, through hidden infrastructures and systems of metering, creating a highly mediated socio-ecological relationship that has become an essential element of the modern urban space. Often, the pipeline and household tap model of water access is a crucial feature in a set of urban technological networks that constitute the city as well as what it represents. Kaika and Swyngedouw argue that the latest water technologies are fetishized, endowed with powerful meaning wrapped up in access not only to the utility that distributes water, but also to "the

¹ Sneddon (2013) argues that dominant ideas of water governance become 'hegemonic' or unquestioned ideals.

cathedrals of progress” and the “aestheticized dreams of tomorrow’s utopia” that are embodied within infrastructures (2000:130). Impressive infrastructural developments in recent history have transformed water distribution, such that societal relationships with water are more so than ever predominantly technical and economic. In urban spaces, “burying the flow of water via subterranean and often distant pinpointed technological mediations (dams, purification plants, pumping stations) facilitates and contributes to masking the social relations through which the metabolic circulation of water takes place” (*ibid*, 120). The resulting abstraction of water as a discrete object or biophysical entity has been highlighted as a recurring theme in contemporary water management (Linton, 2010).

Efforts to re-integrate and stress the social nature of water as a hybrid substance and relation have been central in critical studies examining the political ecology of water. The concept of ‘waterscape’, for example, has been applied as a lens to conceive of the configurations assembled by social and ecological processes of water, “which become manifest through the particular nature of flows, artefacts, institutions and imaginaries that characterize a particular context” (Budds and Hinojosa, 2012:125). In this thesis, I aim to contribute to the conceptualization of waterscapes and critical political ecology studies of water by taking a closer look at modes of water access that fall outside the domain of official utilities and infrastructures and also by considering how water governance strategies are entangled within the structures, flows and relationships that make up the waterscape in Ashaiman.

Challenges of Water Service Provision in Peri-Urban Informal Settlements

The population of Ghana is more urban than ever before. By the year 2000, 43.9% of Ghanaians were urban dwellers, a significant increase from 15.4% in 1950 (United Nations Population Division, 2003). Currently, estimates indicate that just over half of Ghanaians live in urban areas (Ghana Statistical Service, 2010:3). According to the most recent available census data, Greater Accra is the most densely populated region in Ghana (*ibid*: 2). As urban areas become more densely populated they often expand outwards, creating hybrid spaces on urban-rural fringes. So while previously it has been common to organize policies in resource management spatially and politically as urban or rural with little or no nuance in between, it is becoming more relevant in

urban studies to classify the diversity of landscapes across urban and rural divides. The concept of a peri-urban interface (PUI) may be one way to begin to fill this gap, by de-emphasizing the duality between rural and urban spaces. Today, the fastest growing megacities of the Global South are experiencing rapid expansion of peri-urban informal settlements, a phenomenon Davis examines in his seminal book, *Planet of the Slums* (2006).

Jurisdictional issues in peri-urban areas typically create a complex institutional setting. For example, often the ‘backyard’ for urban waste disposal, peri-urban areas can be simultaneously exposed to negative externalities of both rural and urban systems. As such, the peri-urban poor are at a disadvantage in terms of sheltering themselves from harmful impacts (Allen et al., 2006; McGregor et al., 2006). A clear geographical definition of where the PUI begins and ends is difficult to pin down; these spaces are neither uniform in all contexts nor is ‘peri-urban’ a term that is recognizable across all languages (McGregor et al., 2006). However, some common characteristics have been ascertained to help identify the particular issues faced by inhabitants of PUIs. For example, PUIs are often identified as squatter settlements, illegal areas, areas of high population growth, low priority areas in terms of urban planning, areas with diverse socio-cultural composition and low-income, socio-economic situations (Budds and Minaya, 1999).² According to Phillips et al., PUIs are also characterized by “strong urban influences, easy access to markets, services and other inputs, ready supplies of labour, but relative shortages of land and risks from pollution and urban growth” (1999:5). Informality is often a significant part of everyday life in PUIs. McFarlane and Vasudevan explain urban informality as “a mobile process through which often precarious lifeworlds are assembled” (2014:4). For Yiftachel (2009), informality is a deinstitutionalized ‘gray space’, where for Roy (2009a) it is a series of transactions that connect economies and spaces. The connotation of informality is contested and highly political and the use of the term throughout this thesis will be reviewed more closely in Chapter 2.

Water infrastructures can take different shapes and functions across a variety of settings and contexts. In peri-urban settlements of the GAMA region (Greater Accra Metropolitan Area), household tap water is not a reality that most people can afford. The majority of peri-urban

² For a review of the uptake of PUI in planning, see Allen (2003). See Budds and Minaya (1999) for an overview of program and project initiatives aimed at the management of the peri-urban interface.

dwellers in Ghana reside in rented rooms within compound houses, or ‘slum households’ as per the definition given by the United Nations Human Settlements Programme, which includes those that lack at least one of the following: a durable structure that provides residents protection against weather and climate, sufficient living space, access to adequate potable water, sanitation, and other infrastructure, and secure tenure (UN-Habitat, 2003). Indeed in terms of water access, it is common in peri-urban and urban areas throughout GAMA to rely on secondary vendors for at least a portion of water needs as reliability of services from the official utility is even lower than it is generally (Adank et al., 2011). Although secondary sources play a key role in extending water access to these areas, vendors and services remain unregulated, affecting the price, quality and likely also the availability of water in these parts--issues that will be discussed in Chapter 2. In this context (and elsewhere), the vendors providing these services have been referred to as private (Adank et al., 2011), community-based water providers (Osumanu and Abdul-Rahim, 2008), and artisanal (Bakker, 2003). ‘Informal’ vendors remains likely the most recognizable term in both academic and policy circles.

Research Study Context

Water access in urban Ghana: Competing figures

Ghana is endowed with a relatively abundant supply of both surface and ground water resources, drained by three main river basin systems: the Volta, South western and Coastal which are shared with several neighboring countries including Cote D’Ivoire, Burkina Faso, Togo, Benin and Mali (Sarpong, 2008). However, water availability does not necessarily translate to ease of access for drinking and household use by the average resident (Ainuson, 2010). Indeed, although the national target set for urban drinking water supply under the Ghana Poverty Reduction Strategy (GPRS) is 85% coverage by 2015, according to the latest assessment conducted by the Ministry of Water Resources, Works and Housing (2009), only 59% have access to improved sources. According to the WHO/UNICEF Joint Monitoring Programme, ‘improved sources’ include piped water into dwelling or yards, public taps or standpipes, tubewells or boreholes and protected dugwells, springs and rainwater (WHO-UNICEF, 2013). It

does not include surface water, bottled water, unprotected springs or dugwells, tanker trucks or carts with small tanks or drums.

Moreover, it bears mentioning that aggregated statistical figures such as those above often obscure more complex realities of water access. Ghana Water Company Limited (GWCL) is the approved utility responsible for urban water supply in GAMA. WaterAid estimates that up to 50% of the water GWCL supplies is classified as unaccounted for or non-revenue water (2005:2), meaning that almost half of treated water either leaks from the piped system, is siphoned off illegally or is unpaid for. This exacerbates water supply shortages, so that even those who are connected to the municipal pipeline receive only erratic supply (Songsore, 2008; Ainuson, 2010; Adank et al., 2011). Thus, although other estimates claim that around 73% of urban households in Ghana have access to pipe-borne water (Ghana Statistical Service, 2008), my research showed that water is often being sourced outside of the house through a multitude of arrangements, and as such it is difficult to ascertain with any certitude the quality or price of water for many households. According to the latest estimates produced by the Ghana Living Standards Survey, when disaggregated, about 40% of Ghanaian households have access to pipe-borne water, 41% also use water from wells, 16% depend on natural sources for drinking water and 4% of households have access to other sources such as water tanker service, water vendors and sachet³ or bottled water (Ghana Statistical Service, 2008). In fact, evidence shows many urban residents rely more heavily on water tankers and private vendors (Ghana Integrity Initiative, 2011; Harris et al., 2012). It is also important to note that there are several players and challenges implicated in improving public access to water supply in Ghana beyond those which are addressed in the chapters of this thesis, such as illegal connections, budgetary constraints, wastewater management and issues of contamination. For the purposes of this research, I focused mainly on the conditions of access that were underlined in interviews and which appeared to bear directly on daily experiences around water in Ashaiman, such as housing costs and relationships involved in neighborhood reselling.

³ Sachet water refers to locally produced bags of 500 ml of water. The water is generally treated before packaging in polypropylene sleeves heat-sealed at both ends. Sachets are available for immediate consumption or in bulk packages for home-consumption throughout the capital and other major cities and offer an alternative to limited supply or water of bad quality for residents. For complete discussion see Morinville (2012); Stoler et al. (2012); Stoler, Weeks, and Fink (2012).

A history of Ghana's water industry

In pre-colonial Ghana (before 1874), then Gold Coast, water use and conservation were managed through customary laws and traditional institutions (Agyenim and Gupta, 2010). Although water laws were not officially codified or written down, they were nonetheless adhered to based on a reverence for the power of earth and water bodies, which were regarded as channels of ancestors who had passed on (*ibid*). Since water was considered to be a common property resource, it was not acceptable for water to be parsed out or owned by certain individuals or groups. Some features of traditional systems in water management likely continued to operate well into the colonial period (between 1874 and 1957), despite the introduction of new legislative frameworks. Beginning with the Rivers Ordinance in 1903, legislation was enacted in the form of ordinances that called for the creation of distinct entities or agencies, which were responsible for particular functions in the management of water resources. Following the advent of Ghana's independence in 1957, a Water Supply Division was established a year later under the Ministry of Works and Housing; this division was responsible for managing both rural and urban water supply (Fuest and Haffner, 2007). In 1965, the Water Supply Division became the Ghana Water and Sewerage Corporation (GWSC). GWSC activities were overseen by what is now the Ministry of Water Resources, Works and Housing. This ministry oversees water supply activities by the GWCL, formulates water supply policy and solicits investment and funding from external agencies (GWCL, 2012).

Structural Adjustment, Private Sector Participation and Decentralization

During the colonial period, Ghana's economy was deliberately structured with the purpose of facilitating the extractive exploitation of its resources for the benefit of colonial rulers. Thus it should not come as a surprise that economic autonomy in Ghana has not readily followed in the wake of Ghana's political independence. The Rawlings Era (1979-2000)⁴ saw the planned democratization of Ghana's political and economic system, with heavy involvement from the

⁴ The Rawlings Era marks the re-introduction of party politics in Ghana. Flight Lieutenant J.J. Rawlings initiated several coups, went on to lead the ruling Provisional National Defence Council (PNDC) and later became democratic president of the National Democratic Congress (NDC).

World Bank and International Monetary Fund (IMF). In the framework of structural adjustment programs (SAPs), the World Bank oversaw several reforms to Ghana's water sector, including the implementation of the Water Sector Rehabilitation Project (WSRP) beginning in 1987, which focused on updating technical equipment, enhancing institutional capacity and expanding water supply (World Bank, 1989; Laube, 2007). Ten years later, based on goals of improving management and increasing efficiency, as well as creating conditions favorable for private sector participation (PSP) as per conditions of obtaining loans from International Finance Institutions (IFIs), the Water Sector Restructuring Secretariat was formed to facilitate the setting up of public-private partnerships (PPP) (Amenga-Etego and Grusky, 2005). Among the reforms was the institutional decoupling of rural and urban water supply systems, and the establishment of the Community Water and Sanitation Agency (CWSA) to manage small urban and rural water supply operations. Around the same time, GWSC was converted into the limited liability Ghana Water Company Limited (GWCL), a national-level government-run water supply company whose core responsibilities included water production, distribution and conservation of water for urban domestic, public and industrial uses (Fuest and Haffner, 2007). The responsibilities of GWCL, and more recently also the Ghana Urban Water Limited (GUWL) include planning and developing water supply services in urban communities in the country and provision and maintenance of acceptable levels of service to consumers in terms of quality and quantity (*ibid*).

Anti-Privatization Campaign and AVRL Contract (2006-2011)

Water privatization, which is the partial or total transfer of managerial control of water to a private operator, became a central approach to Ghanaian water management in the early 21st century (Lobina and Hall, 2003:3). Both the Rawlings and the Kufuor government that followed it (2001-2004) favored private sector participation (PSP) policies in urban water provision (Whitfield, 2006). Drawing on work by Swyngedouw, Yeboah suggests that this shift came about at this time in Ghana for three main reasons: budgetary pressures (in part imposed by SAPs), greater competitiveness and appeal for efficiency, and a trend towards viewing water as a potential source of profit as investors searched for new frontiers of capital investment (2006:53). As noted above, there was considerable pressure from the World Bank and IMF to move towards privatization of the water sector as part of SAPs and aid conditionalities to obtain loans

(Amenga-Etego and Grusky, 2005). It was in this financial and political climate of high stakes that public water services in Ghana were opened for bidding. Public opposition to the bid gained national and international support, led by the Ghana National Coalition Against the Privatization of Water (NCAP) (Amenga-Etego and Grusky, 2005; Agyeman, 2007). Integrated Social Development Centre (ISODEC), a local rights-based organization and one of the largest NGOs in Ghana, was instrumental in setting up NCAP, and a leader in the push for the ‘Accra Declaration on the Right to Water’, issued in 2001 (Suleiman and Cars, 2010). Through mass mobilization tactics and the organization of international demonstrations, ISODEC and NCAP successfully stalled the privatization of water in Ghana (Yeboah, 2006).

Despite resistance, and after a controversial bidding process, the GWCL signed a 5-year management contract in 2005 with Vitens Rand Water Services BV of Netherlands, a consortium of Vitens International BV of the Royal Netherlands and Rand Water Services Pty of South Africa. From June 2006 to June 2011, Aqua Vitens Rand Ltd. (AVRL - the subsidiary of Vitens Rand) operated the urban water system across Ghana. At the end of the contract, a review of performance indicators determined that AVRL did not deliver the improvement in Ghana’s urban water supply that had been anticipated (GWCL, 2012). Therefore the contract was not renewed and instead an interim company, Ghana Urban Water Limited (GUWL), was created to manage urban water distribution. On its website, GWCL states that GUWL was fashioned to fulfill the agenda temporarily, for approximately 12 months, until other arrangements could be made (*ibid*). Today, well past the date of alleged transition, the GUWL still exists, its General Managers controlling water supply services in 82 districts across urban regions of Ghana (*ibid*). Anti-privatization coalitions continue to advocate for the restructuring and strengthening of the public utility provider and stand by their opposition to PSPs, which has remained a core strategy for water sector development promoted by IFIs.

IWRM and Community Governance of Water

Integrated Water Resource Management (IWRM) has gradually become a core tenet of Ghanaian water policy in recent years, with the realization that a lack of coordination and understanding of roles and functions between water institutions were contributing to deficient water management and supply (Opoku-Ankomah et al., 2006). In 1996, the Ghanaian government enacted a new

water law entitled the Water Resources Commission Act (*Act 522*), introducing a commitment to IWRM principles and attributing official management authority to the Water Resources Commission (WRC) (Government of Ghana, 1996). The WRC is mandated with monitoring water quality, regulating the utilization of water resources, and coordinating policies and state functions around water management (Agyenim and Gupta, 2010). Also called the *WRC Act*, the law formally displaced pre-1996 customary regimes for regulating the ownership and management of water resources (Sarpong, 2008). Moreover, the Public Utilities Regulatory Commission (PURC) was established in 1997 to oversee the provision of all electricity and water services to the public, and therefore also became responsible for setting water tariff guidelines to which both urban and rural providers (GWCL and CWSA respectively) are required to adhere (Agyenim and Gupta, 2010). In setting these charges, PURC declares that its mission is to “lead in the development of a sustainable utility sector which adequately responds to stakeholder interests by assuring universal access to affordable services” (Public Utilities Regulatory Commission, 2008).

IWRM principles were further embedded into the Ghanaian water sector after the Second World Water Forum at The Hague in 2000 and the World Summit on Sustainable Development (WSSD) in Johannesburg in 2002 each called for member states to prepare IWRM policies as part of their water plans. The ‘African Water Vision 2025,’ prepared within the framework of the New Partnership for Africa’s Development (NEPAD),⁵ also promotes the adoption of a “holistic approach to water resource management and development” through incorporation of IWRM principles (Government of Ghana, 2007). By 2007, IWRM principles figured importantly in Ghana’s first comprehensive National Water Policy (*ibid*). Setting up provisions for community governance of water systems in Ghana is a core tenant of IWRM and the National Water Policy. A key area of focus in the water policy is to “ensure particular emphasis is placed on the use of public participatory mechanizations including enhancement of the role of disadvantaged groups, youth, local communities, with a special focus on women” (*ibid*: 28). With the support of GWCL and non-profit organizations such as CHF, Local Water Boards (LWBs) have been set up in

⁵ NEPAD was conceived by African leaders and provides a “platform for a comprehensive, integrated development plan designed to address key social, economic and political priorities in a coherent and balanced manner” (Government of Ghana, 2007).

multiple urban sites⁶ across Greater Accra, framed as supporting this policy objective by facilitating community participation in the governance of water resources (Morinville, 2012; Harris and Morinville, 2013). Setting aside (for the moment) problematic notions of the oversimplified ‘harmonious’ community, it remains to be seen whether these kinds of arrangements in water governance are in fact enabling improved water access for the urban and peri-urban poor (Kpessa and Atuguba, 2013). A large body of literature highlights the contested nature of participation by demonstrating how devolution of decision-making often occurs without due sharing of resources, and without adequately addressing dimensions of inequality of power and social status, thereby having the effect of exacerbating the burden placed on underserved and low-income populations to maintain access to basic services (Cooke and Kothari, 2001; Hickey and Mohan, 2004; Harris et al., 2013). Other sources suggest that in the pursuit of a multi-governance approach, challenges are being confronted in terms of confusion in the coordination or understanding of separate though overlapping groups, underlining a continued need to create a clear interface of functions and responsibilities (Opoku-Ankomah et al., 2006; Government of Ghana, 2007; Agyenim and Gupta, 2010). It is from the center of these debates that this thesis has evolved.

Situating the Project

Chapter-Specific Research Objectives and Questions

Below are listed two sub-objectives corresponding to each chapter, from which five core research questions are posed. These have important bearing in terms of the mainly qualitative methodological strategies chosen for data collection and analysis, explained in the following section.

Research Objective (Chapter 2): To explore access to water, and more specifically to investigate the ability of peri-urban residents to obtain access to water in a context of irregular flow from the official network.

⁶ Harris and Morinville (2013) have identified LWBs operational in at least three peri-urban sites across Greater Accra: Teshie, Nima and Ayidiki. Beyond this, it is difficult to accurately pinpoint the number of LWBs that have been set up since the time of research, especially as literature on this topic, within the context of interest, is currently very limited.

Question (2a): How is water access established in a context where piped water services provided by the formal municipal network are erratic and unreliable?

Question (2b): What lessons can be learned by looking at everyday practices of water access in terms of how people experience and perceive various types of water services?

Research Objective (Chapter 3): To assess how participation in water governance is experienced and expressed by the peri-urban poor, drawing on the case of Ashaiman.

Question (3a): What modes of engagement are in place to facilitate participation of peri-urban dwellers in water resource management?

Question (3b): How do people residing in Ashaiman evoke ideas or experiences around participation and/or understand their role in water governance?

Question (3c): In light of the practices, institutions and ideas of water governance in place, what are the implications for considering potential water governance strategies in this context?

Methodology

This thesis employs mainly qualitative research methods with the goal of gathering empirical data to enrich literature and policy frameworks concerned with informal water access and participatory water governance. The data is drawn from in-depth, semi-structured interviews and unstructured observation conducted in Ashaiman, Ghana between late May and July 2012. This qualitative study contributes to a collaborative research project, entitled Comparative Water Governance in African Cities Research Project (CWGAR), which investigates everyday lived experiences of water access and participatory governance in South Africa and Ghana. As part of this project, a survey was carried out in Accra, Ghana, and Cape Town, South Africa, to derive baseline informational data on water access and demographics prior to conducting fieldwork. In Ghana, the survey was carried out with the support of local collaborators at the University of Ghana-Legon, who solicited a total sample of 243 residents surveyed across two peri-urban informal settlements in Greater Accra: Teshie (120 survey respondents) and Ashaiman (123

survey respondents) (Harris et al., 2012).⁷ This thesis project sought to contribute further qualitative research data regarding water access and governance in Ashaiman, to add ethnographic insights and further explore tensions and ambiguities that arose from survey results and content analysis. For example, the survey results suggested that the vast majority of respondents would not go to the official water provider (e.g. AVRL) for help with water problems. Fieldwork was undertaken to clarify for instance whether this was a matter of poor management services by the municipal utility, or perhaps due to a lack of awareness or trust amongst residents of Ashaiman towards the utility, the government and their role in providing services. I speak to these and related issues in the pages that follow.

Case Study Site and Approach: Ashaiman, Ghana

Ashaiman gained municipal status in 2008, making it the newest of ten municipal districts in the Greater Accra Metropolitan Area (GAMA). Located northeast of Accra (See Figure 1), Ashaiman is a peri-urban settlement adjacent from Tema on the Accra-Tema motorway. It was historically developed as a temporary settlement to accommodate workers employed in the construction of Tema, a major industrial hub of Ghana that still employs many residents of Ashaiman at its seaport or in one of many industries that operate in this area (Owusu, 1999). With earliest statistics estimating only 185 residents as late as 1952, it is fair to say the population size of the settlement has swelled rapidly (Peil, 1976). According to the most recent census reported by the Ghana Statistical Service, the population of Ashaiman rose to approximately 190,972 in 2010 (2012).⁸ At its height, population growth in Ashaiman reached an annual rate of 4.6% classifying it as the fastest growing city in Ghana (Ainuson, 2009:161). The state of infrastructure and access to basic services is varied but generally poor in Ashaiman, with living conditions in certain areas very dense and crowded, resembling slums.⁹ Ashaiman hosts a

⁷ This survey was implemented as part of the Comparative Water Governance in Africa Research Project (CWGAR), which operates out of the Institute for Resources, Environment and Sustainability, and is directed by Dr. Leila Harris and the EDGES team (Environment and Development: Gender, Equity and Sustainability) at UBC.

⁸ At the time of research, community partners in Ashaiman indicated to me that the current estimated population of Ashaiman was set at about 290,000, which was significant because it attributed to the municipality the designation of a metropolis.

⁹ The vast majority of Ashaiman's residential settlement is characterized by unserviced homes on unregistered land, where residents do not own formal title to property. The term 'informal' used here is not meant to imply that the

population mostly migrated from rural areas in search of employment in the capital region (Ainuson, 2009).

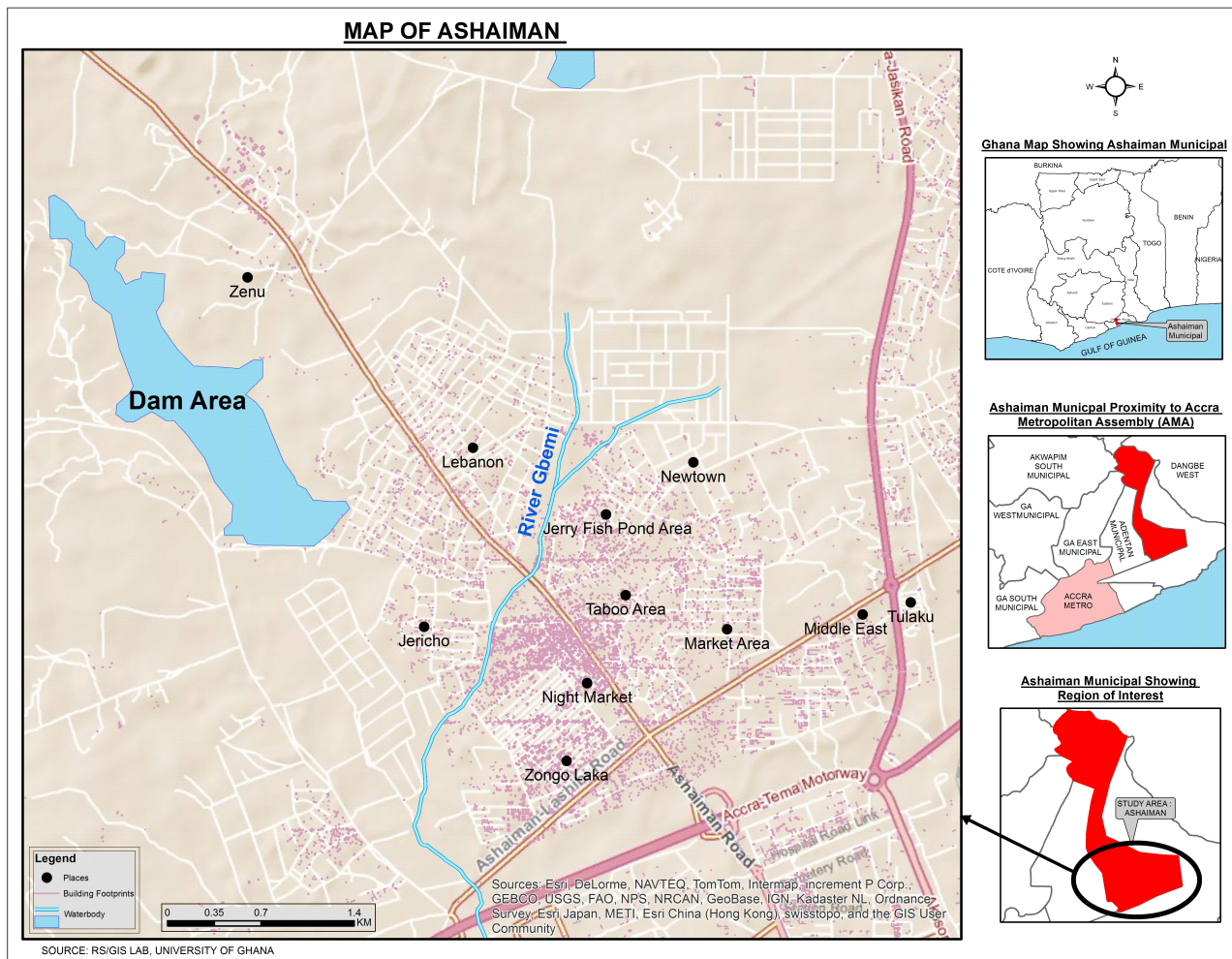


Figure 1: Map of Ashaiman (Map of Ashaiman (Source: RS/GIS Lab, Department of Geography and Resource Development, University of Ghana. “Map of Ashaiman,” October 5 2013; Reprinted with permission)

Ashaiman was selected as the case study for this research based on analysis of preliminary survey data which suggested that: (1) Residents of this settlement experienced frequent water shortages and precarious conditions for future water security, and (2) That there were no known water user groups or participatory mechanisms in the area for addressing

houses are not structurally stable or permanent. For further reflection and clarity in terms of the position I take in regards to informality, see page 27-29 of Chapter 2.

concerns of residents with regard to the management of water resources (Harris et al., 2012).¹⁰ This was considered important to allow experiences and ideas of water governance to come to fore without being necessarily biased towards certain structures such as LWBs. The survey also suggested that most households in Ashaiman were not directly connected to the municipal water network and that a heavy reliance on private water vendors meant that there were likely key insecurities, including the possibility that resellers held substantial economic power to dictate prices. Indeed, some estimates have the majority residents of Ashaiman generally paying three times more per unit of water than those directly connected to municipal pipelines (Ainuson, 2009). Although there is a general culture of acceptance around paying for water access, residents frequently worry about a lack of water (Harris et al., 2012). Moreover, almost all respondents indicated they had no knowledge of any group or representative handling water concerns in the area (*ibid*). Thus, studying participatory water governance in Ashaiman provides an opportunity to assess willingness and ability to participate as well as constraints that might be present and/or impinging on the likelihood of LWBs taking shape in this context.

According to Yin, “a case study is an empirical inquiry that investigates a contemporary phenomenon with its real-life context, especially when the boundaries between phenomenon and context are not clearly evident” (2003:13). In aiming to understand the everyday practices of procuring water in a particular location, I sought to gain a clearer understanding of the opportunities and impediments that were associated with the social and institutional context of water access and governance in this settlement. From the outset, I want to be clear that this research does not claim to represent the experiences of peri-urban dwellers in Ghana or even all residents living in Ashaiman. As well, while I am interested in the daily experience of water access, I do not claim to speak in the voice of these residents, nor do I put forth that this research represents their views in any comprehensive sense. My more modest goal is to improve understandings of experiences and context related to water access and governance, and to reflect on the implications for academic and policy debates. Using a case study method in this research framework adds insights that provoke and expand theoretical debates and policy propositions that have important bearing for thinking about heterogeneous water access regimes and the

¹⁰ The other survey site, Teshie, first established an LWB in 2007 and resembled cases that have been looked at in other peri-urban sites in GAMA by Morinville (2012).

governance processes that co-evolve with them. It is also intended and designed as an exploratory investigation, providing useful empirical detail to help explain difference in water access and governance across varied contexts.

Furthermore, I was initially especially interested in gauging the possibility of LWBs or water user groups being an accepted or productive forum for water governance in this context, where water supply is a common concern and yet governance practices for dealing with these concerns directly remain ambiguous or underdeveloped (a fuller characterization of water user group literature can be found in Chapter 3). Thus, my goal was to explore the opportunities and limitations for water access and governance in Ashaiman, keeping in mind that interventions of in the form of LWBs are occurring in similar settlements throughout Greater Accra but that no clear set of outcomes have been ascertained to be able to say whether they have been successful or not.

Data Collection

In-depth interviews: Capturing individual experiences of everyday water access and participation in governance

Individual in-depth interviews were conducted with the aim of eliciting personal accounts of water access and illuminating experiences of water management processes, both in terms of relations with the public utility, as well as interactions at the neighborhood-scale regarding concerns about water. A Ghanaian research assistant was present for support during most interviews with residents. The assistant spoke local dialects including Twi and Ga-Dangme, and was also proficient in English. This partnership was crucial in order to capture the essence of what was being said during interviews, at times when respondents switched languages, or where the use of English was unclear. Interviews were semi-structured, meaning that a certain degree of standardization was performed by using a set of pre-determined questions as a guide, while also allowing open-ended responses to elicit narratives and permit the changing of topics; thus new subject matter and questions also emerged from the dialogue itself (Wengraf, 2001; Bloom and Crabtree, 2006). Verbal consent was sought from each interview respondent once an introduction was made explaining the research project (see preface on page iii for further information regarding ethics approval). In most cases residents of Ashaiman were approached

randomly; a snowball sampling approach was also employed to extend the reach of the study once initial contacts were made. A total of 40 interviews were conducted, the majority of which were with residents of Ashaiman including more prominent community figures such as opinion leaders, managers of local organizations and members of the municipal assembly (See Table 1). Other informants included representatives of the municipal water company, Ghana Water Company Limited (GWCL), the Public Utilities Regulatory Commission (PURC), the Coalition of NGOs in Water and Sanitation (CONIWAS), and an engineering and development firm called Training, Research and Networking for Development group (TREND). Some of the interviews referenced here were group interviews led by other members of the research team.¹¹

Table 1 Interview Sample¹²

Stakeholder category	# of Interviews	% of Total	Location
Residents	24	60%	(Ashaiman) Tulaku, New Town, Night Market, etc.
Community and Opinion Leaders	6	15%	(Ashaiman) Obakatse, Tema, New Town
NGO representatives (CONIWAS, GHAFUP, etc.)	5	12.5%	Ashaiman and Accra
Public utility representatives (e.g. GWCL, PURC)	3	7.5%	Ashiaman and Accra
Other (e.g. TREND consulting)	2	5%	Greater Accra

Observations: Grasping routine subtleties of social organization around water and exploring scenes of community governance

Over the course of a two-month period, I spent weekdays in Ashaiman. Initial visits, before meetings and interviews were scheduled, mainly involved walking around with a community partner or a research assistant to ease into the research process and get a general sense of what everyday public life looked like in the context. For example, I was invited to observe a household survey that was being conducted on perspectives of personal safety in a residential area close to the market centre in Ashaiman. As we went from house to house, I took note of

¹¹ In some cases when interviewing businesses, government-related groups or organizations, multiple representatives were present and vocal. This is what is meant by the term ‘group interviews’, which should not be misunderstood as focus groups.

¹² This chart includes tape-recorded interviews as well as unplanned or unrecorded personal communications.

different water delivery systems and providers maneuvering through the streets and in different homes, occasionally approaching the people I passed to learn more about what I was seeing and what it meant for life in Ashaiman. Part of this study required understanding unspoken social interaction, particularly how water access is gained and how governance is enacted around water-related issues and concerns. Hence, observational techniques were particularly important for investigating the context in which social organization and local institutional formation occurred in Ashaiman. Although some of these dynamics might have been verbally described, the complex activities that make up “institutional interaction” cannot be fully captured by individual interviews alone (Denzin and Lincoln, 2011:535). Field notes were taken regularly to document observations, and further questions based on observations were used to probe the themes of governance and organization through individual interviews.

Data Analysis

The research assistant aforementioned carried out all transcriptions of interviews. Coupled with community partners, the assistant also provided support filling in some of the details around context, which were relevant to interpret the responses as accurately as possible, for example related to comments made about political campaigns predated my fieldwork. I then coded the data from the transcriptions by reviewing and analyzing for patterns, themes and discrepancies. Simply put, codes are attributes that are “summative, salient, essence-capturing, and/or evocative” and assigned to a portion of language-based or visual data that are deemed relevant for the research questions (Saldana, 2013:3). Themes can be drawn directly from data using an inductive approach, or they can be deduced from study conducted by the researcher prior to fieldwork, what Ryan and Bernard (2003) refer to as an *a priori* approach. In this research I incorporated a mix of both of these approaches, in an attempt to capture new and divergent concepts and explanations that emerged from open-ended questions. In this phase of analysis, I also paid attention to narratives, though these do not figure explicitly in the writing. Narrative analysis emphasizes the nature of interaction between inquirer and respondent and acknowledges that the story that emerges from this interaction is co-created (Reissman, 1993:31). This method was particularly useful in the conceptualization of Chapter 3, where conventional concepts of participatory water governance were not met with familiarity by informants in Ashaiman, and as

a result I had to shift my approach and framing in order to elicit the language and narratives that were more well suited to the respondents.

Limitations and Positionality

A few shortcomings within the research methodology are important to note. Although linguistic support was enlisted to encourage interviewees to speak in the language they were most comfortable, many respondents nonetheless opted to answer in English. Although English is the national language of Ghana, in most cases it was not the native tongue amongst participants and in certain cases this might have impacted the articulation and clarity of their responses as well as their sense of ease in the interview. Moreover, as mentioned, this thesis is based on a qualitative case study and two months of primary data collection, and therefore the sample size is quite small. The analysis and conclusions I draw from this research do not therefore categorically represent the experiences of all residents of Ashaiman, nor those residing in Greater Accra. Finally, coming from an undergraduate degree in Social Sciences in which I specialized in International Development and Globalization, I am acutely aware of deep-seated tensions in development policy and practice. It is no doubt partially in light of this that I am driven to question the guiding principles that summon certain kinds of development projects and interventions. Nonetheless, I recognize that my positionality as a white, female researcher and student, inclusive of my education, mobility, class, gender, age and race, whether consciously performed or not, ascribe to me an enduring history and aura of privilege. In particular, the freedom to travel between countries was regarded with pronounced envy and admiration by my colleagues in Ghana, and likely led to a somewhat amplified perception of my personal clout and power. The dynamic created by both real and perceived differences in power and privilege undoubtedly influenced the exchanges that took place during interviews. With these limitations in mind, I have taken care to conduct this research with respect, humility and cultural sensitivity. I have also made efforts to ensure that the interpretations made in this thesis are accurate reflections of the stories and opinions shared with me during my time in Ghana, in some cases by following up with informants to clarify the meaning of their responses before including them in the chapters below.

Chapter Summaries

This is a papers-based thesis, structured as two primary articles that will be sent for publication. By this design, chapters 2 and 3 make separate arguments but are based on research data collected from the same research sites and using consistent methodological approaches. In the first chapter, I explore everyday practices of water access in Ashaiman mainly from the perspective of residents. The analysis is structured around observations and interviews as outlined above, which are linked with current literature pertaining to alternative modes of water service delivery in urban and peri-urban areas to consider how different forms of connections come to constitute alternative, flexible infrastructures of water access. In assembling these pieces, I seek to highlight that water is not only provided *to* residents of Ashaiman, rather it involves deliberate intellectual and physical activity, including negotiating household resources and finances, accruing water source knowledge and establishing networks. These activities can be usefully represented through terms offered by informants during interviews, like “labyrinth of strategies” or “chasing for water”. Chapter 2 endeavors to illuminate various strategies of extending access to water beyond the scope of formal services, as well as implications of these for considering possibilities for improved access as Ashaiman continues to grow and develop as a municipality. A version of Chapter 2 has been published in a Special Issue of *Water Alternatives* exploring the topic ‘Informal Space in the Urban Waterscape’. The article was published in February 2014 and co-authored with Cynthia Morinville.¹³

Chapter 3 interrogates the concept of participatory water governance, questioning what is defined within the scope of water governance and how putative benefits of participation might be realized. The chapter offers ways of understanding how particular social arrangements for governing water resources are envisioned and constructed in development policy. Results from fieldwork are used to convey narratives that I argue productively unsettle conventional ideas of water management and governance. I explore possibilities for expanding participatory water governance frameworks, especially to overcome the notion that effective dialogue must happen around pre-determined themes. In essence, the chapter interrogates participatory water

¹³ Cynthia Morinville holds a Masters of Arts in Natural Resource Management and Environmental Studies from UBC. Her thesis, entitled ‘Beyond the pipe: Participation and alternative water provision in underserved areas of Accra, Ghana’ (2012) addresses related issues that may be of interest for this readership. Although I reference Morinville’s work in the thesis, the article published from Chapter 2 draws on primary data gathered through my own original fieldwork.

governance--how it is framed, evaluated and experienced. It demonstrates how experiences of water access are entangled in personal and social lives and well-being, and illustrates these findings more robustly using the hydro-social as lens for analysis.

CHAPTER 2: “Chasing for Water”

Everyday practices of water access in peri-urban Ashaiman, Ghana¹⁴

Introduction

In the absence of affordable and reliable state services for basic needs, alternative strategy-making is commonplace amongst the urban poor, and many are able to meet basic daily needs through a patchwork system of informal activities and networks. For instance, the popular means of public transportation in Ghana exemplifies how services can be organized and mobilized outside of government-sanctioned spaces to meet basic needs. An abundance of taxis provides little in the way of affordable transit for a highly mobile population (Ghana Statistical Service, 2008). Peri-urban settlements in Greater Accra are usually constructed in locations where residents can commute to and from industry and employment in the city centre. Thus, lorries have been converted into large vans called ‘tro-tros,’ inside of which rows of seating accommodate as many as 15 passengers at a time, each for as little as 5¢ USD. Tro-tros have become the dominant means of public conveyance, providing what has become a high functioning service that allows many people to get around Greater Accra affordably, if not always quickly.

Practices surrounding the use of mobile phone networks offer another relevant illustration. As with many other contexts in the global South, busy streets are speckled with brightly coloured umbrellas and kiosks displaying the names of mobile phone providers like MTN, Airtel, Vodaphone and Glo. Accounts are generally set up as a series of pay-as-you-go transactions, so that clients can top up their minutes by purchasing phone credit for as little as 1 Ghana cedi (50¢ USD). Moreover, it is not uncommon to own more than one phone and to buy credit from multiple networks, thereby optimizing one’s ability to communicate wirelessly despite finicky connections. To earn a living, urban dwellers in the Greater Accra Metropolitan Area (GAMA) are also likely to engage in multiple forms of informal employment to supplement their income (Hart, 1973; Owusu et al., 2007; Ghana Statistical Service, 2008). The above are indicative of some of the practices that the urban poor engage in to improve security by forging numerous

¹⁴ A version of this chapter has been published in a recent issue of *Water Alternatives* (Peloso and Morinville, 2014).

connections, engaging in small, repetitive transactions and seeking multiple means to supplement income.

Similarly, uncertainty is at the forefront of daily water access in urban and peri-urban Ghana. Established in 1999 and responsible for the provision, distribution and management of urban water supply in Ghana, the Ghana Water Company Limited (GWCL) meets only about 60% of the total water demands of the metropolitan region (Nyarko et al., 2008; WaterAid, 2008; Ghana Government Portal, 2013; JMP, 2013). As such, maintaining several access points, both within and outside of the formal water network, is crucial for many urban and peri-urban dwellers to generate security.¹⁵ In the words of Dr. Jacob Songsore, a professor from the Geography department at the University of Ghana—Legon, Ghanaians access water through a *labyrinth of strategies*. Songsore explained that even though pipes are many things – sturdy, visible, traceable – they are only somewhat reliable and accountable, and to be sure they are not suitable to every environment, especially illegal or haphazardly built settlements in the urban or peri-urban areas of the country (personal communication, 29 May 2012).

Theories of everyday practice are drawn upon to examine the actions people take to improve their water security, by utilizing and resisting different features of the water network. I focus on the everyday practices with which people gain access to water, which are taken to mean the “multiple, repetitive actions that people engage in that stimulate social order” and enable water access to be managed and extended to those otherwise cut off from a secure supply (Jones and Murphy, 2010). Others have studied these activities as sites of civic governmentality and political claims-making (Roy, 2009b), examples where the urban subject is engaged in a process of ‘deep democracy’ (Appadurai, 2002) or ‘governmentality from below’ (Chatterjee, 2004). Rather than focusing on dynamics of inclusion and exclusion in political society, my focus for this chapter is to consider diverse and subtle opportunities to improve water security by (mostly) individual everyday practices. In the next chapter, I explore the notion of participation, imagining a hydro-social approach to governing water access and other concerns in peri-urban communities.

¹⁵ Water security is understood as the procurement of water of sufficient quantity and quality to answer one’s household needs. For a discussion of different perspectives and conceptualisations of water security, see Cook and Bakker (2012).

Before going further, it is worth emphasizing that water access and security are not experienced equally nor can they be considered synonymous with either informal or formal water services. Rather, complex, variegated systems of water provision and distribution mirror many of the wider socio-economic disparities that increasingly characterize urban spaces (Graham and Marvin, 2001), including those of urban and peri-urban Accra (Osumanu and Abdul-Rahim, 2008). In the course of highlighting the practical ways in which people draw on informality for their water supply, I do not wish to overlook that “inequitable social relations ensure that some individuals, by virtue of their class, gender, ethnicity, and so on, are better placed than others to deploy resources, to shape rules, and to exercise power and rights” (Cleaver, 2009:131). In the context of this case study for example, the magnitude of water insecurity is greater for those who cannot afford to store water when flows are interrupted for multiple days. In response to a question posed regarding water availability, a 26-year-old man living in the Zenu District of Ashaiman told us that he had to “chase for water” (Interview, 29 June 2012). The word *chase* highlights the limits of everyday practices by evoking the haste, wit and toil involved in securing water in the absence of connections to the official water network. I understand this chase as an example of everyday practice, both because water is a daily basic need, and because each day, many parts of the urban metropolis can be cut off from the municipal system as per the rationing schedule.

Moreover, analyses of subaltern politics have often classified the poor into two rather simplistic roles: the submissive and passive, or the rebellious and revolutionary.¹⁶ To work outside of this sort of dichotomy, I aim to highlight the everyday practices of putting “structurally formed capacities to work in creative and innovative ways” that allow residents to ameliorate their basic water security in absence of regular and consistent connections to the official water network (Sewell, 1992:5). Without a consideration of the elements that enable informal water services to reach residents of Ashaiman, the picture of water access is vastly incomplete and the opportunity to understand what informs these practices is squandered.

This chapter investigates some of the ways that residents of Ashaiman manage water access. It does this by showcasing the necessity of being able to connect to multiple sources of

¹⁶ Exceptions include Scott, 1985; Bakker et al., 2008; Bayat, 2010, and Anand, 2011, who provide more nuanced analyses of the role of the water user or urban poor in making resource claims.

water at any given time, a possibility enabled by informal vendors whose customer base is frequently anonymous and free to go to other providers. Furthermore, it emphasizes the interplay between formal and informal networks that are crucial to water access. In taking an actor-oriented approach, it is also my aim to contribute to a clearer understanding of how urban residents perceive, experience and describe water access, to consider both the advantages and disadvantages to obtaining water through the water utility and informal water services. Last but not least, following Roy (2009a) and others, this chapter makes a contribution to analyses of heterogeneity and multiplicity within and between metropolitan modernities and seeks to resurface and inspire broader questions of water infrastructure ‘ideals’ or what Gandy (2008) calls “hydraulic decorations.” I am also interested in considering informality as experienced through and linked to particular modes of social organization, cooperation and collective behavior (AlSayyad, 2004). With these objectives in mind, I engage with two main research questions in the context of Ashaiman:

- (1) How is water access established in a context where piped water services provided by the formal municipal network are erratic and unreliable?
- (2) What lessons can be learned by looking at everyday practices of water access in terms of how people experience and perceive various types of water services?

Methods

This case study analysis derives in-depth explanations of water access dynamics, emphasizing the experience of residents of Ashaiman to the extent possible. In-depth interviews and observations were used to probe the experiences and perspectives of residents, particularly to uncover qualities of the informal water network that permit access and service where the formal system does not. Interviewees were asked a suite of questions following a semi-structured, open-ended format, about their uses of water and their perspectives on water quality, affordability, access and management. Through interviews, I also intended to elicit descriptions of existing relations with GWCL or any other actors who could be seen as having authority over water delivery in their area. As shown in Table 1 in the former chapter, the interview sample includes mainly residents and community leaders from Ashaiman, as well as representatives of non-governmental organizations, and two public officials employed by GWCL. Second, unstructured

and semi-structured observations were carried out throughout the eight-week fieldwork period, paying close attention to the everyday practices through which residents of Ashaiman secured water for drinking and other personal or household uses. Very little data currently exists on the case study site specifically, and hence, basic information on demography, housing and water access is supplemented by a comparative survey implemented prior to fieldwork in 2011-2012. The survey, carried out by the UBC EDGES team in with the support of local collaborators (at the University of Ghana-Legon, and the University of the Western Cape), was conducted with 499 individuals in underserved settlements of Accra, Ghana and Cape Town, South Africa (See footnote 7 for further details). A total of 243 residents were surveyed across two peri-urban informal settlements in Greater Accra: Teshie (120 survey respondents) and Ashaiman (123 survey respondents) (Harris et al., 2012). Results mobilized here include both aggregated data for Ghana and data disaggregated between the two sites. When discussing the results of the survey, I specify whether they represent the sample from Ashaiman only or the total aggregated population across both Ghanaian sites. Finally, this research also uses secondary sources of data, employed to review national water policy documents and grey literature (e.g. public media sources like ghanaweb.com) for information on how water resources are distributed and managed across urban and peri-urban Ghana.

Apart from the issues raised in the introduction, there are a few additional limitations to the research methodology and approach that bear mentioning. This research was conducted during the rainy season in Ghana and as such water availability and access may have appeared differently in seasons when water is scarcer. Furthermore, reliable quantitative data are not available detailing the percentage of the population relying on particular sources of water in Ashaiman. The intent of the qualitative data presented here is not to substitute as a complete picture of water access but to outline thoughts and perspectives of water access articulated by interviewees. As such, this chapter should not be mistaken for an empirically conclusive account of the advantages or disadvantages of informal or formal water services, nor a comprehensive account of all aspects of water access and daily experience of significance in the context of Ashaiman. Rather, my aim is to highlight under-theorized practices and experiences of informal water access that may have important resonances with water planning and policy goals in peri-urban informal sites.

Theoretical Points of Departure

Informality

[On the fringes of developing cities,] water and sanitation needs of the peri-urban water poor are not being met by conventional approaches such as the expansion of networking public utilities nor through formal large-scale private sector companies. Instead, much of their needs are met through a dizzying array of non-conventional and often officially unrecognized means such as informal operators, privately operated wells, gifts from neighbors, rainwater harvesting and clandestine connections (Allen et al., 2006:334).

Informality is arguably becoming less of an exception and more of a “central idiom of urbanization” (Roy, 2009a; see also McFarlane and Vasudevan, 2014). Recent policy and academic research is pushing for a greater recognition of informality as a means through which the urban poor can eke out a living while facing resource insecurity and having little disposable income (see for example UN-Habitat, 2012). Initially, the work of Keith Hart (1973) and the International Labor Organization (ILO, 1972) are credited with demarcating a distinction between informal and formal sectors. At this time, informality was largely portrayed as synonymous with petty economic activities engaged in by the urban poor who were denied access to waged employment (Bangasser, 2000; AlSayyad, 2004). This sectorial approach has since been widely criticized as dualist and discredited on account of its inability to reconcile the continuity between informal and formal activities and entities (Bromley, 1978; Mehta, Leach, and Scoones, 2001; Sindzingre, 2006; Myers, 2011). Also referred to as “private” (Nyarko et al., 2008), “needs-based” (Allen et al., 2006), “community-based” (Osumanu and Abdul-Rahim, 2008) or “artisanal” (Bakker, 2003), these informal services, in Ghana and elsewhere, usually source their water directly from municipal pipelines and re-sell it to people who do not have direct in-yard or in-house connections (Pangare and Pangare, 2008; Morinville, 2012). A more obvious example of this is sachet water, which is essentially municipal water put through a filtering system, heat-sealed in 500mL plastic packages and often chilled and sold by street vendors as “pure water”. Sachets have become very popular and are a staple source of drinking water across socio-economic class and age groups, though particularly popular amid young Ghanaians (Morinville 2012; Stoler et al. 2012).

It is important to note that informal water services do not normally operate outside of municipal services. Alternative providers typically source water from direct connections to formal supply. In a move to emphasize linkages between non-formal and formal systems of management, Bakker (2003) suggests the analytic concept ‘archipelago’ to connote the overlapping of strategies to gain access to water. In this literature, it becomes clear that the relationship between official service providers and their informal counterparts differs widely across contexts and can be complex and contradictory. For example, some studies portray this rapport as hostile, with the formal supply system attempting to systematically eradicate informal water vendors.¹⁷ On the other hand, the state may have a direct stake in perpetuating informal systems of water delivery in order to protect its own legitimacy (Mehta, 2005), and to more flexibly and reliably extend services where they otherwise are unable to do so. More often than not, informal services are begrudgingly acknowledged but largely overlooked by formal systems or municipal providers.

Notwithstanding a growing interest in the study of informality in recent years, the concept continues to suffer from ambiguity and inconsistency (Roy and AlSayyad, 2004; Roy, 2005; McFarlane and Waibel, 2012). In relation to water access, there remains a lack of clarity in scholarship as to what constitutes informal water services, how these are operationalized by the urban poor, and what is the nature of their relationship to formal networked supplies (Allen et al., 2006). This may be in part a result of the negation of informality as an important locus of study, or as a potential linchpin to water access and urban development. Miraftab argues that a neglect to taking seriously alternative arrangements for basic services in urban spaces signal the persistence of ‘Western’ planning ideals in developing contexts, which have the power to “suppress the subaltern conceptualization of cities and of planning” (2009:45). Contrary to the connotation of the informal as unstructured, water accessed externally from pipelines and taps can also constitute highly organized strategies, albeit through a range of different networks and arrangements (Bayat, 1997; Bakker, 2003; Myers, 2011).¹⁸ As the importance of informal water provision systems gains recognition both in terms of the proportion of population they serve

¹⁷ See for example Allen et al., 2006 on the case of Cairo.

¹⁸ Informality is not the only way to conceptualize alternatives to “formal” service provision, for example these have also been referred to as “gray space” (Yiftachel, 2009) or “aformality” (Kajri, 2014), among others.

(Collignon and Vézina, 2000) and the role they play for supplementing water access (Kjellén and McGranahan, 2006), the enduring inadequacy of insights into the actual experiences of the urban poor who are served by these services becomes increasingly clear. The operations of informal water services are especially important in unregulated peri-urban settlements, where per capita service standards are relatively lower than in formal areas of the city (Allen et al., 2006) and where density, heterogeneity and anonymity create challenges for conventional approaches of networked public utilities (Roy and AlSayyad, 2004).

Although this chapter makes use of the term informal, it is my aim to expand more narrowed views by showcasing the multiple ways that informal water services are operationalized and make daily life possible in Ashaiman, Ghana. Hence, the term ‘informal’ is used throughout this thesis to refer to extensions of water services that cannot be fully accounted for by GWCL’s municipal pipeline or private tanker trucks services, such as small-scale water vendors or the local plastic sachet water industry. It is also meant to draw attention to the fact that many of these services are not recognized as water providers or sanctioned by the state.¹⁹ Following Roy, I theorize informality as a mode, or a “series of transactions that connect different economies and spaces to one another” (2005:148). This approach is also in line with McFarlane and Vasudevan (2014) who propose informality as a set of “mobile planning processes” whereby the city is re-assembled through the diverse capacities urban residents enroll to cope with “incessant insufficiency.” This chapter takes as a given that formal and informal dynamics are interlaced within the same water network and that this fluidity permits and perhaps requires actors to simultaneously engage with a range of formal and informal water provision. Building on several critical scholars just noted, I depart from earlier views of informality as discrete from, or as operating merely out of a failure of, the formal sector.

Everyday Practice and Human Infrastructures

[Many] African cities are characterized by incessantly flexible, mobile, and provisional intersections of residents that operate without clearly delineated notions

¹⁹ Informality is a nebulous, contested concept that can take various shapes and is thus open to interpretation. For alternative perspectives and approaches to informality, see Hossain (2011) on the informalisation of the formal public utility. Roy’s work (2005, 2009a) offers a critique of informality as a theoretical construct.

of how the city is to be inhabited and used. These intersections, particularly in the last two decades, have depended on the ability of residents to engage complex combinations of objects, spaces, persons, and practices. These conjunctions become an infrastructure – a platform providing for and reproducing life in the city (Simone, 2004:407-408).

Although trends in the literature suggest that informal service provision is increasingly crucial in urban and peri-urban sites across Sub-Saharan Africa and globally, there remains a need for richer characterization of how the urban poor actually make use of informal services through everyday practices that in turn serve to improve water or livelihood security (Kjellén and McGranahan, 2006). For Scott, working in the context of Southeast Asia, everyday informal practices “are central to understanding the workings of the contemporary urban hydraulic system” especially as they confront and compromise the authority of engineers or technocrats to control the water system (2009:545). Moreover, analyses of everyday practice need to be linked more explicitly with recent theories of urban water networks and political ecology discourses, towards considering alternative hydro-infrastructures or pressures through which people connect to water sources on a daily basis. In his work on water supply in Mumbai, Anand (2011) considers that water is subject to and amenable to multiple pressures, and that access to the technologies that make water flow (i.e. create pressure) is mediated by social connections as much as by pumps. Simone similarly studies these social connections in Johannesburg, South Africa, using the framework *people as infrastructure*, defined as a process of conjunction whereby infrastructure is generated by combining various objects, spaces, persons and practices to create “a platform providing for and reproducing life in the city” (2004:408). Similarly, Bayat (2010) argues that it is the shared practices of large numbers of noncollective actors that trigger much social change. He calls this “social nonmovement” *the quiet encroachment of the ordinary* and likens these practices to a kind of subaltern agency. I wish to make a link between the concept of conjunction as a strategy of security-making in the face of uncertainties in Ashaiman and the unconscious agency that Bayat and others deem critical to the perpetuation of life in these contexts.

A conceptualization of the ways in which water flows are re-directed and extended through individual strategy-making and social- or human-extended infrastructures requires an acknowledgement of unequal power dynamics and draws on debates around agency and

structure. Important headway has been made, particularly in the field of political ecology, to show how water management is neither apolitical nor objective but is rather imbued with powerful political agendas that have far-reaching implications for shaping networks of access (Bakker, 2004; Swyngedouw, 2004; Kaika, 2005; Gandy, 2008; Harris, 2009a). Swyngedouw (2004) points out that human agencies engendered by water infrastructures and management institutions are laden with differences of power. Among the range of topics of interest to these literatures, I wish to focus on the subtle activities that low-income urban populations may engage in to confront problems of unequal access to water and unreliable formal provision.

Following Anthony Giddens' seminal works (1976, 1979, 1981, 1984), Sewell argues that to have agency, or to be an agent, is to be "capable of exerting some degree of control over the social relations in which one is enmeshed" (1992:20). From this perspective, the practice of drawing on a diverse set of water sources can be seen as evidence of a (limited) scope of maneuverability in a complex and unequal waterscape and set of infrastructures, in a word – agency. Following Sewell, the approach I take starts from the conscious understanding that the urban poor are capable of "putting their structurally formed capacities to work in creative and innovative ways" to negotiate access to water services (1992:5). People's intended and unintended practices also influence, constitute and reproduce structures, such that "agency and structure come together reflexively" (Jones and Murphy, 2010:369). In this vein, the structure of the urban water network can be understood as fluid and changing, and as having the capacity to expand, contract, bend and reconfigure over time. Similarly, the capacity to act (agency) is continuously re-negotiated and co-constituted by these structures and infrastructures. There are certainly constraints of these systems overall, but there are also spaces of maneuverability that demand attention.

In this light, understanding the deficiencies of water infrastructures in reaching vulnerable populations requires an appreciation of the ways that people improvise, strategize and make decisions in the face of such water insecurity and structural imbalances of power. Wilshusen suggests that a practice-based understanding of power relationships is important because "it suggests that micro political interactions simultaneously produce subtle, incremental tensions and reactions (both material and symbolic) *and* contribute to the perpetuation of certain broader social structural relationships" (2009:141). Engaging the practices of everyday life

makes it possible to derive a clearer sense of the realities of water access by bringing to light how and why people selectively or unconsciously make use of different services and social norms. Moreover, it leads to the question of whether everyday practices and the choices people make can collectively reinforce certain water flows and diversions.²⁰ In the results and analysis section (p.34), I explore how residents of Ashaiman described their experience of water access, underscoring the references made to formal and informal services. Following which, in the concluding section, I grapple with what it may mean for considering informal services as part of a longer-term vision of sustainable water service provision in this context.

Context: Water Access in Urban Ghana

Recent reports show that in the last decade, the number of people with access to safe drinking water has climbed steadily in Ghana's cities, with approximately 60% of urban residents having access to improved sources (JMP, 2013; WaterAid, 2008; Ghana Government Portal, 2013; Nyarko et al., 2008). Despite progress, water access remains a concern for the majority of those living in the capital region of Accra, where 75% of the population lack continuous 24-hour water supply and an estimated 10% do not have any running water at all (Ainuson, 2010; WaterAid, 2005:8). GAMA's urban drinking water is formally managed by GWCL and is sourced from two sites: Weija water works on the Weija River located to the West of the capital, and Kpong water works on the Volta River located to the North East. GAMA is an urban agglomeration that includes the capital city region's Accra Metropolitan Area (AMA), Tema Municipal Area and the Ga District. Currently, GWCL only meets the demands of about 60% of urban and peri-urban residents (JMP, 2013; WaterAid, 2008; Ghana Government Portal, 2013; Nyarko et al., 2008). According to a senior official at GWCL, the networked urban water system is affected by a daily supply deficit estimated at 60 million gallons (Interview, 6 July 2012).²¹

Due to the inadequacy of water resources to allow for equal distribution throughout the urban region, GWCL has implemented a rationing schedule which manually directs water flows

²⁰ For more analysis on subaltern politics and everyday claims-making for access to natural resources, see Scott (1990) on "infrapolitics"; Bayat (1997) on "quiet encroachment of the ordinary"; and for water access more specifically see Anand's (2011) "politechnics of water supply" piece on Mumbai.

²¹ A percentage of this is attributable to unaccounted or unpaid for water.

to certain areas of the city on select days (Interview, 6 July 2012; see also Adank et al., 2011). In line with evidence of significant intra-urban differential suggesting that the urban poor living in peri-urban settlements experience greater marginalization from services than wealthier urban counterparts (Songsore, 2008), some areas are reported to receive water supplies once a week or not at all, while other areas may be serviced seven days a week (Government of Ghana, 2007: 26; Stoler et al., 2012; Stoler, Weeks, and Fink, 2012; Morinville, 2012). Even apart from this rationing schedule, water flows are reported to be intermittent at best. When the neighbourhoods are scheduled to be serviced, water may flow for a mere few hours or run only through the night. While both higher- and lower-income households are affected by inconsistent water flow, the former can often afford the purchase and installation of polytanks²² to store water, whereas the urban poor rely more heavily on informal vendors, community standpipes and surface water sources, as well as storage in smaller containers and procuring water on a daily basis (Songsore, 2008; Ainuson, 2009).

The GWCL recognizes the inequities in the system and has implemented a lifeline tariff, which is designed to offer a basic amount of water at a lower cost to lower-income households through a two-block tariffs system.²³ As previously stated, a large proportion of the low-income population in Ashaiman does not have direct access to the municipal water network. There is minimal statistical information documenting water access and pricing in Ashaiman to date, as such I provide a basic characterization below, drawn from a collection of sources, including our household survey (Harris et al., 2012).

²² In Ghana, water is often stored in large, black plastic overhead containers for household use. Institutions such as schools, or those who wish to sell water, can also purchase even larger sizes. Poly Tanks Ltd. is the oldest and largest distributor of these water storage containers in Ghana; as a result, Ghanaians simply refer to them as ‘polytanks’.

²³ GWCL’s tariffs structure was reviewed in 2013 and the PURC approved a 52% price increase for water (detailed prices are provided in the discussion section below). This was accompanied by a 65-80% increase in electricity prices. Both increases are effective as of 1st October 2013. With the last major tariff adjustment dating from 1st June 2010, this new adjustment is meant to “assist the GWCL meet key operational costs...and operation and maintenance costs” (PURC, 2013).

Ashaiman, Ghana

According to Harris et al.'s survey results, only 11% of respondents in Ashaiman owned the house they were living in (2012). Most residents in Ashaiman were renting rooms in compound housing units. Almost half of the sample from both Ghanaian sites bought their water from a vendor (47%) and only 4% responded that they had an in-house connection. Other common sources included communal standpipes, in-yard connections and public water tanks. Sixty-four percent of survey respondents in Ghana either strongly disagreed (52%) or disagreed (12%) that "It is easy to get water." Of these, 42% indicated they agreed with the statement that "We face problems with access to regular water," while on the other hand 60% either agreed (50%) or strongly agreed (10%) that "[They] always get enough water for drinking." While the survey helped to characterize general trends in water access, the following section aims to uncover further detail into the everyday practices and tensions experienced by residents of Ashaiman as they seek to maintain access to safe and reliable water.

"Chasing for water" in Ashaiman: Analysis of Everyday Practices

The vast majority of residents I spoke with lacked direct, in-house access to pipe-borne water. Through fieldwork, I realized that the lack of connection could not be solely explained by the absence of technological infrastructures (i.e. pipes or taps), but that water access mirrored more complex issues involved in the conduct of coping strategies necessary for everyday life in peri-urban Ashaiman. By exploring the practices through which residents negotiated and secured access to networked water, the importance of establishing water security by forging a diversity of flexible, informal connections with re-sellers was underscored. The data presented below is organized thematically to address some of the recurrent themes and tensions raised by interviewees, including expectations and frustrations of the tap, housing arrangements, billing and transactions, and mobility. Finally, in the discussion section that follows, I explore the connections between informal and formal water services, and the everyday dynamic practices of generating water security in peri-urban settlements that serves to complicate notions of universal water access and the technologies of provision.

Talk of the tap

Middle and higher-income households in Ashaiman might have in-house connections to piped water as well as polytanks for storing water (Adank et al., 2011). Those who did not have ready access to these conveniences invoked them as symbols of affluence and linked tap water with ideas of dignity and freedom. A 23-year old man was sitting at a phone credit booth with his friends, sporting sunglasses and stylish clothes when I approached him for an interview. When I asked him to describe the situation with regards to water in Ashaiman, he emphasized the labour required to walk down the road with his bucket to a neighbourhood seller, shaking his head as he said:

I just want to live my life like an....American. I want the freedom like they have the freedom. Like America when it comes to something like the water, we have been watching the politics on the television...so we know what is going on...as for water you don't have to suffer to get it. Am I lying?
(Interview, 15 June 2012)

Another respondent expressed an adamant preference for government-managed water services. When asked whether she would have preferred water sourced from a direct connection or the water sold from polytanks by her neighbour just two doors down, one middle-aged woman living in a newer area of Ashaiman called Zenu said “We prefer that one, the government one,” adding that she wanted the pipe to come to her district “so we will be free” (Interview, 29 June 2012). When asked when she thought the pipe would be installed in the Zenu area, the interviewee responded that she had been told there would be pipes, but that it would just take time (*ibid*). Although these two examples show how people expressed a desire for tap water in their homes, and the convenience this would likely afford, others described experiences where the tap, whether in the home or a communal standpipe, could also be experienced or perceived as a hindrance to water security and notions of freedom.

Disruptions to piped water services were referred to fairly regularly in interviews. It was rare, however, for these interruptions to be explained through a reference to the GWCL rationing schedule. Respondents indicated a lack of coherence and an element of unpredictability in water supply that seemed to aggravate the experience of water insecurity. For example, it was common to hear words like “cut-off” or “closed” or “locked” used to describe unyielding pipes, interruptions in flow, or disconnections that might result from non-payment for water. There was

minimal awareness or knowledge conveyed that at times, water was being purposefully re-directed in line with the rationing schedule. To illustrate, two young sisters selling vegetables outside of their home in Night Market explained that although there was a shared standpipe in the courtyard of their compound, “it can go off anytime” in which case water could cease flowing for up to three days (Interview, 5 July 2012). During this period they collected water from neighbouring vendors by the bucket or used water stored in advance. Most other interviewees engaged in similar practices. When water was not accessible in the immediate surrounding area, they would simply go farther afield, in extreme cases taking a car to a neighbouring municipality called Tema, for example, where water was said to be more reliable (Interview, 20 June 2012; Interview, 29 June 2012).

It was in part due to this failure of piped services that there was a perception that exclusive dependence on formal water provision would result in more acute vulnerability and water insecurity. A woman approximately 35 years old living next to the market explained that if you relied on the piped water, you might find yourself in a position where you would have to wake up in the middle of the night to fill your barrels (Interview, 15 June 2012). Even those with a higher or more regular income experienced difficulties planning their water use around piped services. For instance, a retired professor recalled that when he went to bathe that same morning he found that he could not get water (Interview, 8 July 2013). However, he was also able to afford to purchase sachet water or store large quantities to supplement water for drinking or perhaps even household needs: “We have water sachets...which are helping a lot of us too. If you don’t like this (tap) water you buy a sachet and put it in your room” (*ibid*). Another woman who sold alcoholic drinks in the Lebanon district similarly said, “We have a pipe but there’s no water in it” (Interview, 27 June 2012). At the time, she was securing water by collecting rainwater for washing and cooking, strategically placing large metal pans around the courtyard of her compound (*ibid*).

As previously mentioned, the utility implements a rationing schedule by which water flow is directed to certain neighbourhoods on specific days. According to a senior representative of GWCL, the rationing schedule was designed with the purpose of promoting equal distribution of limited water resources across a highly populated area (Interview, 6 July 2012). Despite this complex scheme, the schedule is far from allowing every area of urban Accra to receive an equal

amount of water. Certain areas are serviced ‘continually’ (i.e. their mains are opened to the municipal flows at all time, but the neighbourhood might still suffer from pressure issues and general shortages affecting the system as a whole) while other areas might be scheduled to receive water only one day a week or not at all. Although it has allegedly been operational for over 15 years (Adank et al., 2011),²⁴ the specifics of the rationing schedule are still not made public and most people did not seem to be given advanced notice of water flows and cut-offs. People may rely on occasional radio announcements indicating where water is flowing on a certain day, but when respondents described their experiences with piped services, it appeared that distribution was neither coherent nor consistent.

Though the water utility is technically in charge of managing the flows of water in Greater Accra, through the pipeline and the rationing schedule, these infrastructures can be inaccessible, unintelligible and unpredictable. What is perceived as the “closing of water” is experienced on a regular basis, leading residents of Ashaiman to draw on other means and services by going out and fetching or “chasing” for water. They are ultimately dependent upon their own scouting abilities, communications with one another, as well as live radio announcements, to know when and where they can access water services. In these senses, residents make use of their situated knowledge to reassess water security each day, relying importantly on a capacity to adapt and maneuver a landscape of sporadic distribution from GWCL.

Although in some ways having a tap in one’s home was conveyed as ideal, experiences of water prices and means of payment also significantly trouble this ideal. For example, when asked how they pay for water and whether the price was affordable, responses indicated that paying for a direct connection to piped services could magnify experiences of insecurity by barring self-management of water use and costs. I explore these dimensions more closely in the following two sections.

²⁴ Other sources claim the rationing schedule began as early as the 1980s (Stoler, Weeks, and Fink, 2012).

Price

Since few households have a connection to the official network, most are dependent on water vendors. When asked whether the price charged by the vendors was good or fair, respondents generally felt it to be manageable but were also clear that they had to accept whatever price it was since there was nothing they could do about it; the price of water was up to the discretion of the vendor (Interview, 29 June 2012). Aware of the vulnerability faced by the poor given the autonomy of vendors to charge higher rates for water, a representative from PURC, which manages tariffs for formal water supply in the region, made clear that neither GWCL nor PURC had the authority, capacity or the resolve at present to regulate tariffs charged by informal water vendors (Interview, 9 July 2012). A representative from GWCL nevertheless clarified that informal vendors are expected to charge the same rate for water that is charged by the public utility (Interview, 6 July 2012). However, this informant later indicated that there was no systematic protocol in place for the company to actually verify the fact that informal vendors charge a certain rate.²⁵ GWCL offers the lowest per-unit rate for water, charged on a monthly basis, while water purchased from informal vendors, or procured from sachet and bottle water, is sold at a premium (see Table 2) (Pangare and Pangare, 2008; Morinville, 2012).

Table 2: Tariffs for water in Ashaiman from June to August 2012

Tariffs in Ashaiman (June-August 2012)	Unit Volume (litres)	Unit Price (GHp)²⁶	Unit Volume Comparison (GHp/m³)
GWCL Residential			
0-20m ³	1000	85.3	85.3
20m ³ +	1000	127.8	127.8
Jerrycan			
Bucket	5-10	10-20	1000-2000
Kufuor gallon	20	20-50	1000-2500
Sachet			
Unit	0.5	10	20,000
Bulk (x30)	15	120-150	8000-10,000

²⁵ The informant explained that he would occasionally go “undercover” into neighbourhoods to check what informal water vendors were charging. However, he also indicated that even if a water vendor was found to be overcharging for water, there was no “penalty” or means of enforcing a change in this behaviour.

²⁶ At the time of conducting fieldwork, GHS 1.00 Ghana Cedi (100 GHp) was equivalent to 52 ¢ USD.

Tariffs in Ashaiman (June-August 2012)	Unit Volume (litres)	Unit Price (GHp) ²⁷	Unit Volume Comparison (GHp/m ³)
Bottled Water (large)	1.5	150	100,000
‘New’ GWCL Tariffs*			
0-20m ³			
20m ³ +	1000	129.6	129.6
	1000	194.3	194.3

*Effective 1st October 2013

This premium, charged by vendors for their re-selling services, is also known to fluctuate with availability of water resources. Interview participants in Ashaiman reported paying between 10 and 20 pesewas per bucket containing 5-10 litres (5¢ and 10¢ USD) and up to 50 pesewas per 20-litre jerry can locally known as a Kufuor gallon (Interview, 29 June 2012). The inconsistency of pricing by informal vendors also arose when people reported that water was generally less expensive where piped water flowed more frequently. For example this was depicted in the following exchange:

Interviewer: And the price you pay for water is how much?

Respondent: 50 pesewas per gallon. Compared to Tema it's 10 pesewas per gallon.

I: Oh? Why do you think the price is lower? Just because there is a pipe?

R: Yes. Everywhere it flows.

I: Ok. I see. So when the water doesn't flow the price is higher?

R: Oh. In Tema if it doesn't flow for about 3 days, the price goes up.

(Interview, 29 June 2012)

Arguably, the time taken to “chase for water” is important to consider as well, but these less tangible costs are difficult to quantify and are rarely factored in even symbolically. But while the price charged by informal vendors was higher and subject to fluctuations, the range of cost is felt to be fairly knowable and manageable. Generally, interviewees told us that the price they were charged by informal vendors was reasonable and standard (Interview, 6 June 2012). Some also mentioned that, if or when the price was too high, they could also choose to use less water or wait (to a certain extent) for the price to lower before they do their washing, or engage in similarly water-intensive activities.

²⁷ At the time of conducting fieldwork, GHS 1.00 Ghana Cedi (100 GHp) was equivalent to 52 ¢ USD.

Transaction

Besides the price of water, other more tacit elements of the payment process were also depicted as instrumental to securing water access, such as avoiding large bills or accruing debt. Some of the ways that respondents described payments for water help to explain the tenuous grasp on formal water services held by the urban poor, despite a smaller price point per unit of water offered by GWCL. By transaction, I refer to the relationships between seller and buyer and the technologies of accountability that are implicit in accessing water from both formal and informal sources.

Water purchases through vendors and neighborhood re-sellers are charged at the time of exchange and both parties agree to the amount paid for the water at the time of transaction. In contrast, paying for GWCL services occurs on a monthly basis and fluctuates depending on the cumulative amount used.²⁸ It was acknowledged by some respondents that it would be better to source their water directly from GWCL, but the possibility of this was made less plausible by the complicated process of securing a connection to the piped infrastructure and water meters (requiring paperwork and upfront payments, and long waits). They also spoke of the difficulty of needing to anticipate monthly payments, requiring that they save disposable income for this purpose. Indeed, several participants described uneasiness, anxiety or uncertainty around owing payment and accruing debt to GWCL—factors that discouraged them from pursuing reliance on formal water provision (Interview, 15 June 2012). In some cases, participants who did have access to the piped network had their connection interrupted for non-payment forcing them to rely on local water vendors as an intermediary solution until they paid their dues and their service was reconnected. Or, in some cases, residents resolved only to use the informal water system rather than pay the arrears on their bills (Interview, 7 July 2012). In line with the difficulties of billing, it was also indicated that a post-use payment for water is often confusing and misleading. A young man from the Tulaku area explained that in general, there was a tendency to “misuse” water which was delivered unencumbered (Interview, 7 July 2012), such as through the tap. For instance, if a person is using water from a bucket to bathe, they will use the water they have for this task efficiently, whereas if they have water flowing they are apt to use more (*ibid*). This example demonstrates the perception that the mode of payment can also

²⁸ This, of course, does not apply to households with an unmetered connection charged a monthly flat rate.

directly affect the water user's ability to manage their use of water in terms of quantity consumed and spending. Additionally, while daily procurement of water can be stressful and taxing, so too can be waiting for a large bill at the end of the month when the exact amount may be unknown, subjecting one to growing indebtedness or uncertainty.

Surrendering to billing technology of water meters also requires a great deal of trust and voluntary exclusion from certain communications or negotiations. In the words of a 72-year-old man: "...If you have a meter, you cannot 'talk anything about that'... as in, if there is measurement, the assessment is done, your bill is given to you and you pay" (Interview, 30 June 2012). The perception is that the receipt of a bill implies that decisions have already taken place, the results of which are presented as official, and as an accurate depiction of water use, complete with a set cost (see also Loftus, 2006 for a further discussion on water meters in the context of South Africa). It becomes not only difficult to monitor, track, or correlate the household's water usage with the amount and expense outlined in writing, but there is also an implicit lack of negotiability involved in this kind of billing for payment. The discomfort generated by the technology of meters also conveys a general lack of trust and communication between residents of Ashaiman and GWCL.²⁹

Trust and communication

A person's capacity to generate water security in Ashaiman was also tied to prompt communication of information and accurate knowledge of multiple sources of water. When I asked to whom they would go with water problems, respondents answered that when it came to water, they had to look after themselves (Interview, 6 June 2012). On this note, the senior official at GWCL explained to us that whereas it used to be "[the] culture in Ghana" to give water to neighbours within one's social network for free, nowadays "because of the lack of water", people can no longer afford to share their resources in this way (Interview, 6 July 2012).

In general, respondents did not seem to know how or where to reach GWCL officials should the need to contact the utility arise. Others indicated that when they had tried to

²⁹ This general lack of trust in public entities was similarly indicated by our survey results, where 54% of the sample responded that did not trust government officials (Harris et al., 2012).

communicate with GWCL, the agency was unresponsive to their concerns. One interviewee explained that although she had gone to the offices to report problems with water flow, she received no guidance and saw no improvement (Interview, 27 June 2012). For those who sought to establish connections to the grid, residents reported waiting anywhere between a few months to a year after the full connection fees (or arrears) had been paid (see also Morinville and Harris, 2013). Furthermore, despite the presence of GWCL's small billing office in Ashaiman's Lebanon district, the cashier working at the office on the day of our visit told us that she often directed clients with complaints or concerns to the regional office located across the motorway in Tema as she worked solely in the capacity of taking payments and could not answer further questions regarding how piped service connections are applied for or granted, et cetera (Interview, 27 June 2012). The lack of presence by the GWCL in the community, as well as complications of billing and metering, seemed to be strongly linked to a waning trust in the service provider, as well as the sense that the GWCL was generally non-responsive. The overall disconnect between the formal water company and the community at large seemed to chronically undermine the perception that GWCL can address water concerns, especially as they can arise on a daily basis.

Housing and Mobility

The streets in Ashaiman are lively, housing is eclectic and both are in ceaseless transformation. Districts that are closer to the centre markets, like Night Market or Zongo Laka, are more densely packed with smaller housing structures, while areas like Newtown or Jericho are more spacious. At the time of this research, many of the interview participants who lived in denser locations were renting one-room units within a compound of multiple households and did not own a home, a finding congruent with the most recent statistics generated by the Ghana Living Standard Survey (Ghana Statistical Service, 2008). Our own survey results indicated that 89% of respondents in Ashaiman did not own the house in which they lived—figures that are generally consistent with several other accounts regarding housing in Ghana and Accra more specifically (Grant and Yankson, 2003; Gough and Yankson, 2011; Arku et al., 2012; Arku et al., 2013). Shared housing arrangements represent one way that migrants are able to manage the costs of moving to the peri-urban area in search of urban prosperity and employment in the capital city. When asked how many people inhabited the larger compound structures in which they were

living, respondents offered estimates of between 15 and 25 persons (Interview, 29 June 2012) while others seemed not to know or explained that there were too many to count (Interview, 15 June 2012). Since GWCL charges are based on an increasing block tariff structure (again see Table 2; Nyarko et al., 2008), multiple-occupancy houses where several households draw from a single meter are often penalized with a higher bill, while single-family homes, generally owned by wealthier families and occupied by fewer residents, are effectively subsidized by this arrangement. Therefore, despite the rhetoric of efficiency and basic access for the poor, the official tariff is not necessarily beneficial to the lowest income households and renters, especially those who live in compound houses, often sharing a connection (Bathsheba, 2011).

The rapid growth of Accra has also meant that the housing market has not been able to keep up with demands, despite explicit government policies seeking to increase housing for the poor (Grant and Yankson, 2003; Gough and Yankson, 2011). A recent study reports that approximately 60% of residents live in “overcrowded, deteriorated and low-income rentals accommodations” lacking proper amenities (Arku et al., 2012:3178). The sustained demand on the housing market in Accra has led to increased settlement on the fringes of the city (including in sites such as Ashaiman), where services are not always available, but where new comers arrive in the hopes of gaining access to water, drainage, electricity, roads, et cetera in the near future (Gough and Yankson, 2011). As other studies have shown, without formal property ownership, it is not only difficult to obtain approval to install pipes (absentee landlords may not be available for or cooperative in the permit process), but landlords in charge of shared housing units are also less likely to bear costs of installation and maintenance (e.g. see Bakker et al., 2008 for a study of similar issues in the case of Jakarta).

In conjunction with this, the mobility of people throughout Accra and especially in Ashaiman may similarly discourage renters from investing in housing and assuming the cost of a formal connection to piped water services. In the following conversation, an engineer from the TREND Group (Training, Research and Networking for Development Group)³⁰ underscored the

³⁰ TREND, est. 1989, was conceived within the framework of the International Training Network (ITN) for Water and Wastes Management Programme which was promoted by the World Bank and was one of four centres established in Africa under the Programme (TREND, 2012).

fluidity of the population while referring to the challenge of maintaining connections crucial for nurturing local decision-making processes:

...The lifestyle and the nature of living in Ashaiman is such that it's difficult to organize people under a particular arrangement...They come there today, they move tomorrow, another person joins the next time, and so...you have to virtually repeat issues every day because new people keep coming in. (Interview, 22 June 2012)

Indeed, several respondents indicated having lived in other places before Ashaiman, and others, especially young people, were keen to move elsewhere in search of work. For example, when asked whether he had specific concerns about living in Ashaiman, a 23 year old man from Zenu answered: “There is no work for the youth. There is no company here...not even one” (Interview, 29 June 2012). With difficulties finding reliable jobs inside the municipal area, residents are forced to travel, joining traffic on the motorway to and from Accra each day. Commuter populations may not have as grave a concern for formal water services that they themselves will not be utilizing throughout the day but may place higher priority on having access to informal, mobile water services, for example the water provided through sachet vendors. On the other hand, this circumstance of mobility may also leave commuters in a situation of requiring that water flow at very specific times when they are home (unless they have the means to store it in advance). This phenomenon would certainly benefit from further study, as it may be worth considering that a high degree of transience, such as is characteristic of peri-urban settlements like Ashaiman, might be associated with a parallel need for greater resource flexibility or mobility.

Discussion: Informal Water, Everyday Practices and Human Infrastructure

In this case study, accessing water services involves a complex assemblage³¹ of connections and disconnections, which are negotiated everyday through practices embodied in the “chase for water.” Respondents drew on different forms of water (sachet, buckets, rainwater) and sources (vendors, neighbours, GWCL) because through this collection or assemblage of strategies, they managed to improve their situation of water security despite a precarious set of circumstances.

³¹ I use this term with recognition of McFarlane’s (2011) use of the phrase ‘city as assemblage’, which the author uses as a lens through which to conceive the spatiality of urban cities as processual, relational, mobile and unequal.

Both those who had a direct connection to the official water network *as well as* those who did not described inconsistent water flow from the piped system, suggesting there are several layers of water provision and access aside from the obvious technological link between tap and customers. However, even as respondents conveyed the obscurities in flow, communication and payment they experienced in relations with GWCL, they simultaneously highlighted the small spaces in which they could ameliorate these deficiencies. For instance, low-income residents in Ashaiman maintain a basic level of water security everyday by buying from neighbour's storage tanks, engaging in small-scale water purchases, collecting rainwater, and managing water use and payment closely on a day-to-day basis. In these ways and others, reliability was constructed by what Simone (2004) calls *conjunction*: the forging of plural infrastructures of people and artefacts, the collection of which authorizes life in the city. In this case, conjunctions of water access require residents of Ashaiman to amass water flow information and knowledge, and to maintain a degree of financial autonomy by collecting water in smaller amounts. These capacities to act "in creative and innovative ways" in the face of obvious structural challenges and constraints, and "to exert some degree of control over [these] social relations" (Sewell, 1992:5, 20), are crucial for the urban poor who are unlikely to have savings or storage tanks, and cannot afford to buy sufficient quantities of bottled or sachet water for household needs.

The desire for tap water in the home is founded on the notion that taps provide universal, reliable services – an ideal that is not attainable for most in Ashaiman's current context. The tap thus served ultimately to symbolize a standard of living and right to freedom linked with modern urbanity that contrasts with most people's experience of living in Ashaiman, even those who are relatively well off and with water infrastructure 'in place.' This aspiration also signals a normalization of dominant development discourses that uphold the critical nature of piped water infrastructures in urban spaces, and tends to neglect or miscalculate the role played by informal services in extending water access to local residents. Ultimately, in this case, the promises of security commonly offered by the tap are repeatedly countered by the realities of a fractured or erratic distribution system.

Since taps did not deliver regular flowing water, even for those who had them, attaining the ideal of urban water convenience is clearly much more complex than merely installing a connection. For many, the lack of flexibility and negotiability inherent to formalised provision

services also resulted in payment defaults and ultimately in the closure of their tap. Payment for services, even if higher per unit-volume, may in this sense be more feasible on a per-bucket, needs-basis for residents in Ashaiman who may choose to save money on water some days by forgoing certain water-intensive activities like washing clothes. Pangare and Pangare similarly find that it is important for “households who are unable to buy water connections and set aside large quantities of money to pay bills” to be able to “purchase small quantities of water on a daily basis according to what they can afford” (2008:4). For those who are not in a position to plan in advance, nor have the resources to store water, nor the financial means to pay monthly bills, immediate transactions may be an important part of managing insecurity. This is not to suggest that negotiating water access in a repetitive fashion does not entail its own disadvantages.³² Yet, a sense of disempowerment or loss of self-management and agency were conveyed in which formal water billing processes lent interviewees less opportunity to manage their daily financial resources. Furthermore, residents’ ability to engage the utility was hindered by the fact that most people did not know who was responsible for the municipal network or where the utility’s offices were located. Lastly, the housing landscape of Ashaiman is such that it might not be convenient for landlords or residents to initiate the process of obtaining a connection to the GWCL network.

In this framework, the everyday practices residents of Ashaiman engage in to repair the “closing of water” can be considered acts of navigating the constraints of a fractured infrastructure. The failure of piped water services to provide reliable water supply in Ashaiman leads residents to find ways to access water outside the channels of the official network. In this case, accessing water through multiple informal means permits that (1) water can be attained in incremental quantities at a smaller price-point upfront, and (2) the transaction itself takes place between two physically present people under the auspices of an agreement. The ability to be opportunistic, to collect water on the go from various sources, may be crucial to generating water security as defined by the water needs of that day. Though the price is higher and (most often) non-negotiable through informal water vendors, ultimately the customer decides how much they can afford to spend at the time of purchase and they can be confident that once paid, they will obtain the amount of water agreed upon. Similarly, having access to other areas of Ashaiman, or

³² Wutich and Ragsdale (2008) offer a discussion of the linkages between water insecurity and emotional distress in Cochabamba, Bolivia.

Greater Accra, where one can locate water in times of scarcity means that residents of Ashaiman are able to tap into the multiple informal water networks that are available in Greater Accra in a way that is complimentary to the high mobility patterns often found in peri-urban sites.

Ultimately, the data shows that attaining water security in the context of frequent interruptions in water flow involves enrolling diverse capacities to improvise, to connect to multiple sources and places, and to negotiate water needs each day through self-initiated transactions.

Thus, residents themselves formulate social networks of provision, which are key to extending the infrastructures for water access (Simone, 2004; Anand, 2011). Informal water services are made appendages to the formal network through infrastructures enabled by the residents and informal water providers. Though these relationships are not necessarily built on trust or longevity, they may be made more reliable as a collectively or in sum. This is because residents have learned and adapted to the reality that no single provider can be expected to be dependable. Purchasing water through multiple small-scale intermediaries might in some cases offer a way in which residents can hastily repair gaps in formal delivery and self-manage water access on a day-to-day basis, given water needs and their experiences of reliability, transparency, trust and mobility.

In this chapter, I shed light on how residents of Ashaiman, and the peri-urban poor more generally, leverage their situated knowledge and bodies in ways that allow them to position themselves as infrastructure and extend the flows of water beyond the formal municipal network in order to achieve quotidian water security. By doing so, I follow Wilshusen's (2009) assertion that everyday practices serve to both subtly challenge the structure and contribute to its perpetuation. In relying heavily on informal water flows and often actively sidestepping the formal water network, or at least a reliance on it, residents produce and reproduce a demand for a flexible and incremental system of access to water. Yet, these daily interactions and the endurance of an informal water sector also work to undermine the central utility's ability to control the flows in urban Accra by drawing water from the formal system and selling it

elsewhere, also contributing to the company's deficit or unaccounted for water as well as challenging the emblematic authority of GWCL as "the sole urban water provider".³³

Conclusions

A critical challenge for development is how to simultaneously address the complex needs of people living in extreme poverty, and how to not close down these spaces for agency...we can see that locally driven actions, often generated in informal spaces, can be vibrant engines for social transformation. (Bruns, 2013:27)

Through this case study, I underscored the co-dependency of formal and informal water networks as well as the importance of recognizing complex, daily experiences of water access. Not unlike other contexts, where official utilities have been unable to meet the service demands of a burgeoning population, Ashaiman's peri-urban landscape and water network exemplify a heterogeneous system of provision and access that draws on a plurality of technologies and infrastructures. This research demonstrates the influential role of services that extend water access in Ashaiman beyond the scope of the official municipal provider. Informal services and everyday practices collectively generate a working combined human and technological infrastructure, which moves and flexes in ways that exceed more stationary, rigid distribution technologies of conventional piped water systems, or indeed, more rigid definitions of water security. These infrastructures (sachet vendors, polytanks and neighbourhood re-sellers) are adaptations that accommodate a need for basic amounts of water, and entail certain measures of flexibility and self-management that are not found in other water services, including those provided through the formal GWCL network. Paying attention to everyday practices of water access in Ashaiman makes legible the ways residents may rely on characteristics of informality, and may appreciate and even require certain aspects of this flexibility, even while also remaining somewhat loyal to the perception that 'true' water security is to be found at the end of the pipe.

Informality is merely one stream amongst several to obtain water in this context, but one which is crucial as it allows residents to make strategic use of limited resources as per the needs

³³ "The Sole Urban Water Provider" is GWCL's official tagline and can be found on their website (GWCL, 2013). See Morinville, 2012 for a discussion of how alternative water providers undermine state control of water services in this context.

of each day. These services can be leveraged to provide an added measure of water security by permitting residents who do not have the means to store large quantities of water or save money to pay monthly bills to draw on several sources in a somewhat flexible fashion day-to-day. Recall a previous mention of Professor Songsore, who fittingly referred to water access in Greater Accra as a “labyrinth” of strategies. Furthermore, face-to-face interactions and ‘people as infrastructure’ provide some leniency and consistency where piped infrastructure and billing can be highly structured, unpredictable and unforgiving. Operationalizing informal appendages to the water network also requires that residents mobilize knowledge resources, initiate connections and move about in times of scarcity. This is what one informant characterized as a ‘chase’. By enlisting a patchwork system of informal and formal water services, residents of Ashaiman routinely find ways to improve their water security through everyday practices, suggesting that although fluid and mobile, informal water services are indeed comprehensible. These findings are analogous with others who have challenged the notion that urban informality within the African city is irrelevant or lawless (Mbembe and Nuttall, 2004; Simone, 2004; Miraftab, 2009) and scholars who have highlighted the capacity of the urban poor to access water through everyday pressures and political networks (See for example Anand, 2011).

The intent is not to present the informal water network as a panacea or long-term sustainable solution to a fragmented urban water delivery system. There are important issues with regard to cost, safety and regulation that come into play when intermediaries provide access to water sources. By making the case that informal water service providers play a fundamental role in connecting otherwise excluded populations to a minimum amount of water, my aim is not to understate the importance of these concerns. Rather, I suggest that there is opportunity for problems to be properly addressed and significantly improved only if and when policy makers and planners take seriously the accessibility of these services. The utility would benefit from a better understanding of the experiences and perceptions of the urban poor in regard to networked water, as well as the coping strategies they enlist to make the most of uncertain water access. For example, the understanding that customers will pay a premium for water that is readily available, even in smaller quantities, should connote the high value and significance attributed to heterogeneous water access points throughout peri-urban settlements. In the following excerpt, a company official from GWCL clearly expresses a disconnect between the utility and the experience of its customer base:

We want to know people's attitudes towards the water industry. Why they want to pay their bills, why they don't want to pay their bills. Whether they're okay with the water they get from the system...I think we will be happy to know more of the social psychology of people when it comes to water and management of water in their homes...We want to know how they're managing the little water that they have. (Interview, GWCL Official, 6 July 2012)

These disconnects in communication and partnership are also reflected in the disjuncture between realities of heterogeneous water access and neat urban planning designs that often hinge exclusively on in-house or in-yard tap water infrastructures and formalized systems of provision and payment. If an atmosphere of greater consultation is fostered, whereby the official utility engages actors who are directly involved in the chase for water in Ashaiman, namely informal service providers and residents, then planning for improved water access might begin to accommodate the interests of low-income peri-urban populations more concretely and strategically. There are a few approaches that could be taken to accomplish this. For one, it may be possible to incorporate elements of informality into formal supply systems; for example allowing that customers pay on a per-bucket system. Moreover, the Government of Ghana and GWCL might also facilitate informal access more explicitly by partnering with water vendors, which for example would enable them to ensure that areas that may be more marginalized by the rationing schedule are targeted for services. In tandem with the everyday practices of the urban poor to maintain security in a rapidly changing environment, informal water services provide possibilities of access that should not be overlooked.

Chapter 3: “What we do is welfare”

Questioning participatory water governance in peri-urban Ashaiman, Ghana

Introduction

The following chapter takes a critical approach to development discourse and water policy as they are articulated through the rhetoric and practice of participatory water governance. The chapter is framed by the following set of research questions: (1) What modes of engagement are in place to facilitate participation of peri-urban dwellers in water resource management? (2) How do people residing in Ashaiman evoke ideas or experiences around participation and/or understand their role in water governance? (3) In light of the practices, institutions and ideas of water governance in place, what are the implications for considering potential water governance strategies in this context? Discussion of results draws from a review of key literatures related to local-level governance and critical political ecology studies of water. Coupled with findings from case study methods and eight weeks of ethnographically-informed fieldwork in Ashaiman, I underline key divergences between the kinds of water that are often articulated in policy and the water(s) that is brought out in connection to welfare in the context of this research. I then offer several implications for thinking about participatory institutions.

I argue that popular rhetoric in participatory water governance, and more specifically the promotion of community-based water user groups, is limited by a rigid set of ideas surrounding water and collective organization, creating expectations which are liable to be incompatible with or even undermine alternative institutions rooted in historical and social practice. Through a review of narratives gathered from open-ended interviews and observational evidence gathered from group meetings in Ashaiman, tensions between expectations and realities of water access and governance come to the fore. I further make a conceptual contribution by suggesting that these incongruences signal a critical rupture between resource governance scholarship and social natures literature. I make the case that participatory water governance literatures stand to benefit from a more nuanced understanding of institutional organization that incorporates water's social nature to cases of local water management. By engaging with ideas about the social nature of water and complexity of urban waterscapes, this research works towards fusing the rift between

conventional participatory water governance approaches and everyday experiences around water and social organization in the context of urban Ghana.

The appeal to craft participatory modes of engagement has become increasingly central in public policy and scholarly literature, especially as IWRM and multi-governance approaches are regarded as essential to sustainable and effective natural resource management. Appealing to governance scholarship and institutional theory, I consider how design and evaluation strategies for participatory water governance are rationalized and structured in public policy and scholarship to date. Following Rogers and Hall, I define water governance quite broadly as “the range of political, social, economic and administrative systems that are in place to develop and manage water resources, and the delivery of water services, at different levels of society” (2003:7). Water governance is considered *participatory* insofar as efforts are made to entrust governing powers and responsibilities to the public (or those affected by decisions), who are increasingly presented as core conduits of environmental stewardship and democratic policy-making in sustainable water management (Harris et al., 2013). According to the World Water Forum, achieving water security is fundamentally a matter of good governance as well as hydrology: requiring “resilient institutions, collaborative efforts and sound capacity at all levels” (Akhmouch, 2012:5). Gradually, participatory water governance has gained widespread credence as a panacea for water problems in the 21st century (Sneddon, 2013). As such, institutions are increasingly structured around the core conviction that inclusive decision-making will foster greater equity and sustainability.

Alongside shifting governance strategies, scholars and practitioners alike have underlined the need to shift the focus away from a conventional, supply-oriented water paradigm³⁴ towards paying closer attention to the multiple services that people glean from water (Gleick, 2002; Brooks et al., 2009; Linton, 2010). Linton cautions that policy discourse remains overly narrowed on the crisis of modern water supply in such a way that “evacuates the social content of water” (2010:22). Moreover, I heed others who suggest that institutional prescriptions for participatory water governance have tended to further encourage this abstraction from social-

³⁴ ‘Water paradigm’ is a term used to describe broader ideologies around water. Peter Gleick (1998; 2000) argues that the current water paradigm is shifting away from a focus on concerns of supply and demand, towards emphasizing the incorporation of ecological values into water policy, meeting basic human needs for water services and challenging seeking alternatives for heavy water use in the pursuit of economic growth.

ecological contexts through the reification of water as a functional resource to be managed for efficient consumption (Mehta et al., 1999; Cleaver and Franks, 2005; Linton, 2010; Goldin, 2013). By drawing out the social nature of water in Ashaiman, as well as the socio-institutional complexities surrounding water and other aspects of community governance in everyday life, I aim to contribute insights to a growing body of works stressing water's complex social relations and power dimensions (see for example Swyngedouw, 2004; Bakker, 2004; Loftus, 2009). I use concepts such as waterscape and hydrosocial cycle as analytical lenses to consider the dynamic nature of water governance; these will be defined in turn in the conceptual framework.

This chapter unfolds as follows: The first section foregrounds the analysis by introducing key concepts framing the research. It situates the current literature on participatory water governance, citing critiques of mainstream institutional participatory frameworks and water user groups. It then draws out insights from political ecology and socio-nature studies that conceptualize water as a socio-nature hybrid, with particular emphasis on what Jamie Linton has referred to as hydrocentricity and the hydro-social cycle, defined in the section following. A brief introduction to alternative understandings of institutions in natural resource management is provided, highlighting 'institutional bricolage', a concept advanced most recently by Frances Cleaver. The second section provides a brief overview of recent developments regarding water policy and governance in urban Ghana as well as an introduction to the case study site. The third section highlights tensions and themes brought out from interviews and observations. Finally, I return to the key concepts outlined in section one, bringing these to bear on the data presented, to explore implications for re-considering participatory water governance in this context.

The discussion section is mainly structured around two findings from my research in Ashaiman: that water concerns were strongly associated with preserving daily welfare, and that reinforcing personal and collective well-being in a general sense appeared to be influential in terms of inciting institutional organization, especially at the neighborhood scale. Observations and interviews yielded a diversity of issues around water, from safety collecting water, to cleanliness and hygiene to the right to certain technological services in an urban space. In almost all cases, I found that respondents frequently verbalized a coalescence of these complex concerns, by emphasizing that water was inextricably linked to general day-to-day welfare. This

finding had important bearing for governance, as an individual's participation was often framed in terms of their personal 'stake' in water; the importance associated with managing water was linked to maintaining personal well-being and household security. Coupled with recorded observations of community groups or club operations in Ashaiman, these patterns suggest that rather than focusing on water per se, governance structures may stand to benefit from organizing around flexible priorities rooted in the general goal of improving social welfare, and seeing water as an inextricable part of this welfare.

For example, flexibility may be key to enabling groups to address evolving community priorities, as well as attend to changing physical or infrastructural conditions. Moreover, governing water in a singular or isolated fashion, for example in a way that emphasizes resource availability and use as distinct concerns, is unlikely to capture the complex ways that water access plays out in this context, and as a result may impose institutional structures that would be unfamiliar and perhaps injurious to other support structures already in place. In order to account for these other structures of governance within the analysis, I engage with other works that have sought to broaden participatory water governance perspectives and debates, enlisting hydro-social and bricolage theories as possible frameworks to capture alternative community governance arrangements. In doing so, I aim to engage relevant literatures and policy-makers in a discussion of what could eventually become more adaptable and context-compatible institutional frameworks for water management in similar peri-urban sites.

Conceptual Framework

Models and 'mis-fits' in participatory water governance

With the view that conventional systems of public water provision have often failed to improve service delivery to the poor, alternative regimes for managing water resources are increasingly promoted and negotiated (Bakker, 2004; Fuest and Haffner, 2007; Linton, 2010). In particular, recent scholarship has trended towards a focus on the importance of democratic process. The claim that expanding local public participation in governance can help to solve problems of inefficiency and exclusion has attracted significant credence, echoing larger trends in

development policy discourse towards promoting decentralization and civil society engagement (Hickey and Mohan, 2004; Mohanty and Tandon, 2006). Principle No. 2 of the four guiding principles recommended in the Dublin Statement on Water and Sustainable Development states that *water development and management should be based on a participatory approach, involving users, planners and policy-makers at all levels* and furthermore underlines the importance of taking decisions at the *lowest appropriate level, with full public consultation and involvement of users in the planning and implementation of water projects* (Solanes and Gonzalez-Villarreal, 1999; WMO, 2013). It has also been argued that fostering greater participation at ‘local’ levels is critical to achieving goals for alleviating poverty (Ahmad, 2003).

The water sector has been embroiled in these overall trends in governance and can offer lessons to consider participatory governance as it is framed and operationalized. In development policy, water user groups are often conveyed as an effective way to foster new relationships between the public and natural resource management processes seen as key features of good governance and a way to build social capital (Putnam, 1994; Mosse, 2003; Meinzen-Dick and Zwarteveen, 2008). Taking various forms such as water user associations (WUAs, often more common in irrigated agricultural contexts) or local water boards (LWBs),³⁵ these groups are recognized in sustainable water resource management frameworks as models of participatory water governance (GWP, 2009; Merrey and Cook, 2012). Moreover, in many cases whereby participatory water governance is evaluated, the presence and functionality of WUAs or LWBs have been used as a kind of ‘litmus test’ to measure effective community involvement. Proponents argue that under ideal conditions, participatory governance in the form of local institutions or WUAs can encourage the mobilization of local knowledges, thereby improving system design, generating greater security and facilitating empowerment of those involved (Meinzen-Dick et al., 1995; Subramanian et al., 1997; Osmani, 2000). It has also been reasoned that water user groups can provide the opportunity for marginalized people to have a voice in matters that affect them (Morinville and Harris, 2013).

In contrast to these ideals, case studies demonstrate that some of these institutions are also resisted or resented by the communities they are intended to serve. For example, Vavrus

³⁵ Water User Associations (WUAs) tend to form in more rural areas and are often structured around irrigation projects and agriculture. In contrast, Local Water Boards (LWBs) are more typically found in urban or peri-urban sites and are concerned with household water use and access to drinking water.

(2003) explains how water user groups were viewed by residents in rural Tanzania as ‘charlatans’ or ‘phonies’, lacking credibility based on incongruity with established social practices. Others show how agendas of water user groups can be co-opted in ways that reinforce socially constructed power imbalances.³⁶ Cornwall and Gaventa make a similar point, cautioning that the role of the user committee is often restricted to managing pre-established objectives:

User groups – often in the form of sectoral village committees – have come to be a pervasive feature of the development landscape in many countries, often taking on some of the functions of provisioning, regulation and management that previously resided with the state... Yet the remit of user committees generally remains confined to ensuring the efficiency of service delivery rather than to give citizens more of a voice in determining the kinds of services they want or need. In this sense, this approach offers a profoundly instrumentalist view of participation (2000:11-12).

These conflicting experiences raise important questions regarding how and why water user groups have been established or resisted across different contexts, beyond questioning the appropriateness of promoting such groups as a strategy in creating more inclusive water policy and governance. Evidence that water user groups can redress power imbalances and ensure equitable water access remains inconclusive, yet another reason to inquire into the dominance of these institutions in participatory governance frameworks. Support for institutions such as user groups is persistent in part because it “fits with institutional practices which emphasize the devolution of responsibilities to users, but the retention of ownership rights by the state, and development strategies which stress changing individual behavior rather than property rights and state policy” (Mosse, 2003:274). Furthermore, with the view that watersheds are ‘natural’ governance units, governance arrangements that center on water, or the watershed scale, have been increasingly enrolled across policy domains in ‘Western’ countries, although there is doubt whether these can facilitate improved integration and participation than other institutional formations.³⁷

A review of participatory water governance literature suggests that it is worth taking note of the tensions created when proposed or crafted institutions clash with customary methods of organizing or dealing with water issues (Hunt et al., 2008). As the ‘water crisis’ becomes a

³⁶ See for example Barnes (2013) regarding exclusionary practices around gender in water user associations in Egypt.

³⁷ See Cohen (2012) on the uptake of watershed governance in Canada.

highly publicized topic of global interest, foreign investment and aid agencies play prominent roles in shaping water management agendas as they unfold in developing countries. Donors help to subsidize various institutional prescriptions, which are based upon dominant ideas in development policy discourse (Agyenim and Gupta, 2010:343). Molle (2008) calls these dominant ideas ‘storylines’, whereby water policy emerges out of persuasive development tales, which frame problems in ways associated with particular solutions. This cyclical logic can lead to the manufacture of institutional projects that are blinded to or incompatible with the social and historical contexts in which they are implemented. A preoccupation with ‘local’ or ‘community’ approaches to resource management may mean that even as advocates for inclusive governance, NGOs may subconsciously mold the entities whose interests they claim to represent, to resemble more closely the imagery portrayed by development discourse rather than authentic local organization and community resource use (Brosius et al. 1998). Several recent case studies suggest that water user groups are often designed upon simplistic and egalitarian conceptions of community and social organization (Cleaver, 2012; Barnes, 2013; Harris et al., 2013). Ostrom’s (1990) pivotal work similarly demonstrates in more general terms the ways that local organizational practices are often incompatible with formalized institutions, also raising the possibility that implementing formal institutions may supplant existing informal practices (even ones that have been effective over long periods).

In line with these critical perspectives, governance scholars and policymakers need to take seriously the possibility that the promotion of certain participatory prescriptions may (re)configure local governance to ‘fit’ within normative ideas of decentralization, and as such may be more detrimental than useful (Wittman and Geisler, 2005). Local groups molded to fit within an externally-defined norm of ‘bureaucratic’ governance may more likely be perceived as contrived, whereas credibility is gained when institutions are ‘socially-embedded’ and have moral legitimacy (Douglas, 1987; Cleaver, 2012). Institutional diversity may therefore be an inevitable result and diagnostic of meaningful participation, where members of voluntary associations actually partake in the crafting of multiple layers of rules and decision-making arrangements (Ostrom, 2005). The intention in this chapter is to highlight the significance of cultural meanings that root and inform institutional structures, thus resulting in varied styles of governance from place to place.

Building on these insights, water governance scholars have increasingly called for greater attention to informal or unstructured institutions as sites of political practice (Swilling et al., 2003; Cleaver, 2012). Through social norms and public dialogue, these groups are sites of governance, often regulating practices that are of concern to development policy, though they may not classify as ‘institutions’ by stricter definitions. As Mehta et al. warn, “A failure to appreciate the dynamic nature of institutions often leads to the proliferation of simplistic interventions for community management which undermine the dynamic nature of people’s responses to livelihood uncertainty” (1999:7). In this vein, scholarship has begun to consider institutions from a wider conceptual lens including multiple modes of social organization. Following Merrey and Cook, institutions are defined as social arrangements, norms and rules that shape and regulate behavior, have some degree of permanence and transcend individual lives and intentions (2012:3). They are also the channels through which individual and collective action is shaped, social capital built and the weaknesses of state or market provision redressed (Merrey et al., 2007; Osei-Kufuor, 2010). There are a variety of different approaches to studying institutions. Here I review two streams, Mainstream Institutional theory (MI) and Critical Institutional theory (CI), and introduce the concept of ‘institutional bricolage’, following the framework proposed by Frances Cleaver (2012). The latter is employed in the analysis section to call attention to aspects of social organization that have important bearing for considering alternative modes of participatory water governance in the case study context.

Social natures of water and the hydro-social cycle

In his recent book, *What is Water?* (2010) Jamie Linton shows how ‘modern water’ discourse demands that water problems be framed in such a way that water itself is made *the* issue. He further argues that modern science legitimates techniques used to manipulate water sources by treating water as a physical molecule or substance, thereby abstracting water from its critical role in social, political and economic worlds (*ibid*). Discreet worlds of water production and social life are also delineated due to the design of infrastructures, which are made to operate out of sight and out of mind. “Burying the flow of water via subterranean and often distant pinpointed technological mediations (dams, purification plants, pumping stations) facilitates and contributes to masking the social relations through which the metabolic circulation of water takes place”

(Kaika and Swynedouw, 2000:121). Kaika and Swynedouw (*ibid*) argue that technologies and networks of water distribution are fetishized as critical features in the conquest for the urban ‘good life’, all the while fundamentally altering water’s social-nature identity in significant ways. For example, Kaika (2003) explains how the uninterrupted presence of water in households in modern Athens played a key role in the modernizing project connecting Athens to the West, signaling success in conquering nature while at the same time casting the city as a realm distinctly separate from it.

As changing water systems affect the arrangement of everyday relationships with water, new institutional norms are introduced to govern and structure supply and public use. When governing water access becomes a development project, concerns that are defined as central to the cause of water management are encoded discursively. In other words, techniques of governance emerge out of dominant ideologies about water, which are often framed around notions of scarcity and crisis (Gleick, 1998; Mehta, 2005; Linton, 2010). According to Linton (2010), this ‘way of knowing’ defers legitimacy to abstract professionalism and expertise. In turn, water management agendas are framed in such a way that masks socio-economic tensions and inequities of access. The steadfast focus on water by development projects demonstrates an “apparent objectivity [that] is often created through the use of technical, scientific or ‘expert’ language that *unbundles* or *abstracts* water from its socio-political context” (Waters, 2013:134).

Consider the following example. In 2009, The Global Water Partnership³⁸ released a report entitled “Assessment of Water Governance in Ghana” in which the Country Water Partnership (CWP-Ghana) commissioned a study to determine the status and role of WUAs in the country. The GWP cites the observation that “existing WUAs sought to promote, primarily, the welfare and socioeconomic interests of their members rather than promoting the rational use of water by their members” (Global Water Partnership West Africa, 2009: viii). In the report, this finding is presented as a hindrance to effective water governance; the resulting recommendation is that “roles and operations are specified in unambiguous terms for WUAs in Ghana to promote sustainable management of water resources in the country” (*ibid*). Implicit in this document is

³⁸ Created in 1996, the mandate of the Global Water Partnership is to promote effective coordination of water resource development through integrated water resource management (IWRM). It consists of government agencies from developed and developing countries, UN agencies, NGOs, professional associations and researchers (Global Water Partnership, 2009).

the connotation that welfare interests are not only separable from water use and access but also a critical distraction from the main objective of the WUAs, as welfare and socioeconomic interests are seen as outside of the purview of ‘sustainable water management’. Here, the water association is seen first and foremost as an institutional means of improving water use efficiency, and its members are expected to rally around this goal. Interestingly, this language comes on the heels of a mission statement that claims that the integrative approach taken by CWP-Ghana to water resource management is intended to “maximize economic and social welfare of the populace” (*ibid*). This case highlights that while the creation of local water institutions suggests a nod to democratic and inclusive decision-making, the actual objectives underpinning ‘collaborative governance’ may in some cases be predetermined, contradicting the idea of partnership that is critical to the development of mutually beneficial projects and goals. While ‘sustainable water use practices’ may be of core importance to those who are marshaling participatory water governance, the participants involved may have radically different understandings and experiences with regard to water access that do not readily conform to this category or expectations of management. In other words, the framing of ‘water governance’ discourse directly impacts what is considered central or peripheral in the handling of water concerns. Through the case study presented in this thesis, I examine how such an isolated focus on water in governance might create unnecessary and imaginary demarcations between ‘water’ and other dimensions of social and biophysical surrounds.

The works of scholars in political ecology and nature-society studies are instructive when considering what ‘social contents’ might be neglected in the course of framing participatory water governance in a way that abstracts water as a separable and distinct entity apart from broader goals such as social welfare. These scholars have long theorized how social processes shape water and water in turn shapes social relations (Swyngedouw, 2004; Harris, 2009a; Loftus, 2009; Budds and Hinojosa, 2012). Although water is often managed as a resource for particular purposes, the ‘soft path’³⁹ approach to water emphasizes the various goods and services that water provides, such as bathing, cooking and industry, that are as important if not more so than water access in and of itself (Brooks et al., 2009; see also Linton, 2010:241). Indeed, water access affects daily practices of urban life in a myriad of ways, in that “the flow of water through

³⁹ Amory Lovins (1977) first coined the term ‘soft path’, referring to energy use. For reference, the Rocky Mountain Institute defines the soft path for water at www.rmi.org/sitepages/pid278.php.

a city make life possible and, at the same time, structures the ways in which that life is lived” (Loftus, 2009:5).

The hydro-social cycle has been put forth as an alternative way of conceptualizing the co-construction of hydrological and social processes (Linton, 2010), representing a new contribution to a “sustained attempt to transcend the modernist nature-society binaries” and to “envision the circulation of water as a combined physical and social process” (Swyngedouw, 2009:56).

Hydro-social cycle has also been used as a framework to highlight how flows of water reinforce social differentiation and mirror unequal power relations (Bakker, 2003; Swyngedouw, 2004; Mollinga, 2013). Similarly, the term ‘waterscape’ is invoked in recent literatures to examine how water-related artefacts, institutions, and imaginaries animate particular contexts and come to structure society (Budds and Hinojosa, 2012). This review of scholarly works suggests that deeper insight is needed into how water governance unfolds across different contexts.

Furthermore, the relatively slim overlap between water’s social-nature hybridity and governance literature leaves, in some respects, experiences of the complexities of water out of governance debates. In the next section, I enlist alternative institutional frameworks in an effort to bring a broader scope of possibilities to the fore.

Institutional theory and the local-level

Understanding institutional development is critical to consider possibilities for inclusive resource management, particularly that which sets out to involve those who are marginalized from state services. This focus is not meant to suggest that institutions are the only framework from which to improve resource access, but is based on the understanding that they can be used as a lens to better understand local-level processes and outcomes (Agrawal and Gibson, 1999).

Acknowledging alternative ways of thinking about local-level institutions and participatory governance is an imperative exercise towards the pursuit of just and sustainable water access and governance. Yet, I do not wish to re-hash debates about the myth of the virtuous community or over-romanticize traditional governance; it is clear that communities are not homogenous entities with shared norms or experiences (Agrawal and Gibson, 2001), nor are local spaces immune to power imbalances and inequities in decision-making (Agrawal and Gibson, 1999; Cooke and

Kothari, 2001; Wong, 2010).⁴⁰ However, there is evidence that community groups tend not to be recognized as legitimate institutions by the standards set through development discourse and water policy frameworks, thus they are at times rendered, for all analytical purposes, invisible (Cleaver, 2012).

Mainstream Institutional Theory (MI) refers to the view of institutions as managerial and functionalist, neatly bounded and shaped by formal rules, conventions and regulations (Mehta et al., 1999; Cleaver, 2012). Linked to New Institutional Economics, MI takes as given that formal, standardized groups can be designed and reproduced in multiple contexts and that specific institutions can be developed for specific functions (Alexander, 2005). Acknowledging that institutions are key to organizing governance and social relations, social scientists have made efforts to identify universal principles of designing, crafting or engineering institutions to facilitate collective natural resource management (Merrey and Cook, 2012). Principally, Elinor Ostrom's (1990) work on community-based natural resource management has been highly influential in promoting the design of common resource pool associations.

In contrast, critical institutional theory (CI) is an approach to studying institutions that entails a broadening of the conceptual lens towards including multi-purpose, flexible and piecemeal social arrangements or networks (Cleaver, 2012). Challenging the dominant view of institutions (Mehta et al., 1999), feminist scholarship also frequently points out that participatory governance can occur simultaneously within and outside of formally recognized spaces (Lister, 2003; Turner, 2008; Morinville, 2012). Drawing from the earlier works of Claude Levi-Strauss (2004) on intellectual bricolage and bricoleur and Mary Douglas' *How Institutions Think* (1987), Frances Cleaver uses the term 'institutional bricolage' to describe how "mechanisms for resource management and collective action are borrowed or constructed from existing institutions, styles of thinking and sanctioned social relationships" (2002:16). By coupling traditional and modern systems of support, these arrangements can address changing needs and yet maintain a sense of social grounding and cultural familiarity.

⁴⁰ For example, in some cases devolving governance responsibilities to 'traditional institutions' without addressing power imbalances may reinforce male-dominated control over decision-making (Meinzen-Dick and Zwarteveen, 1998).

This discussion points to the importance of distinguishing between ‘invited’ and organic or ‘created’ spaces of participation.⁴¹ In invited spaces, “institutions of the participatory sphere are framed by those who create them, and infused with power relations and cultures of interaction carried into them from other spaces” (Cornwall and Coelho, 2006). In essence, they are given by the state to citizens to participate in an established governance system. In contrast, organic or created spaces of participation come into being as a result of popular mobilization, where a group of people collectively addresses common concerns or pursuits (Cornwall, 2002; Gaventa, 2006). While I would argue that this approach may present a somewhat false dichotomy, not so clearly distinguishable in practice, I agree that it is likely that participation is experienced differently where the institution itself is socially authentic and crafted by participants themselves. Where leadership is external, legitimacy of the forum, or the degree to which people bring grievances, will hinge somewhat on the process and quality of consultation, and relationships of trust that are fostered. In the next section, I briefly revisit the case study site, with specific attention to providing a background on participatory governance in urban Ghana.

Ghana Water Policy & Case Study Site

Water Access

As discussed in Chapter 2, water access in peri-urban Ghana is uneven, erratic and particularly challenging given issues of inadequate infrastructure, rapid migration to urban centers and a lack of financial resources in the water sector, among others (Adank et al., 2011). Although water is not generally considered to be biophysically scarce in Ghana, demand exceeds supply in heavily populated areas of urban Accra, thus creating conditions of uneven, ‘manufactured scarcity’ (Mehta, 2005; Linton, 2010). Due to the rationing schedule through which the GWCL manages the shortage of water in their urban distribution networks, even areas served by the municipal pipeline receive flowing water only erratically (Ainuson, 2009). Middle- and higher-income groups are able to cope when water stops running by purchasing sachet or bottled water for drinking purposes, and by investing in large storage containers for household uses. Unable to

⁴¹ Concepts of invited and invented spaces for participation have also been used to conceptualize difference in citizenship by feminist scholars such as Miraftab (2004) and Lister (2003).

afford these alternative amenities, the urban poor in Accra often rely on water vendors, purchasing water by the gallon from their wealthier neighbors on a daily per-needs basis (Songsore, 2008; Ainuson, 2009; Adank et al., 2011). The resulting patchwork network of water access, is comprised of four main models of service delivery: (1) utility managed water supply, directed by the Ghana Water Company Limited (GWCL); (2) privately managed water supply, which includes neighborhood polytank reselling, tanker services and bottled water or plastic sachets; (3) community managed water supply through standpipes; and (4) self-supply, such as collecting rainwater or water from streams (Adank et al., 2011; Morinville, 2012). These myriad points of water access are not mutually exclusive and in many cases overlap both in terms of original source points and water users who draw on multiple services to improve overall water security

National Water Policy

In Ghana, national water policy has undergone a process of decentralization, mediated by a combination of NGO and development initiatives, local activist organizations, and more recently government campaigns. In this chapter, I briefly revisit the relevant features of water policy in Ghana to set the background for a discussion of participatory water governance. A more detailed history of the water industry in Ghana occurs in Chapter 1. The MWRWH states the overall goal of Ghanaian national water policy is to “achieve sustainable development, management and use of Ghana’s water resources to improve health and livelihoods, reduce vulnerability *while assuring good governance for present and future generations*” (Government of Ghana, 2007:13, emphasis added). In this document, ‘good governance’ is listed as a distinct area of focus, loosely defined as hinging on three main principles: (1) the principle of subsidiary – *in order to ensure participatory decision-making at the lowest appropriate level in society*; (2) the principle of solidarity – expressing profound human companionship for common problems related to water; and (3) the principle of greatest common good to society in prioritizing competing uses of water (*ibid*, 23, emphasis added). Although Ghanaian water policy endorses decentralization of governance structures and public participation (*ibid*), whether water management strategies employed have enhanced or impeded intended good governance outcomes remains questionable (Kpessa and Atuguba, 2013). For example, poor coordination and obscured responsibilities between several players in water provision and regulation have created challenges for efficient

delivery of and expanded access to services (Opoku-Ankomah et al., 2006; Agyenim and Gupta, 2010).

The first Local Water Board (LWB) in urban Ghana was established by the GWCL in 2007 in the peri-urban indigenous community Teshie (Morinville, 2012). Numerous other LWBs have since been implemented in sites across Accra by GWCL and CHF-Ghana (*ibid*). Generally speaking, the goals in setting up LWBs are to promote local participation and administer water to the community. LWBs do not provide paid employment, as members are usually volunteers. In their work, Morinville and Harris (2013) explore the promotion and uptake of LWBs in urban Ghana, highlighting limitations as well as possibilities for these forums in terms of improving water access as well as fostering more inclusive water governance. They found that LWBs can help raise awareness of important behaviours and practices, and through partnerships with external agencies such as CHF-Ghana, these groups have facilitated private connections to the municipal water network. On the other hand, LWBs require volunteer labor of its members and operate with minimal funding, thus board members received almost no compensation for their involvement (*ibid*). Moreover, linked to the concerns related to invited or invented spaces noted above, all of the LWBs in the authors' research were arranged by external agencies and not by the communities themselves. Related to this, the authors raise the question of whether the LWBs can truly be considered sites of community governance, as they seemed in large part to operate as extensions of the utility rather than representing the interests of community members. Finally, the authors suggest that forms of engagement happening outside of this model may also be important for an understanding of participatory water governance, inviting consideration of other practices and norms.

Case Study Site: Ashaiman

As mentioned in Chapter 1, Ashaiman was chosen as the case study site for this research particularly because community partners had identified the settlement as vulnerable to water access disparity often experienced in peri-urban areas of Greater Accra. Moreover, our survey instrument (Harris et al., 2012) indicated preliminary findings that respondents did not seem to use what may have seemed conventional channels of governance, such as going to water management authorities, to deal with water concerns. Our results also suggested there were no known water user groups or participatory mechanisms in the area for addressing residents'

concerns regarding the management of water resources (Harris et al., 2012). In fact, almost all respondents indicated they had no knowledge of any group or representative handling water concerns in the area (*ibid*). This chapter expressly seeks to study possibilities for participatory water governance in Ashaiman, in terms of assessing opportunities to participate as well as constraints that might be present and impinging on the likelihood of a mechanism similar to a LWB taking shape in this context. The methodologies used to investigate these questions are detailed in kind below.

Methodology

Analysis for this chapter is structured around recurrent themes identified through analysis of interviews and observations recorded during fieldwork in Ashaiman. To identify themes, I reviewed transcripts several times, assigning codes or attributes to portions of the data, which I felt were particularly salient in terms of the research objectives outline above (Saldana, 2013). Through a qualitative approach, I took a keen interest in everyday lived experiences of water access and governance as depicted and narrated by participants. Particularly, I aimed to ascertain tensions and resonances between interview narratives and observations, and policy discourses around participatory water governance. With an understanding that individual stories are situated within broader social, cultural and institutional discourses, which they may simultaneously imitate and resist (Reissman, 1993), I also observed group meetings held by clubs in Ashaiman to get a sense of how decisions are arrived at in settings where several interests are communally negotiated. As pointed out by Harris (2009b; 2011), attention to narrative also permits an exploration of the connections that are made between environmental conditions and other issues involving power relations, histories and contextual issues. Narratives echo deeply embedded ideas that are critical to forming local responses to governance strategies and water access conditions, thus affecting the potential for sustainable water management. As such, I am less interested in substantiating the perspectives portrayed in this research as factual or ‘true’, rather I seek to unravel the contradictions or parallels that may exist around shifting discourses (Clandinin and Connelly, 2000; Chase, 2008) to better understand spaces for institutional change or resistance (Andrews et al., 2008).

Next I present the results of this research study, paying attention to the diverse ways of knowing water as expressed by interview participants, and underlining relevant features of social organization in Ashaiman. In the analysis, I consider how these themes might represent narratives around water and governance that complicate or concede to notions of modern water or formal institutional structures as outlined by Linton and others (see earlier sections for reference on hydro-social issues or institutional forms). I then draw comparisons between clubs in Ashaiman and LWBs, questioning the basis for institutional design in this context. Finally, I discuss what lessons can be learned from these themes, in terms of querying formal institutional structures such as the water user group or LWB as institutional models of participatory water governance. Through this discussion, I aim to create space for a broader dialogue around participatory water governance, specifically exploring how crafted institutions stand to benefit from a more nuanced understanding of social organization that incorporates water's social nature and integral role in general welfare.

Results – Fluid meanings of water and governance

In this section, I outline how meaning was articulated in relation to water and community governance in Ashaiman, and I begin to trace the broader shape that 'other ways of knowing' water might take against the conventional model (such as LWBs). Using interviews and observations, I aim to untangle the social natures of water in Ashaiman, showing how abstraction of water as an isolated concern may relinquish important elements from governance considerations. The primary goal of adopting this approach is to demonstrate the multiple services and networks that are bundled within water access and through this, to underscore the livelihood concerns that are deeply entwined with perspectives around water in this settlement.

One way of coding data for significant themes involves paying close attention to instances where content shifts in directions that cannot be attributed solely to the questionnaire or probing by the investigator (Ryan and Bernard, 2003). As an example of this, I found that when I asked whether respondents would be eager to participate in decision-making around water issues, positive interest was expressed *insofar as water was understood as life*. Although I had not asked for a characterization of why water mattered to them, and although none of the respondents actually had experiences of managing water in a institutional sense per se, they

could justify or explain their involvement in governing water *because it impacts many areas of everyday living*. I also observed that community groups operating in Ashaiman treated spaces of local governance as settings for supporting one another's security and discussing welfare issues in a flexible manner. To illustrate, I witnessed groups that were in the midst of resolving issues from spousal disputes to housing upgrades. It is constructive to begin with examples of the many telling ways people invoked water in conversation.

“Water is life” and other ways of knowing water

In this section I review some of the ways people expressed encounters with water and their ideas of how water affects their lives. The purpose of this is to highlight the breadth of concerns, and in turn to connect this diversity to claims regarding participatory water governance, to consider how a more comprehensive view of water may have reveal lessons about appropriate strategies for social organization in this context. In each interview, I asked participants whether they knew of a person or group working on water issues in the area in which they lived or in Ashaiman generally. Most respondents plainly said “no”, or asked for further clarification and re-wording, signaling that these kinds of groups were not present or familiar. I further asked whether respondents would participate in a group that gathered to discuss water issues, if such an opportunity were presented to them. The intent behind this scenario-based question was to explore willingness and ability to become involved in water governance of this kind, and to gauge the initial thoughts stimulated by this hypothetical circumstance.

Some respondents explained the obstacles that would inhibit their participation in a water user group, highlighting the burden of dedicating time and resources, or becoming involved in politics. An older woman living in the Night Market explained that she had limited disposable time due to caring for older family members (Interview, 15 June 2012). A 72-year-old man residing in Zongo-Laka indicated that many social groups expected their members to contribute funds, and since he did not have funds to offer he would not participate (Interview, 29 June 2012). Another women, approximately 40 years old and residing in the Night Market, recounted a negative experience with a collective organization she had been involved in previously, and explained that she did not want to have to deal with these kinds of “politics” or “worries” (Interview, 15 June 2012). Others felt it was the government's responsibility to provide for

water: a 23-year-old man sitting with his friends at a mobile phone kiosk in Zongo-Laka said: “Everything is under the government so the government has to provide us the water” (Interview, 15 June 2012). He went on to say that if he were to join a community group to discuss water issues in Ashaiman, he would expect compensation for his time: “I want to tell you the truth. If I am going to do that...they have to pay me” (Interview, 15 June 2012).

In brief, these snapshots further trouble the view that participation in governance is perceived to be an entirely desirable process by those who are presumably being recruited⁴² or that membership in a user group is a venture that is open to everyone.⁴³ Scholars point out these problematic assumptions, suggesting that more attention needs to be paid to the experience of participation, which is often more diverse and ambiguous than portrayed in policy discourse (Cleaver, 1999; Zwarteveen and Neupane, 1996; Harris et al., 2013). The responses above also represent some of the concerns that residents may have for joining a group like those proposed by participatory governance literatures, including the expectation of providing voluntary labor with little or no incentive.

On the other hand, many respondents expressed a keen interest in participating in a water user group in their community. Interestingly, those who affirmed their interest in engaging with water user groups almost invariably and immediately emphasized the vitality of water – stressing its importance for all dimensions of life and well-being. There was a sense that an involvement with water issues was a responsibility that one could not afford to ignore, since water was as essential as air, or life itself. This is important to keep in mind for the next section, where I illustrate how examples of local governance in Ashaiman demonstrate well-being and social support as a focal point of group decision-making. Consider the following exchange with a woman named Patricia from the Lebanon District of Ashaiman:

Interviewer: ...have you heard of any water user associations or water user boards in Ashaiman?

Respondent: No.

I: No organization that just works on water?

R: ...No no no. I don't know any of, of any group or any association that will help if we have a water problem...

⁴² See Goldin (2010) or Morales and Harris (forthcoming) for discussions on emotional dimensions of participation.

⁴³ For further discussion of the burdens of participation, see Cooke and Kothari (2001).

I: ...If there was one...let's imagine that. Do you think you would have the time to be involved in something like that?

R: Yes. I will report because I need water. Without water I can't survive so if I have a problem, even a little problem, I have to report.

I: Mhmm. And do you think other people in your community will be as ready as you to be involved?

R: They are very, very ready because they need the water to survive. If there is no water, how can you eat? How can you bath? Even water is [more] important than electricity.
(Interview, 27 June 2012)

Furthermore, in Zenu, a woman named Violet approximately 20 years old was selling food at a small kiosk. Other younger girls hovered around and sometimes chimed in as we spoke.

Interviewer: Do you think that you would want to participate in the meetings?

Respondent: If there are any groups like that, we would have joined, but there are none. We don't have it.

I: Let's say imagine there was one. Imagine like today someone came to your community and said: "We are all getting together. We want to talk about the dam or something concerning [water]"

R: We will join.

I: Would you have time?

R: Yes. We would have time.... Because we need it. We need the water.

I: Mhm, okay.

R: Ehee, We need the water so we will have time for it....So that we can get the water...Because water is life.

(Interview, 29 June 2012)

The following conversation with Mary portrays a similar perception of water and governance:

Interviewer: So now, if you hear that we have called for such a meeting, will you come? If there is an assignment that the Assembly man is calling for a meeting to discuss water issues in this community but it is only those who wish to participate that should come, would you go?

Respondent: I will go, because water is very essential commodity. Here is water; here is soap. No matter how the water is, you will need it and soap is also very important. I do not want to be in need of these two things. As for food, if even you don't get exactly what you want, you will definitely get some to eat.

(Interview, 15 June 2012)

Moreover, when asked about water access in Ashaiman, participants conveyed a plurality of ways of knowing and experiencing water in their day-to-day lives. Water was described as synonymous with life, as well as a way of exercising political control and authority. For some, enjoying certain water services linked to higher levels of freedom or urban affluence, while others underscored water in Ashaiman as a symbol of pollution, lack of drainage and health risks. Questions about water invoked respondents to recount intimate details of their lives that accentuated wellbeing and personhood, indicating that the lines between life, livelihood and water services were not so clear.

Personal Safety

In several instances, people explained their relationships to water through stories that underscored the complex ways water affected their everyday lives. During one interview, a woman explained that in her area taps were often opened and flowing only between midnight and 1:00am as per the rationing schedule (Interview, 15 June 2012). This neighborhood did not have working streetlights, and having heard recent rumors of crime in the area, she collected water for her household in fear for her security. Another respondent described the dangers of crossing busy streets with a large pail above-head. Since there was no other path to take and drivers were known not to slow down or stop for pedestrians, this made it “very risky” to make the crossings multiple times throughout the day for water (Interview, 27 June 2012).

Livelihood and Freedom

Related to this, respondents linked reliable access to water to ideas of freedom and dignity. One person stated matter-of-factly: “If we have water, we are free” (Interview, 29 June 2012). For another, it was explained in terms of difference: “As for water, you don’t have to suffer to get it. I walk and go and fetch it. In something like America everybody has a pipe in his own house...am I lying?” (Interview, 15 June 2012). These quotations hint that residents of Ashaiman understood that reliable access to water was linked to a standard of living that remained out of reach for them. If water was connected directly to their homes, the labor once

dedicated to this repetitive task could be reoriented towards other purposes or priorities. Inadequate water flow was also associated with the absence of industry in the settlement, especially as certain job opportunities like tie and dye or “wele”⁴⁴ required high levels of water use (Interview, 29 June 2012).

Cleanliness and Holiness

Another respondent decried that the state of water in Ashaiman represented not only a contamination of gutters or bodies but an obstruction of moral purity. In his words, “Holiness is cleanliness. Without water our area will not be suitable for God to live in” (Interview, 3 July 2012). Water being imperative for cleanliness and cleanliness being vital for godliness, it was this man’s conviction that God’s presence in the community was contingent upon good quality, flowing water. As a religious man, the lack of regularly flowing, potable water in Ashaiman disturbed and inhibited his devotional practices.

Water and Power

In addition, there was evidence of strategic political negotiations occurring around water in Ashaiman, though these were not likely to happen in the public eye. For one man who owned a fish pond, the availability of water remained crucial both to his livelihood and to his legitimacy as Opinion Leader of his electoral area. He explained that when he began distributing water from his storage tanks to disconnected neighbours, the water company cut him off and issued him a large charge. He claimed that the water company sought to win the people’s favor and turn them against him (Interview, 3 July 2012). Although his fish pond was designed to collect natural rainfall, the water company claimed he had taken from the network and had to pay for the unaccounted for services. When they cut off his water they also cut off water for the entire electoral area, challenging his position of leadership and a reputation of charity. Hence, “It became a dialogue between the officers of the water company and me. They wasted my time, challenging me. I told them the source of the water I get here is not from Ghana Water Company... They cut off the water because they did not want to hear my name at all” (*ibid*). He ended up paying the fine to restore the water flow, but he was left with the impression that this incident had weakened the relationship of trust between his neighbors and him, as well as his

⁴⁴ Cow hide, a chewy snack sold commonly on the street in Ghana.

reputation as a community leader. Thus, water was used both to bolster someone's social reputation and to undermine power in this instance.

Modernity and Urban Life

Water was also linked to aspirations of upward social class mobility, modernity and place-identity. For example, a river called Gbemi that crosses through Ashaiman stirred ample commotion and anxiety for residents living close to its contours. I spoke with residents who referred to the River Gbemi that flowed through Ashaiman as a ditch, or a giant gutter (Interview, 20 June 2012). Referring to stagnation of the water flow, they lowered and shook their heads, describing the river as 'choked' with waste, an open sewer (Interview, 18 June 2012).

More than one respondent vividly recalled an incident that occurred two years before, when heavy rainfall swelled the river with such abundance that it unleashed polluted waters and hazardous waste into streets, shoes, and households (Interview, 20 June 2012; Interview, 3 July 2012). In *Imagining Rivers*, Lahiri-Dutt (2000) challenges her readers to consider the river as natural phenomenon composed of symbolic meaning; ideas about what a river can or should do are revealing of human hopes and desires. In Ashaiman, the River Gbemi seemed to be viewed as emblematic of poor health in the city, where the waters' appearance and odors were experienced as regular reminders of inadequate infrastructures and urban planning. The River Gbemi serves as an example of water's socio-nature by reflecting the uncertain state of welfare and health in an unplanned city, and the worry faced by residents who live close to it.

Finally, the artefacts and infrastructures related to water delivery and consumption represent different levels of access to a modern, urban domestic lifestyle that is often coveted in peri-urban spaces, especially in densely-populated slum or informal neighbourhoods. This was observable in Ashaiman, where one can pay 1-2 cedis for a bottle of water, or 10 pesewas for a sachet.⁴⁵ These clean, chilled and conveniently portable varieties of water goods are revered as symbols of innovation, affluence and wealth (Stoler et al., 2012).

Although the above suggests that water would be a central issue around which concerns might be raised in community groups throughout Ashaiman, and that this would justify a LWB

⁴⁵ Equivalent of about 50¢ USD and 0.1¢ USD respectively at the time of the research.

or water user group, this is not reflective of governance strategies as they currently play out. In the next section, I explore the nature of collective decision-making amongst residents of Ashaiman. Specifically, I emphasize the types of governance strategies and community groups that exist at present to consider the implications of these institutional practices for participatory water governance possibilities in this context.

Group Meetings: Considerations of well-being and social support systems

The results of our original survey instrument indicated that groups were not meeting to discuss water explicitly; the entire sample size (100% of survey respondents in Ashaiman) responded negatively to the question “Are there NGOs that deal with water issues in your area?” but this form of quantitative data could not determine whether there were other places or circumstances whereby residents of Ashaiman could discuss water-related concerns. Sitting outside an Internet café in Night Market, a young Ewe-speaking⁴⁶ journalist suggested to me that I would have to change my approach: “They [community groups] are there. But basically, what they do is the welfare of each other. Not in terms of development per se” (Interview, 11 July 2012). A similar idea was conveyed to me two weeks earlier in New Town, speaking with a man and a woman on the porch of her home and sewing business. The man, who was a taxi driver, said, “I don’t think [the clubs] tackle these ‘water issues’...It’s about support, helping each other out. If somebody is in trouble, they help the person. In Ashaiman, that’s how our clubs work” (Interview, 20 June 2012).

In order to gain further insights into the clubs described in the above exchanges, I attended a small sample of meetings in Ashaiman. I observed these clubs as sites of social organization and thus relevant to exploring participatory governance and different institutional forms in the case study context more generally. I received information regarding these groups through community contacts and interviews; I attended four meetings⁴⁷ arranged by the following groups: Ashaiman Women in Progressive Development (AWPD), Ghana Federation

⁴⁶ According to ghanadistricts.com (2006), 18% of the population of Greater Accra is of Ewe ethnicity, which makes Ewe the third largest ethnic group in the region after Akan (39.8%) and Ga-Dangme (29.7%).

⁴⁷ All events were scheduled either weekly or monthly; none of them were one-off events.

of the Urban Poor (GHAFUP) - People's Dialogue (PD),⁴⁸ New Town Friends Club and the Executive Club.

The following is a brief characterization of the meetings, outlined for the purposes of illustrating the varied agendas of the clubs/groups, and the subtle differences between more formalized and invited participation (externally-initiated and/or funded) and less formal, invented participation (resident-initiated and/or funded). Since it was not part of the original research design to attend or document groups operating in Ashaiman, and I was able to do so only later in the field season, a complete set of background information regarding their respective histories, formation, vision or activities is not provided. Where possible, however, I collated further details through websites and reports, and used these to help form the basis of the brief descriptions I provide here.

AWPD is partnered with IBIS⁴⁹, a non-profit Danish non-governmental organization that supports the group as part of its Public Participation in Local Governance (PPLG) program in West Africa. According to their website, AWPD seeks to improve living conditions in Ashaiman as well as engage people in local decision-making, but lacks sufficient resources and training (IBIS West Africa, 2003). The president of the group owned and operated a beauty salon out of her home and helped to coordinate workshops where women could learn “wealth-creation skills”;⁵⁰ for example how to make their own cleaning or hygiene products with household ingredients, or bead making for selling. I was invited to attend their quarterly meeting for AWPD members, as well as a workshop open to the public.⁵¹

Executive Club is a support group whose membership includes spouses and whose main activities revolve around mutual marriage counseling and discussion of family matters. For

⁴⁸ People's Dialogue is a Ghanaian NGO, but it is not local to Ashaiman. GHAFUP and PD were partnered in a project called “Slum Upgrading” at the time of research.

⁴⁹ You may notice that IBIS is not listed in the Abbreviations section of this thesis. The name is not an acronym, but is meant as a symbolic reference to the ibis bird, which is known to fly North to South and “feel at home in both hemispheres” (IBIS Ghana, 2013).

⁵⁰ This is the terminology used by AWPD's president to describe the purpose of the workshop.

⁵¹ Although the two parts of this event were each organized by AWPD members, participants did not necessarily attend both, and the workshop was open to non-members.

example, one of the male club members explained to me that they have discussed how husbands can treat their wives fairly, by respecting rather than expecting the household work they do as “helpers”.

New Town Friends Club is a neighborhood group that meets each Sunday at 4:00 p.m. to discuss “well-being”. Many of the members wore a uniform t-shirt. One of the activities of the group involved taking contributions that could be given to support members when babies are born or a relative falls ill. Groups often had chants or mottos, which they sang together during meetings. In this case, the facilitator would say, “Friends!” to which the crowd replied, “We do!” The vagueness of this chant accurately reflects the broadly defined commitment of club members, which simply put, was to help each other in times of need.

GHAUFUP-PD is a collaborative effort between the community group GHAFUP Ghana Federation of the Urban Poor (GHAFUP) and a Ghanaian NGO called People’s Dialogue. According to a lead representative of GHAFUP, the community group formed with the aim of empowering low-income populations to use their savings to implement more secure housing in their neighborhoods. The meeting revolved around a community ‘slum upgrading’ project unfolding in Tulaku,⁵² for which a large group of women had raised savings to invest in improved housing. I heard multiple mottos chanted by GHAFUP, including, “Homeless” echoed by “I’m not homeless”, and “Information” to which voices replied, “Power”. The project is supported by Slum Dwellers International (SDI), a group that works towards creating a network for the urban poor living in informal settlements globally, to create concrete improvements implemented collaboratively with the community members themselves.

Structure

Although the groups I observed were not formally recognized or widely-known across the municipality of Ashaiman, the meetings I attended exhibited a level of organization and planning that suggested they could not be classified as informal or ad hoc. Understandably, gatherings hosted by AWPD and GHAFUP-PD had a more administrative quality, as their meetings were designed for the specific purpose of reviewing the progress of a project or the performance of the

⁵² Tulaku translates literally to ‘crowd’. This was one of a few areas in Ashaiman where a high density of housing and narrow streets resembled a slum. Tulaku is located close to the motorway and mechanical industries, making it more highly populated and exposed to pollution (see Figure 1).

group. In contrast, the Executive Club and Friends Club meetings were not subject to strict agendas or assigned a specific content; however, I observed that procedures were nonetheless ordered. For example, a suggestion was raised at the New Town Friends Club to rotate specific roles each week so that each person would not be in charge of same tasks. In all cases, certain individuals facilitated the discussion and positioned themselves to face the rest of the group, which was seated in rows, exhibiting a certain semi-formal structure to the meetings.

Content

It is not easy to pinpoint one unilateral objective during the group meetings I attended. Based on the content of these particular sessions, New Town Friends Club and Executive Club appeared to invite discussion of a wide range of topics from specific and personal, to familial and domestic, as well as neighborhood issues like lighting or safety. These two groups were very much oriented towards the general welfare and support of their particular social network. On the other hand, AWPD and GHAFUP-PD meetings followed a somewhat more formal agenda and structure. This may have had to do with the fact that they were initiated or indirectly supported by external organizations; therefore there was a certain element of upward accountability involved.

Participation

Meetings were attended most by adults in the age range of 25-50 years. Men and women alike attended, with the exception of AWPD as it was strictly a women's group. The actual degree of back and forth between members and openness to sharing positive and negative thoughts as well as adapting the agenda was usually fairly strong in all cases, although some differences could be discerned based on whether the group was initiated by residents themselves who were at the helm of shaping the content of the meeting. An interesting tension surfaced in an interview after the GHAFUP-PD meeting, where a representative from GHAFUP explained that they had not been given warning that PD would be present at the meeting, and that whenever they showed up it meant 'paperwork' (Interview, 12 July 2012). This informant maintained that PD operated as though they had a "monopoly over the people" (Interview, 12 July 2012). He went on to explain that, "everyone should have a taste of leadership" and yet he worried that GHAFUP had become "dormant" and "succumbed to authority" (*ibid*).

Generally speaking, the groups I observed were formed based on ideas of improving living conditions in Ashaiman. These examples indicate that social groups are organizing in Ashaiman. This differentiates the case study from those of other low-income populations where an absence of social mobilization in the face of unequal services or disadvantaged bearing of environmental costs has been linked with a disinterest in forming groups, a lack of trust in neighbors, or a mismatch in the idea of participatory decision-making or community governance (See for example Auyero and Swistun, 2009). It also suggests that social networks within Ashaiman have the potential to act as ‘political societies’ forming their own mechanisms of security despite a lack of basic services (Chatterjee, 2004; Anand, 2011). I would also put forth that the clubs depicted here would arguably discuss water issues if they became an acute priority for well-being of the neighbourhood, given that their overarching aim was community well-being and support. Finally, these groups may be important for overall livelihood and security. In the next section, I bring the complex hydro-social waterscape of Ashaiman in conversation with group meeting observations to explore institutional ‘fit’, legitimacy and resilience. Again, these discussions have direct relevance for the issue of what participatory water governance might or should look like, even with the absence of any formal water governance structures in place.

Discussion

Entering the field armed with a fairly optimistic literature on participatory water governance and a survey that indicated residents of Ashaiman lacked regular water access, the apparent absence of systematic support for mitigating water concerns came across as curious and somewhat worrisome. Through fieldwork, I expected to qualify this discrepancy, by finding that there would be clear explanations for why LWBs has not yet been formed. Admittedly, I imagined that I would encounter an eagerness to initiate water user groups in Ashaiman, with appropriate resources and support. In reality, the further I pursued these questions, the more I realized that the circumstance was not as I had anticipated. When it came to water, the quantity and use of resources available did not seem to be as paramount a priority as were concerns more closely related to personal and societal well-being, such as the act of collecting water, storage, paying bills, drainage, etc. With this in mind, it gradually became more evident that an investigation into participatory water governance would have to go beyond testing the appetite for LWBs,

which implied that only one possible realization of water governance was amenable to this complex circumstance.

When I asked people whether they would join a group to discuss water issues in Ashaiman, participants steered the conversation towards ideas about water being linked to all life, and invoked instances where water affected the general well-being and prosperity of themselves or their neighbourhood. I did not ask questions like “tell me what water means to you...” though in retrospect this would have been a good place to start. These transitions in dialogue, recurring and insistent, signaled a critical theme and a disjuncture in the research; there were, in essence, several water(s) and to govern them all within a single group and mandate would be a fastidious if not impossible endeavor. Indeed it appeared somewhat paradoxical that in my research I have found that water could be seen as both central, in that it is linked to all life, and peripheral, in that it is one of many services that are absent or in some way lacking in Ashaiman. In other words, for the residents I spoke with, it did not seem to be a matter of building new institutions for water, rather it seemed more of a concern as to how one would strengthen existing institutions to deal with water. This may in part be due to the possibility that alienation or reification of water from other social realms is not something that is commonly found outside of ‘Western’ ideology. Similarly, through her own work Cleaver has argued that “the privileging of single aspects of people’s identities for institutional purposes is problematic as it ill reflects complex social and livelihood identities and multiple motivations” (2002:18). By insisting on water-focused institutions, grounded in hegemonic ideas of what counts as ‘water’ (and what amounts to participation in governing water), participatory water governance as it is often crafted may overlook a variety of concerns and desires, which may nonetheless hinge on water access or relations of water access.

The implication of acknowledging hydro-social dimensions of water is that it no longer becomes possible to blindly accept ‘modern water’ discourses that tend to abstract water from the context through which it flows. Instead, accentuating the hydro-social compels scholarship in natural resource management to imagine governance approaches that are able to confront the complex realities of water concerns, which encompass wellbeing and livelihood. The tools and processes used to deal with water-related concerns are unique in each context, and are influenced significantly by particular social and cultural traditions, physical setting as well as the individuals

involved (Linton, 2010:55). Institutional arrangements emerge from particular histories, relationships and contexts, which shape their scope and mandate. Cleaver maintains that institutions for natural resource management work more effectively when “they offer cognitive fit with people’s worldviews, providing ontological coherence to understandings of individual and collective action, to people-nature relationships” (2012:48). Where mainstream models of institutional design tend to assume a ‘blank slate’ upon which new social arrangements can be imported, institutional bricolage theory instead acknowledges how the past shapes current modes of cooperation and considers how institutions build upon former traditions in light of new needs (*ibid*:194).

In Ashaiman, groups that gather at the community-level are similarly shaped by broader patterns and customs of social organization and governance. Various types of traditional social support networks have been reported in Ghana since before colonial rule (MacLean, 2002). Scholars working throughout the Sub-Saharan African region highlight the importance of unofficial systems of social and economic insurances operating in marginalized communities (Oduro, 2010; Nino-Zarazua et al., 2012). Arrangements of “informal social protection” are especially instrumental where state welfare services are weak or non-existent, as relationships can help to create a safety net or coping strategy during difficult or uncertain times (Oduro, 2010). For example, attending social events and contributing to networks of social welfare may be an essential security measure whereby “people’s contributions to such ceremonies [e.g. funerals, marriages, naming ceremonies, initiation rites] may serve, in turn, to reaffirm or advance their status within their families and communities and their ability to draw on the resources or support of the group in negotiating their own claims to productive resources” (Berry, 1993:160).

In this case study, many of the participants faced critical well-being concerns on a daily basis, water being implicated within these rather than articulated as independent from them. As distinct institutions are developed in line with government agencies and development policy mandates to deal with more narrowly defined issues, the burden to participate in several separate areas of community governance may become daunting and confusing. Furthermore, scholars have warned that fostering sustainability in resource access must entail institution-building with the aim of long-term political inclusion, not only helping people to achieve their basic needs:

In essence, the current exclusion of the poor from decision-making, project conceptions and fundamental re-imaginings of city development fundamentally impedes a more responsive set of institutions.... Most poverty alleviation approaches are focused on supporting individuals and households to achieve basic human needs. But from the sustainability perspective—understood broadly—this actually undercuts the need for political inclusion. Given the constraints on political agency and economic opportunity that exist among many communities of the poorest of the poor, representative organisations of the poor are of particular significance.... It is therefore time to pay more attention to the kinds of popular institutions of the poor that can be effective at influencing formal institutional structures (Bradlow, 2013:8).

Along these lines, adaptive governance literatures assert that a pluralistic approach may be beneficial, promoting dynamism as a means to improve adaptive capacity and security in the face of changing conditions (Conca, 2006; Pahl-Wostl et al., 2013). Evidence exists that ‘fitting’ governance regimes within a rigid design of management institutions can reduce the capacity of that group to cope with variability (Wilson, 2006; Folke et al., 2007). As such, “the optimal ‘fit’ between institutions and the resources they govern may not be the tightest fit” (Folke et al., 2007:9). Institutions with more flexible agendas and governance structures may be more resilient in some instances, than those constructed to fix a very specific set of problems. However, this in and of itself does not suffice and these authors are quick to point out a need for cross-scale coordination amongst other large governance institutions. In a study of irrigation co-management in Indonesia, Bruns (2013) observes patterns of episodic mobilization, suggesting that effective social organization may occur at intervals *as a response to* critical water problems, rather than water issues structuring social organization more generally. He further states the following:

Attempts to divorce irrigation governance from other local governance systems cut across the grain of local social relationships...Communities often find this insistence on separate organizations confusing and burdensome; if the rewards are compelling enough, however, they are more than willing to comply, at least superficially, with the mandated formalities (ibid:261).

Polycentricity looks at combinations of various kinds of institutions at different scales in contrast to one-size-fits-all panacea approaches (Meinzen-Dick, 2007; Ostrom, 2007). By combining a bricolage framework with notions of polycentric governance, it is possible to imagine an adaptive institutional structure where water-related concerns can be raised as that does not replace customary practices altogether but is part of a broader social safety net. Ostrom (2007) refers to these kinds of institutions as nested organizational structures, which recombine

practices from diverse sources and present unique cooperation opportunities. Similarly, in Ashaiman, if joining a local water group held the promise of attaining more ready access to water resources, I am certain that many people would show interest and become involved in some capacity. However, as a long-term measure to deal with overall struggles of well-being in the area, a single-purpose water-focused user group would not be the most effective or sustainable option for governing a complex of concerns in these areas.

Moreover, institutions themselves are “living” in the sense that they evolve, transform, expand and contract (Alexander, 2005). A bricolage approach to institutional study allows for an explicit acknowledgement that these active social units are often (re)shaped by improvisation, where “existing decision-making arrangements and relations of cooperation may be coopted for new purposes” (Cleaver, 2002:21). This flexibility and ability to adapt to changing concerns appears central to the way social support networks operated in parts of Ashaiman. For example, the ‘objectives’ of these meetings or institutions were often impossible to isolate into a singular goal. Rather, they tended to reflect a more malleable, multi-purpose concept of welfare and social support. Furthermore, the activities of these groups or clubs were necessarily characterized by improvisation, reflecting the diversity of challenges faced in peri-urban areas with regard to basic services and well-being, and their structures are invented or pieced together over time.

Since these arrangements often do not resemble a formal committee or follow a fixed agenda, they may ultimately go unrecognized or be construed as extraneous. Hence, Cleaver uses the term “invisible institutions” to refer to the tendency to *not* see less formalized, multi-purpose institutions as institutions in their own right (2012:58). I argue that these systems of social governance can be considered ‘institutions’ that effectively provide channels for participation in governance of issues that are raised as important for the group. Indeed, all four groups I observed attracted membership and assembled regularly, investing time and resources in the management of collectively identified concerns. I maintain that clubs or organizations of this kind could deal with water concerns, to a similar extent if not more reliably so, as would a water user group. The discussion above supports this plausibility, by underlining how water concerns are complexly interwoven with welfare and diverse livelihood concerns. It is worth considering then what a more socially embedded notion of water could look like and whether such a hydro-

social approach may fit more comfortably within the purview of organizations such as the ones identified in Ashaiman. This less hydro-centric body of governance would potentially permit members to respond to water, or a range of other social and community concerns, depending on what needs arise, allowing for the ceaseless adjustments which can often be characteristic of living in peri-urban spaces and informal settlements.

Conclusion

In Chapter 2, I discussed the implications of water access in the absence of regular water flow from the municipal network. In this chapter, I examined the liminal spaces and conditions in which opportunities for communities to work together to manage access to water resources are alleged to emerge. Water user groups were not present in Ashaiman, despite the expression of important concerns for most residents in terms of regular water access and overall welfare (Harris et al., 2012). According to the literature, key features of Ashaiman, being a peri-urban site experiencing more than its fair share of rationing ‘cut-offs’, suggest that a Local Water Board might be beneficial in this location to bolster the voice of low-income residents facing higher prices for water through informal or private vendors. However, as this research underscores, circumstances for water services are complexly intertwined with other characteristics of living in Ashaiman, such as housing and mobility. As such, the ‘issue’ of water is ultimately nested within several domains of everyday life and welfare. This warrants further scrutiny of whether more sector-based or singular approaches to water governance are effective and appropriate.

I shifted my interview approach when I found that conversation was stymied when I invoked concepts surrounding participatory water governance, especially local institutions like water user groups or boards. Since these notions and language were unfamiliar, it was difficult to obtain responses that could indicate what enabled or inhibited the development of governance mechanisms, or individual participation in them, in Ashaiman. Recognizing this incongruity and in the quest of identifying the vocabulary that would be relevant to respondents, I instead focused more deliberately on exploring the realities of governance, and questioned ideas of institutional authenticity and legitimacy. It was clear that social institutions were not absent in Ashaiman, and by attending a few meetings I observed that local groups exhibited some features of

formality common in mainstream institutional literature but also a high degree of flexibility or adaptability. Perhaps more importantly in light of the research questions framing this chapter, I found that groups tended not to be sector-specific, instead hinging on the principle of addressing general issues of well-being within a smaller social network or geographical area. This finding suggests that although welfare-focused activities may be understood by some assessments to constitute distractions from other more formal institutional objectives (as per the above quotation from GWP), they may in fact be more fundamentally compatible with participatory water governance aims, certainly the goals towards supporting just and inclusive decision-making and capacity-building at the local level, noble ambitions to which participatory resource management owes much of its glowing reputation in the first place.

Thus, while single-purpose water institutions may be useful for disseminating and monitoring development projects, the experiences and perceptions narrated in this study around water and governance suggested a potentially important mismatch between water governance theory and socio-institutional reality in Ashaiman. For example, based on interviews with residents and group meeting observations, it appeared likely that a certain degree of flexibility within social organizations in Ashaiman might be more effective towards creating a system of social protection, where issues and concerns are wide-ranging and continually in flux. Analysis through a bricolage framework allows for viewing these groups as legitimate institutions that are compatible with a hydro-social perspective of water, rather than invisible or inefficient. The multi-dimensional complexity of water in terms of uses, stakeholders and scales of governance, in turn justifies a polycentric governance approach where arrangements for managing water are dynamic, variable, and critically related to other issues like access to land and the exercise of political power (Cleaver, 2012).

This research offers perspective into the complex hydro-social or social natures of water, by highlighting how access to water is elaborated in diverse ways. Water affects personal safety, ideas of purity and spirituality, and is linked with certain features of the modern urban life. This broader sense of water's social-nature hybridity enables undercurrents of well-being to surface, challenging conventional and formal approaches that uphold the discourse of modern water as abstracted from everyday life. It also underscores the plurality that is at the core of critical institutional theory and practices of social support in Ashaiman. Organized group meetings

tended to have fairly flexible agendas that spanned across several administrative ‘sectors’. When an informant underlined the distinction between welfare and development, they also highlighted different modes or understandings of governance, serving as a reminder that the institutional approaches taken to further social security often stray in significant ways from mainstream models. Perplexed reactions to singular purpose water-focused governance, coupled with observations from group meetings, suggest that establishing a LWB in Ashaiman might not only garner little initial interest, but might actually disrupt an already established social norm for dealing with welfare issues on a multi-purpose basis. Setting up a LWB is still possible in Ashaiman. However, the goals of such a project should align with the goals of the participants. This will require communication with existing social support groups and leaders who are familiar with the process of setting up community groups to address shifting definitions of needs and priorities. As well, the formulaic approach to LWBs must be reoriented towards greater collaboration in the design phases, permitting endemic and diverse governance configurations to emerge which are suitable to the residents they are meant to serve.

Through the analysis of this chapter, my aim was to unsettle participatory water governance literature, by bringing in critical institutional thinking and ideas of hydro-social hybridity and bricolage institutions. ‘Institutional bricolage’ is a useful analytic tool towards expanding what is permissible within the rubric of a water governance institution, by acknowledging the functionality of flexible, multi-purpose support systems. It is also compatible with hydro-social cycle perspectives, which allow space to think about water as hybrid social nature. Although scholars are beginning to peer into lived participatory water governance (e.g. Bakker et al., 2008; Goldin, 2010; Morales and Harris, forthcoming), on the whole the experiences and perspectives of water users themselves have garnered much less analysis, especially those individuals who are not already members of a functional or readily recognizable water group. By interrogating (un)experienced territories of participatory water governance, highlighting diverse experiences of residents in Ashaiman, this chapter speaks to concerns that the ‘modern water’ paradigm informing development interventions does not adequately capture the embedded nature of water in social lives. Organized social support networks help people to insure themselves against insecurities that are omnipresent in their neighborhoods, by creating an informal safety net in the face of inconsistent access to basic services. The uncertain nature of water services is tangled with other day-to-day worries, and is necessarily managed through a

variety of ways in order to avoid the failure of one approach and the neglect of other important needs associated with well-being. In order ensure institutions remain constructive and socially relevant, water governance projects must be careful to avoid imposing singular purpose governance regimes where they may not be compatible with social practice, recognizing that water governance itself rests on contested norms and discourses of what counts as water.

CHAPTER 4: Conclusions

In the chapters above, I employed a case study analysis of the flows of water through connected social and mechanical networks and infrastructures in Ashaiman, highlighting the experiences of residents relayed through interviews and the practices I observed during fieldwork. I outlined possible implications for thinking about governance of water in a way that permits its social contents to be relevant and indeed of primary concern, rather than discreet or abstract. The rest of this chapter will unfold as follows: A brief summary of each chapter is provided. Following this, I acknowledge the potential limitations of the scope of research, conceptually and in terms of methodological approach. Finally, I conclude with a list of recommendations, identifying opportunities where the findings discussed in this thesis can be used constructively as a catalyst for research and practice moving forwards.

Chapter 2 highlighted the ‘chase’ or ‘labyrinth of strategies’ forming a complex web of water access through both formal and informal networks of provision. I propose that a host of informal services and practices are drawn together, forming an assemblage of source-able water where conventional water services alone cannot meet demand. As mentioned above, I am not the first to suggest this. A multitude of scholars and practitioners recognize that informal services supplement water access when pipes are not sufficient (Bakker, 2003; Kjellén and McGranahan 2006; Anand, 2011). There are also numerous reasons to be cautious of celebrating these services, as they can often be disproportionately expensive, as well as pose health and safety risks related to treatment and storage. What I attempted to underscore in this chapter, through attention to the everyday practices and strategies that residents of Ashaiman describe and deploy, are the actual dimensions of informal water services that may be so fundamental in this context, and which might plausibly be incorporated into future peri-urban water planning systems. I see this effort as critical, having gathered from the literature and from widely promoted water policy frameworks that while alternative arrangements for water access are known to exist, the activities of water vendors are often still presented either as irrelevant or somehow too crude or rudimentary to regulate. I return to these thoughts in the recommendations below.

In Chapter 3, I further explore this complex picture of water by applying it to an institutional framework. I propose that a hydro-social framework, coupled with the concept of institutional bricolage, can underline important aspects of water use and social organization that

are not usually captured in formal institutional frameworks for water management, and that might be critical towards engendering sustainable and adaptive water governance at the community scale. Based on two months of observations and critical analysis of the literature, I hypothesize that a preoccupation with water as a singular object of governance may undermine features of everyday practice and social organization that have potential to improve water security and general livelihood in Ashaiman. I argue that institutions in Ashaiman resemble more closely the plurality and diversity of bricolage institutions than they do LWBs or WUAs, and that these can be considered nested governance with potential to be strengthened given enhanced links to other levels of decision-making. To nurture inclusivity and ensure that benefits are reaped by the poor or marginalized, it is essential to take stock of socially-embedded institutions already in place, and to make space for participants to define their needs. Within some social enclaves, individuals are deriving additional security and solidarity through clubs and networks that are actively addressing a range of issues, which is constantly negotiated.

Taken as a whole, my thesis supports evidence that water access is about much more than connecting to a flowing pipe, and that governing water might be a much broader, more holistic endeavor than it is framed in some cases. This perspective challenges technocratic views that promote technologically sophisticated or one-size-fits-all hydraulic systems as net solutions for inefficient water delivery (a net that still needs substantial mending). For example, this research has tried to illuminate the strategies operationalized in Ashaiman to improve or maintain a level and quality of security despite the precariousness of living in a still developing peri-urban settlement. This includes having knowledge of and connections to several possible mediums for sourcing water outside of the official water provider's network. Everyday practices such as these are frequently unaccounted for or are acknowledged merely on a superficial level in water governance assessments. Understanding that residents are supplementing water access through multiple networks and less formal means in some cases to cope with problems of debt or lack of savings, is pertinent information for water policy and planners in similar contexts, especially as other authors have shown how the emergence of patchwork-like systems of water access may trigger new flows and pressures where they were once stagnant or absent (McFarlane and Vasudevan, 2014; Anand, 2011). Furthermore, this approach demonstrates the active role of individuals and social groups, as working extensions of infrastructure, helping to repair fractures in a deficient system of water supply and provision.

It is a hopeful sign that water governance frameworks underline the importance of integrating the distinctive needs of low-income peri-urban populations. However, once these needs are identified, the capacity of water management policies to adjust their practices accordingly has been shown to be limited. A related critique has been levied against IWRM for instance, which calls for the incorporation of different stakeholders and plural interests, yet does not stress the importance of adaptive capacity as key towards coping with changing circumstances as much as it advocates for demand management and supply augmentation (Jeffrey and Gearey, 2006; Linton, 2010). This leads to the question of what is considered to be substantive participation in water governance. Linton argues that communication of diverse ideas is not enough; to be incorporated into the management process means to circle back to a stage of creative negotiation; only then can participatory approaches avoid the situation where “stakeholders and participants are thereby consulted but *not so as to elicit how different players may relate to water in ways other than as a resource whose natural disposition is to be managed* (2010:241, emphasis added). This research supports other studies that suggest it is likely that participatory water governance occurs outside of LWBs and water user groups (Harris and Morinville, 2013). Future research concerned with improving conditions of water access at the local scale could look into whether it would be more effective, mutually beneficial and thus sustainable for water governance to be re-integrated or embedded within existing social support systems and activities. This approach may garner stronger willingness and ability to join and contribute, and may be more conducive a flexible institutional structure where residents can pool resources to define and organize around the established concerns of their neighborhood.

In Ashaiman, and many other peri-urban cities, most of the low-income population resides in compound houses and dense living conditions, where informal water vendors are functional and arguably essential for extending water access beyond the limits of conventional hydraulic infrastructures. This research contributes insights showing that to improve water access in this or similar contexts, it is imperative for management authorities not to merely recognize but to attend to the role of informal water networks in enabling an extended urban waterscape. One step in doing so involves seeking out the vendors themselves for inclusion in water governance arrangements. There are many opportunities for contributing useful research data that can help trigger this process. For instance, it is not yet known just how much pipe-borne water is being diverted for re-selling, or where it is being delivered. Such information could be

profoundly useful, perhaps in the form of a map that includes the current ‘invisible’ extended water flows enabled by informal water vendors. This way, for example, it might be easier to decipher where piped services are most lacking. The findings presented here may also be instrumental towards designing policy approaches concerned with expanding water access to the urban poor. At minimum, as is recommended by The Safe Water Network out of their Beyond the Pipe forum, there is an obvious opportunity here to collect more evidence-based research to better understand the socio-economic impact of alternative water services, in terms of quality, costs and trade-offs for starters (2009). There also needs to be a more concerted effort to give support to community-integrated clubs, institutions and support networks, through partnership and resource sharing with local government and organizations. Among other possibilities, this may help to establish trust by encouraging responsive, adaptive governance across scales.

Amongst concluding remarks, some limitations of the research bear mentioning or reiterating. Conceptually, I hope it is clear that informality does not quite capture the traction that alternative services of water delivery have gained in peri-urban Ghana. Although using this term may in some respects unintentionally perpetuate the perspective of these services as negligible, I have tried to demonstrate evidence to the contrary through my results and discussion. Moreover, even coupled with extensive research, two months of interviews and observations cannot provide an adequate or complete picture of the complicated web of water access in Ashaiman. Related to this, since the majority of interviews were conducted with residents rather than spokespeople for the water company for instance, I recognize that I have not given equal attention to a whole range of views and experiences that are no doubt engendered by the different population groups and stakeholders involved in this issue. As such, this research alone does not stand in as a suitable alternative for current, comprehensive statistics of water access that are much needed to better characterize the water issues in Ashaiman.

There are also several interesting findings I could not explore fully within the scope of this thesis. This includes for example the links made between modernity, freedom and access to water, narratives of identity rooted in place, or the gendered roles at play in water provision and management at the community or household scale. It might be enlightening, for example, to use the hydro-social or socio-ecological lens applied here to re-envision how the waterscape in Ashaiman reproduces or reflects socio-economic inequality that relates to political in- or ex-

clusion. If the opinions and experiences I gleaned from this research are any indication, then there is valid reason to believe that local providers of water services and dwellers in Ashaiman should be playing a much greater role in dictating what kind of water provision and governance are best adapted to their context, supported by local government leaders and NGOs where they are present. Further research into a multi-tiered governance approach such as this would be timely and likely compelling. Moreover, the capacity of the groups or clubs I visited to deal with water-related issues of different kinds requires further study. I was invited to attend group meetings late in my fieldwork, having not initially known of them, or prepared a method for collecting this kind of data. With limited time and resources, it was difficult to ascertain just how widespread and characteristic these institutions were in Ashaiman or elsewhere in the GAMA region. A more longitudinal study into how institutions of these kinds have adapted over time might further illuminate whether the patchwork formal, informal, traditional and modern institutional arrangements Cleaver (2012) is referring to through the concept of ‘bricolage’ is in fact a key feature for managing resources in this case.

Despite the above constraints, this research has grappled with the complex intersections between ideas and realities of water access and governance. The chapters within suggest that a more flexible and multi-tiered approach to water governance may be preferable, as conditions and resources available for dealing with issues that arise are often changing in peri-urban environments and informal settlements. Thinking through the complexity of the waterscape in this case has generated a broader suite of questions and as such represents a crucial step towards understanding where productive research can take place in this field. For instance, what kind of institutional framework, concretely speaking, might be feasibly sustainable in this context? Is it possible to imagine social groups and clubs having the resources, capacity and political weight to engage with local government and public utilities? Is it possible still to imagine informal water networks as a fundamental part of a sustainable peri-urban planning system? What might sustainable water management look like from a hydro-social or bricolage perspective?

Bibliography

- Adank, M., Darteh, B., Moriarty, P., Osei-Tutu, H., Assan, D. and van Rooijen, D. (2011). *Towards integrated urban water management in the Greater Accra Metropolitan Area*. Accra, Ghana: Switch and RCN Ghana.
- Agrawal, A. and Gibson, C.C. (1999). Enchantment and Disenchantment: The Role of Community in Natural Resource Conservation. *World Development*. 27(4): 629-649.
- Agyeman, K. (2007). Privatization of Water in Ghana: stopped in its tracks or strategic pause? *International Journal of Environmental Studies*. 64(5): 525-536.
- Agyenim, J.B. and Gupta, J. (2010). The evolution of Ghana's Water Law and Policy. *RECIEL*. 19(3): 339-350.
- Ahmad, Q.K. (2003). Towards Poverty Alleviation: The Water Sector Perspectives. *International Journal of Water Resources Development*. 19(2): 263-277.
- Ainuson, K.G. (2009). Ensuring adequate water supply to disadvantaged urban communities in Ghana. Ph.D. Thesis. Clemson University: South Carolina, United States America.
- Ainuson, K.G. (2010). Urban water politics and water security in disadvantaged urban communities in Ghana. *African Studies Quarterly*. 11(4): 59-82.
- Akhmouch, A. (2012). 6th World Water Forum Report: Conditions for Success I "Good Governance". World Water Forum: Organization for Economic Co-operation and Development (OECD). www.worldwaterforum6.org. (accessed 17 December 2013).
- Allen, A. (2003). Environmental planning and management of the peri-urban interface (PUI): Perspectives on an emerging field. *Environment & Urbanization*. 15(1): 135-147.
- Allen, A. Davila, J.D. and Hofmann, P. (2006). The peri-urban water poor: Citizens or consumers? *Environment and Urbanization*. 18(2): 333-351.
- AlSayyad, N. (2004). Urban Informality as a "New" Way of Life. In Roy, A. and AlSayyad, N. (Eds.). *Urban informality: Transnational perspectives from the Middle East, Latin America, and South Asia*, pp. 1-32. Oxford, UK: Lexington Books.
- Amenga-Etego, R. and Grusky, S. (2005). The New Face of Conditionalities: The World Bank and Water Privatisation in Ghana. pp.275-290 in David A. McDonald and Greg Ruiters (eds.) *The Age of Commodity: Water Privatization in Southern Africa*. London: Earthscan.
- Anand, N. (2011). PRESSURE: The PoliTechnics of water supply in Mumbai. *Cultural Anthropology*. 26(4): 542-564.

- Andrews, M., Squire, C. and Tamboukou, M. (Eds.). (2008). *Doing Narrative Research*. London: SAGE Publications.
- Appadurai, C. (2002). Deep Democracy: Urban governmentality and the horizon of politics. *Public Culture*. 14(1): 21-47.
- Arku, F. S., Angmor E. N. and Seddoh, J.-E. (2013). Toilet is not a dirty word: close to meeting the MDGs for sanitation? *Development in Practice* 23(2): 184–195.
- Arku, G., Luginaah, I. and Mkandawire, P. (2012). "You either pay more advance rent or you move out": Landlords/Ladies and tenants dilemmas in the low-income housing market in Accra, Ghana. *Urban Studies*. 49(14): 3177–3193.
- Auyero, J. and Swistun, D.A. (2009). *Flammable: Environmental Suffering in an Argentine Shantytown*. New York: Oxford University Press.
- Bakker, K. (2003). Archipelagos and networks: urbanization and water privatization in the South. *The Geographical Journal*. 169(4): 328–341.
- Bakker, K. (2004). *An uncooperative commodity: Privatizing water in England and Wales*. Oxford, UK and New York, USA: Oxford University Press.
- Bakker, K., Kooy, M., Shofiani, N. and Martijn, E. (2008). Governance failure: Rethinking the institutional dimensions of urban water supply to poor households. *World Development*. 36(10): 1891–1915.
- Bangasser, P.E. (2000). *The ILO and the informal sector: an institutional history*. Geneva, Switzerland: International Labour Organization. www.ilo.int/wcmsp5/groups/public/---ed_emp/documents/publication/wcms_142295.pdf (accessed 18 November 2013).
- Barnes, J. (2013). Who is a water user? The politics of gender in Egypt's water user associations. pp. 185-198, in L.M. Harris et al. (eds.). *Contemporary Water Governance in the Global South: Scarcity, marketization and participation*. New York: Routledge.
- Bathsheba, E.Y. (2011). An assessment of the service delivery of GWCL/AVRL in the Sunyani Municipality. Ph.D. Thesis. Kwame Nkrumah University of Science and Technology: Kumasi, Ghana.
- Bayat, A. (1997). Un-Civil society: The politics of the informal people. *Third World Quarterly*. 18(1): 53-72.
- Bayat, A. (2010). *Life as politics: How ordinary people change the Middle East*. Stanford, CA: Stanford University Press.

- Berry, S. (1993). *No condition is permanent: The social dynamics of agrarian change in sub-Saharan Africa*. Madison: University of Wisconsin Press.
- Bloom, B.D. and Crabtree, B.F. (2006). Making Sense of Qualitative Research: The qualitative research interview. *Medical Education* 40:314-321.
- Bradlow, B. (2013). Inclusion: A Sustainability Agenda for African City Growth. *Perspectives: Political Analysis and Commentary from Africa*. Heinrich Boll Foundation. 3(12): 6-10.
<http://www.sdinet.org/blog/categories/slum-upgrading/> (accessed 14 February 2014)
- Bromley, R. (1978). Introduction-the urban informal sector: Why is it worth discussing? *World Development*. 6(9): 1033–1039.
- Brooks, D.B., Brandes, O.M. and Gurman, S. (2009). *Making the most of the water we have: The soft path approach to water management*. London: Earthscan.
- Brosius, J.P., Tsing, A.L. and Zerner, C. (1998.) Representing communities: Histories and politics of community-based natural resource management. *Society and Natural Resources: An International Journal*. 11(2): 157-168.
- Bruns, B. (2013). Bureaucratic Bricolage and Adaptive Comanagement in Indonesian Irrigation. pp. 255-277 in J.R. Wagner (Ed.) *The Social Life of Water*. New York: Berghahn Books.
- Budds, J. and Minaya, A. (1999). *Overview of Initiatives Regarding the Management of the Peri-Urban Interface. Draft for Discussion*. Strategic Environmental Planning and Management of the Peri-Urban Interface Research Project. The Development Planning Unit (DPU): London.
- Budds, J. and Hinojosa, L. (2012). Restructuring and Rescaling Water Governance in Mining Contexts: The Co-Production of Waterscapes in Peru. *Water Alternatives*. 5(1): 119-137.
- Burns, D. Howard, J., Lopez-Franco, E., Shahrokh, T. and Wheeler, J. (2013). *Work with us: How people and organisations can catalyse sustainable change*. Brighton, UK: International Development Institute.
www.ids.ac.uk/files/dmfile/Workwithus_HowpeopleandorganisationscancatalysesustainablechangeFINAL.pdf (accessed 18 November 2013).
- Chase, S.E. (2008). Narrative Inquiry: Multiple Lenses, Approaches, Voices. pp. 57-94 in N.K. Denzin and Y.S. Lincoln (eds.). *Collecting and Interpreting Qualitative Materials*. Thousand Oaks: SAGE Publications.
- Chatterjee, P. (2004). *The Politics of the Governed: Reflections on Popular Politics in Most of the World*. New York: Columbia University Press.
- Clandinin, J.D. and Connelly, M.F. (2000). *Narrative inquiry: Experience and story in qualitative research*. San Francisco: Jossey-Bass.

- Cleaver, F. (1999). Paradoxes of Participation: Questioning Participatory Approaches to Development. *Journal of International Development*. 11: 597-612.
- Cleaver, F. (2002). Reinventing Institutions: Bricolage and the Social Embeddedness of Natural Resource Management. *European Journal of Development Research*. 14(2): 11-30.
- Cleaver, F. (2009). Rethinking agency, rights, and natural resource management. pp. 127-144 in S. Hickey and D. Mitlin (Eds.), *Rights-based approaches to development*. Sterling, VA: Kumarian Press.
- Cleaver, F. (2012). *Development Through Bricolage: Rethinking Institutions for Natural Resource Management*. New York: Routledge.
- Cleaver, F. and Franks, T. (2005). *How institutions elude design: River basin management and sustainable livelihoods*. BCID Research Paper No.12. Bradford Centre for International Development: University of Bradford.
- Collignon, B. and Vézina, M. (2000). *Independent water and sanitation providers in African cities: Full report of a ten-country study*. Washington, DC: Water and Sanitation Program. www.wsp.org/sites/wsp.org/files/publications/af_providers.pdf (accessed 18 November 2013).
- Cohen, A. (2012). Rescaling environmental governance: watersheds as boundary objects at the intersection of science, neoliberalism, and participation. *Environment and Planning A*. 44: 2207-2224.
- Conca, K. (2006). *Governing Water: contentious transnational politics and global institution building*. Cambridge: MIT Press.
- Cook, C. and Bakker, K. (2012). Water security: Debating an emerging paradigm. *Global Environmental Change* 22(1): 94–102.
- Cooke, B. and Kothari, U. (2001). *Participation: The New Tyranny?* New York: Zed Books.
- Cornwall, A. (2002). *Making Spaces, Changing Places. Situating Participation in Development*. IDS Working Paper 170, Brighton: IDS.
- Cornwall, A. and Coelho, V. (Eds.). (2006). *Spaces for Change? The Politics of Citizen Participation in New Democratic Arenas*. London: Zed Books.
- Davis, M. (2006). *Planet of Slums*. New York: Verso.
- Denzin, N.K. and Lincoln, Y.S. (Eds.). (2011). *The SAGE Handbook of Qualitative Research: Fourth Edition*. Thousand Oaks: SAGE Publications.
- Douglas, M. (1987). *How Institutions Think*. London: Routledge & Kegan Paul.

- Folke, C., Pritchard, L. Jr., Berkes, F., Colding, J., Svedin, U. (2007). The Problem of Fit between Ecosystems and Institutions: Ten Years Later. *Ecology and Society*. 12(1): 1-38.
- Fuest, C. and Haffner, S.A. (2007). PPP – policies, practices and problems in Ghana’s urban water supply. *Water Policy*. 9: 169-192.
- Gandy, M. (2008). Landscapes of disaster: Water, modernity, and urban fragmentation in Mumbai. *Environment and Planning A* 40(1): 108-130.
- Gaventa, J. (2006). *Finding Spaces for Change: A Power Analysis*. IDS Bulletin. 37(6): 23-33.
- Ghanadistricts.com. (2006). Greater Accra: Cultural and Social Structure. www.ghanadistricts.com (accessed 14 February 2014).
- Ghana Government Portal. (2013). www.ghana.gov.gh (accessed 15 January 2013).
- Ghana Integrity Initiative. (2011). *Ghana’s National Water Supply Integrity Study – Mapping Transparency, Accountability & Participation in Service Delivery: An Analysis of the Water Supply Sector in Ghana*. Cantonment: Accra: Ghana Integrity Initiative and Transparency International Secretariat. <http://www.tighana.org> (accessed 28 April 2013).
- Ghana Statistical Service. (2008). *Ghana living standards survey: Report of the fifth round*. www.statsghana.gov.gh/docfiles/glss5_report.pdf (accessed 18 November 2013).
- Ghana Statistical Service. (2012). *2010 Population and Housing Census: Summary Report of Final Results*. http://www.statsghana.gov.gh/docfiles/2010phc/Census2010_Summary_report_of_final_results.pdf (accessed 14 February 2014).
- Ghana Water Company Limited (GWCL). (2012). www.gwcl.com.gh. (accessed 18 November 2013).
- Giddens, A. (1976). *New rules of sociological method: A positive critique of interpretive sociologies*. London: Hutchinson.
- Giddens, A. (1979). *Central problems in social theory: Action, structure and contradiction in social analysis*. Berkeley and Los Angeles: University of California Press.
- Giddens, A. (1981). *A contemporary critique of historical materialism. Volume 1: Power, property and the state*. London, UK: Macmillan.
- Giddens, A. (1984). *The constitution of society: Outline of the theory of structuration*. Berkeley and Los Angeles: University of California Press.
- Gleick, P.H. (1998). Water in Crisis: Paths to Sustainable Water Use. *Ecological Applications*. 8(3): 571-579.

- Gleick, P.H. (2000). The Changing Water Paradigm: A Look at Twenty-first Century Water Resources Development. *International Water Resources Association*. 25(1): 127-138.
- Gleick, P.H. (2002). Water management: Soft water paths. *Nature*. 418(6896): 373.
- Global Water Partnership (GWP). (2009). *Strategy: 2009-2013*. Stockholm, Sweden: Global Water Partnership. www.gwpforum.org. (accessed 24 March 2013).
- Global Water Partnership West Africa. (2009). *Assessment of Water Governance in Ghana*. Ouagadougou, Burkina Faso: GWP/WA. www.gwpao.org (accessed 24 March 2013).
- Goldin, J.A. (2010). Water Policy in South Africa: Trust and Knowledge as Obstacles to Reform. *Review of Radical Political Economics*. 42(2): 195-212.
- Goldin, J.A. 2013. The participatory paradigm: anathema, praise and confusion. pp.179-184 in L.M. Harris et al. (eds.), *Contemporary Water Governance in the Global South: Scarcity, marketization and participation*. New York: Routledge.
- Gough, K. V. and Yankson, P. (2011). A Neglected Aspect of the Housing Market: The Caretakers of Peri-urban Accra, Ghana. *Urban Studies*. 48(4): 793–810.
- Government of Ghana. (1996). *ACT 522: Water Resources Commission Act*. wrc-gh.org. (accessed 13 September 2012).
- Government of Ghana. (2007). National Water Policy. Accra, Ghana: Ministry of Water Resources Works and Housing. http://docs.watsan.net/Downloaded_Files/PDF/Ghana-2007-National.pdf (accessed 18 November 2013).
- Graham, S. and Marvin, S. (2001). *Splintering urbanism: Networked infrastructures, technological mobilities and the urban condition*. New York: Routledge.
- Grant, R. and Yankson, P. (2003). Accra. *Cities*. 20(1): 65–74.
- Harris, L.M. (2009a). Gender and emergent water governance: Comparative overview of neoliberalized natures and gender dimensions of privatization, devolution and marketization. *Gender Place and Culture* 16(4): 387-408.
- Harris, L.M. (2009b). Contested sustainabilities: Assessing narratives of environmental change in southeastern Turkey. *Local Environment*. 14(8): 699-720.
- Harris, L.M. (2011). Neo(liberal) citizens of Europe: Politics, scales, and visibilities of environmental citizenship in contemporary Turkey. *Citizenship Studies*. 15(6-7): 837-859.
- Harris L.M., Goldin, J.A., Darkwah, A., EDGES, AOW. (2012). *Water Access and Participatory Governance of households in Informal Settlements in Accra, Ghana and Cape Town, South Africa*.

- Harris, L.M., Goldin, J.A. and Sneddon, C. (Eds.). (2013). *Contemporary Water Governance in the Global South: Scarcity, Marketization and Participation*. New York: Routledge.
- Hart, K. (1973). Informal income opportunities and urban employment in Ghana. *Journal of Modern African Studies*. 11(1): 61–89.
- Hickey, S. and Mohan, G. (Eds.). (2004). *Participation—From Tyranny to Transformation?: Exploring New Approaches to Participation in Development*. New York: Zed Books.
- Hirsch, A. (2013). Ghana: West Africa’s safe haven of stability has its own challenges. *The Guardian*. <http://www.theguardian.com/world/2013/oct/30/ghana-west-africa-haven-own-share-problems> (accessed 20 December 2013)
- Hossain, S. (2011). Informalization of public utilities: Claim making and political control. *The Planning Review*. 47(187): 82-91.
- Hunt, J., Smith, D., Garling, S., and Sanders, W. (Eds.). (2008). *Culture, power and institutions in Indigenous Australia*. Canberra: The Australian National University.
- IBIS Ghana. (2013). History of IBIS. ibisghana.org/about-ibis/history-ibis/ (accessed 14 February 2014).
- IBIS West Africa. (2003). Ashaiman: Introduction/Background. ibiswestafrica.com (accessed 14 February 2014).
- International Labour Organisation (ILO). (1972). *Incomes, employment and equality; a strategy for increasing productive employment in Kenya*. Geneva, Switzerland: International Labour Organisation. www.ilo.org/public/libdoc/ilo/1972/72B09_608_engl.pdf (accessed 18 November 2013).
- Jeffrey, P. and Gearey, M. (2006). Integrated water resources management: lost on the road from ambition to realization? *Water Sciences & Technology*. 53(1): 1-8.
- Jensen, K.M. (2013). Viewpoint – Swimming against the current: Questioning development policy and practice. *Water Alternatives*. 6(2): 276-283.
- Joint Monitoring Programme (JMP). (2013). Ghana. <http://www.wssinfo.org/data-estimates/table/> (accessed 18 November 2013).
- Jones, A. and Murphy, J.T. (2010). Theorizing practice in economic geography: Foundations, challenges, and possibilities. *Progress in Human Geography*. 35(3): 366–392.
- Kaika, M. (2003). Constructing Scarcity and Sensationalising Water Politics: 170 Days That Shook Athens. *Antipode*. 35(5): 919-954.

- Kaika, M. (2005). *City of flows: Modernity, nature, and the city*. New York, USA and London, UK: Routledge.
- Kaika, M. and Swyngedouw, E. (2000). Fetishizing the modern city: The phantasmagoria of urban technological networks. *International Journal of Urban and Regional Research*. 24(1): 120–138.
- Kajri, M. (2014). From formal/informal to emergent formalization: Fluidities in the production of urban waterworlds. *Water Alternatives* 7(1): 15-34.
- Kjellén, M. and McGranahan, G. (2006). *Informal water vendors and the urban poor*. London, UK: International Institute for Environment and Development, Human Settlements Programme. <http://pubs.iied.org/pdfs/10529IIED.pdf>. (accessed 18 November 2013).
- Kpessa, M.W. and Atuguba, R.A. (2013). Grounding with the People: Participatory Policy Making in the Context of Constitution Review in Ghana. *Journal of Politics and Law*. 6(1): 99-110.
- Lahiri-Dutt, K. (2000). Imagining Rivers. *Economic and Political Weekly*. 35(27): 2395-2397+2399-2400.
- Laube, W. (2007). The Promise and Perils of Water Reforms: Perspectives from Northern Ghana. *Afrika Spectrum*. 42(3): 419-437.
- Levi-Strauss, C. (2004). *The Savage Mind: Nature of Human Society*. Oxford: Oxford University Press.
- Linton, J. (2010). *What is Water: The History of a Modern Abstraction*. Vancouver: UBC Press.
- Lister, R. (2003). *Citizenship: Feminist perspectives*. Basingstoke: Palgrave Macmillan.
- Lobina, E. and Hall, D. (2003). Problems with private water concessions: A review of experience. *Public Services International Research Unit*. London: University of Greenwich.
- Loftus, A. (2006). Reification and the dictatorship of the water meter. *Antipode*. 38(5): 1023–1045.
- Loftus, A. (2009). Rethinking Political Ecologies of Water. *Third World Quarterly*. 30(5): 953-968.
- Lovins, A.B. (1977). *Soft energy paths: Toward a durable peace*. Cambridge: Ballinger Publishing Company.
- MacLean, L.M. (2002). Constructing a Social Safety Net in Africa: An Institutionalist Analysis of Colonial Rule and State Social Policies in Ghana and Côte d'Ivoire. *Studies in Comparative International Development*. 37(3): 64-90.

- Mbembe, A. and Nuttall, S. (2004). Writing the World from an African Metropolis. *Public Culture*. 16(3): 347-72.
- McFarlane, C. (2011). The city as assemblage: dwelling and urban space. *Environment and Planning D: Society and Space*. 29(4): 649-671.
- McFarlane, C. and Vasudevan, A. (2014). Informal infrastructures. pp. 256-274 In P. Abey, D. Bissell, K. Hannam, P. Merriman, and M. Sheller. (Eds.). *The Routledge Handbook of Mobilities*. New York: Routledge.
- McFarlane, C. and Waibel, M. (Eds). (2012). *Urban informalities: Reflections on the formal and the informal*. Farnham, UK: Ashgate.
- McGregor, D., Simon, D. and Thompson, D. (Eds.). (2006). *The peri-urban interface: Approaches to sustainable natural and human resource use*. London, UK: Earthscan.
- Mehta, L. (2005). *The poetics and politics of water: The naturalization of scarcity in western India*. New Delhi: Orient Blackswan.
- Mehta, L., M. Leach, and I. Scoones. (2001). Editorial: Environmental governance in an uncertain world. *IDS Bulletin*. 32(4): 1–9.
- Mehta, L., Leach, M., Newell, P., Scoones, I., Sivaramakrishnan, K., and Way, S.A. (1999). *Exploring Understandings of Institutions and Uncertainty: New Directions in Natural Resource Management* (Vol. 372). University of Sussex: Institute of Development Studies.
- Meinzen-Dick, R. (2007). Beyond Panaceas in Water Institutions. *Proceedings of the National Academy for Sciences of the United States of America*. 104(39): 15200-15205.
- Meinzen-Dick, R. and Zwarteveen, M. (2008). Gendered participation in water management: Issues and illustrations from water users' associations in South Asia. *Agriculture and Human Values*. 15: 337-345.
- Merrey, D.J., Meinzen-Dick, R., Mollinga, P., and Karar, E. (2007). Policy and Institutional Reform Processes for Sustainable Agricultural Water Management: The Art of the Possible, pp. 193-231 in D. Molden (ed.). *Water for Food, Water for Life: A Comprehensive Assessment of Water Management in Agriculture*. London: Earthscan.
- Merrey, D.J. and Cook, S. (2012). Fostering Institutional Creativity at Multiple Levels: Towards Facilitated Institutional Bricolage. *Water Alternatives*. 5(1): 1-19.
- Ministry of Water Resources, Works and Housing (MWRWH). (2009). *Water and Sanitation Sector Performance Report: 2009*. Government of Ghana.

- Miraftab, F. (2004). Invited and Invented Spaces of Participation: Neoliberal Citizenship and Feminists' Expanded Notion of Politics. *Wagadu: Journal of Transnational Women's and Gender Studies*. <http://web.cortland.edu/wagadu> (accessed 24 March 2014).
- Miraftab, F. (2009). Insurgent planning: Situating radical planning in the global South. *Planning Theory* 8(1): 32-50.
- Mohanty, R. and Tandon, R. (Eds.). (2006). *Participatory Citizenship: Identity, Exclusion, Inclusion*. Thousand Oaks: SAGE Publications.
- Molle, F. (2008). Nirvana Concepts, Storylines and Policy Models: Insights from the Water Sector. *Water Alternatives*. 1(1): 131-56.
- Mollinga, P. (2013). Canal Irrigation and the Hydrosocial Cycle. *Geoforum*. <http://dx.doi.org/10.1016/j.geoforum.2013.05.011> (accessed 15 October 2013).
- Morales, M. and Harris, L.M. (forthcoming). Using Subjectivity and Emotion to Reconsider Participatory Natural Resource Management. *World Development*.
- Moriarty, P., Butterworth J., and Batchelor, C. (2004). *Integrated Water Resources Management and the domestic water and sanitation sub-sector*. Thematic Overview Paper. Delft, The Netherlands: IRC International Water and Sanitation Centre.
- Morinville, C. (2012). Beyond the pipe: Participation and alternative water provision in underserved areas of Accra, Ghana. MA Thesis. Institute for Resources, Environment and Sustainability, The University of British Columbia, Vancouver, Canada.
- Morinville, C. and Harris, L.M. (2013). Participation's limits: Tracing the contours of participatory water governance in Accra, Ghana. In Harris, L.M.; Goldin, J.A. and Sneddon, C. (Eds), *Contemporary water governance in the global South: Scarcity, marketization and participation*, pp. 216-231. London, UK, and New York, USA: Routledge.
- Mosse, D. (2003). *The Rule of Water: Statecraft, Ecology and Collective Action in South India*. New York: Oxford University Press.
- Myers, G. (2011). *African cities: Alternative visions of urban theory and practice*. New York: Zed Books.
- Narain, V. (2010). *Periurban water security in a context of urbanization and climate change: A review of concepts and relationships*. Peri Urban Water Security Discussion Paper Series, Paper No. 1, SaciWATERS.
- Nino-Zarazua, M. et al. (2012). Social Protection in Sub-Saharan Africa: Getting the Politics Right. *World Development*. 40(1): 163-176.

- Nyarko, K.B., Odai, S.N., Owusu, P.A., and Quartey, E.K. (2008). *Water supply coping strategies in Accra*. Paper presented at the WEDC International Conference: Access to Sanitation and Safe Water: Global Partnerships and Local Actions, Accra, Ghana, 7-11 April 2008. http://wedc.lboro.ac.uk/resources/conference/33/Nyarko_K2_GHA.pdf (accessed 18 November 2013).
- Oduro, A.D. (2010). *Formal and Informal Social Protection In Sub-Saharan Africa*. European Report on Development.
- Opoku-Ankomah, Y., Dembélé, Y., Ampomah, B.Y., and Somé, L. (2006). Hydro-political Assessment of Water Governance from the Top-down and Review of Literature on Local Level Institutions and Practices in the Volta Basin, IWMI, Working Paper 111, 36 p.
- Osei-Kufuor, P. (2010). Does institutionalizing decentralization work? Rethinking agency, institutions and authority in local governance: A case study of Ntonaboma in Kwahu-North District, Ghana. PhD Dissertation: University of Bradford.
- Osmani, S.R. (2000). *Participatory Governance, People's Empowerment and Poverty Reduction*. SEPED Conference Paper Series. (Vol. 7). http://www.undp.org/seped/publications/conf_pub.htm (accessed 14 October 2013).
- Ostrom, E. (1990). *Governing the commons: The evolution of institutions for collective action*. New York: Cambridge University Press.
- Ostrom, E. (2005). *Understanding institutional diversity*. Princeton, NJ: Princeton University Press.
- Ostrom, E. (2007). A diagnostic approach for going beyond panaceas. *Proceedings of the National Academy of Sciences*. 104(39): 15181-15187.
- Osumanu, I.K. and Abdul-Rahim L. (2008). *Enhancing community-driven initiatives in urban water supply in Ghana*. 33rd WECD International Conference, Accra, Ghana.
- Owusu, T.Y. (1999). The Growth of Ashaiman as a Squatter Settlement in the Tema District of Ghana, 1950-1990. *The Arab World Geographer*. 2(3): 234-249.
- Owusu, G., Agyei-Mensah, S. and Ragnhild, L. (2007). Slums of hope and slums of despair: Mobility and livelihoods in Nima, Accra. *Norwegian Journal of Geography*. 62(3): 180-190.
- Pahl-Wostl, C., Becker, G., Knieper, C., and Sendzimir, J. (2013). How Multilevel Societal Learning Processes Facilitate Transformative Change: A Comparative Case Study Analysis on Flood Management. *Ecology and Society*. 18(4): 58.
- Pangare, G. and Pangare, V. (2008). Informal water vendors and service providers in Uganda: The ground reality. *The Water Dialogues: Informal Water Vendors, Uganda*.

www.waterdialogues.org/documents/InformalWaterVendorsandServiceProvidersinUganda.pdf (accessed 18 November 2013).

- Peil, M. (1976). African Squatter Settlements: A Comparative Study. *Urban Studies*. 13:155.
- Peloso, M. and Morinville, C. (2014). 'Chasing for Water': Everyday practices of water access in peri-urban Ashaiman, Ghana. *Water Alternatives*. 7(1): 121-139.
- Phillips, D., Williams, K., Andrews, G., Clarke, J., Carter, M., Kinsman, P., Smith, D., Willis, K., Bradbury, I., Wu, K., and Hillyer, A. (1999). *Literature Review on Peri-Urban Natural Resource Conceptualisation and Management Approaches*. Final Technical Report. DFID Natural Resources Systems Programme (NRSP). Project R6949. University of Nottingham and University of Liverpool.
- Public Utility Regulatory Commission (Ghana). (2008). Annual Report 2008. www.purc.com.gh/purc/node/71 (accessed 18 November 2013).
- Public Utility Regulatory Commission (Ghana). (2013). Press release: Approved electricity and water tariffs 1st October 2013. www.purc.com.gh/purc/sites/default/files/approved_electricity_and_water_tariffs_2013.pdf (accessed 18 November 2013).
- Putnam, R.D. (1994). Social Capital and Public Affairs. *Bulletin of the American Academy of Arts and Sciences*. 47(8): 5-19.
- Reissman, C.K. (1993). *Narrative Analysis*. Qualitative Research Methods Series v.30. Newbury Park: SAGE Publications.
- Rogers, P. and Hall, A. (2003). *Effective water governance*. GWP Technical Committee Background Paper No.7. Stockholm: Global Water Partnership. www.gwpforum.org (accessed 10 September 2012).
- Roy, A. (2005). Urban informality: Toward an epistemology of planning. *Journal of the American Planning Association*. 71(2): 147-158.
- Roy, A. (2009a). Strangely familiar: planning and the worlds of insurgence and informality. *Planning Theory*. 8(1): 7-11.
- Roy, A. (2009b). Civic Governmentality: The Politics of Inclusion in Beirut and Mumbai. 41(1): 159-179.
- Roy, A. and AlSayyad, N. (Eds). (2004). *Urban informality: Transnational perspectives from the Middle East, Latin America, and South Asia*. Oxford, UK: Lexington Books.

- Ryan G.R. and Bernard, H.R. (2003). Techniques to Identify Themes. *Field Methods*. 15(1): 85-109.
- Safe Water Network. (2009). *Beyond the Pipe: Delivering Safe Water Solutions to Underserved Populations*. Safe Water Network and John Hopkins Center for Water and Health.
http://www.srtt.org/institutional_grants/pdf/Safe_water_network_forum.pdf (accessed 14 February 2014)
- Saldana, J. (2013). *The Coding Manual For Qualitative Researchers*. Second Edition. Thousand Oaks: SAGE Publications.
- Sarpong, G.A. (2008). *Customary Water Laws and Practices*. FAO.
www.fao.org/fileadmin/templates/legal/docs/CaseStudy_Ghana.pdf. (accessed 15 October 2012)
- Scott, J.C. (1990). *Domination and the arts of resistance: Hidden transcripts*. New Haven, CT: Yale University Press.
- Scott, J.C. (2009). *The art of not being governed: An anarchist history of upland southeast Asia*. New Haven, USA and London, UK: Yale University Press.
- Sewell, W.H. Jr. (1992). A theory of structure: Duality, agency and transformation. *American Journal of Sociology*. 98(1): 1-29.
- Simone, A. (2004). People as infrastructure: Intersecting fragments in Johannesburg. *Public Culture*. 16(3): 407-429.
- Sindzingre, A. (2006). The relevance of the concepts of formality and informality: A theoretical appraisal. pp. 58-74 in Guha-Khasnobis, B.; Kanbur, R. and Ostrom, E. (Eds), *Linking the Formal and Informal Economy: Concepts and Policies*. Oxford, UK: Oxford University Press.
- Sneddon, C. (2013). Water, governance and hegemony. pp. 13-24 in L.M. Harris et al. (eds.), *Contemporary Water Governance in the Global South: Scarcity, marketization and participation*. New York: Routledge.
- Solanes, M. and Gonzalez-Villarreal, F. (1999). *The Dublin Principles for Water as Reflected in a Comparative Assessment of Institutional and Legal Arrangements for Integrated Water Resources Management*. Stockholm: Global Water Partnership/Swedish International Development Cooperation Agency.
- Songsore, J. (2008). Environmental and structural inequalities in Greater Accra. *The Journal of the International Institute*. 16(1): 8-13.

- Stoler, J., Fink, G., Weeks, J.R., Otoo, R.A., Ampofo, J.A. and Hill, A.G. (2012). When urban taps run dry: Sachet water consumption and health effects in low income neighborhoods of Accra, Ghana. *Health & Place*. 18(2): 250–262.
- Stoler, J., Weeks, J.R. and Fink, G. (2012). Sachet drinking water in Ghana's Accra-Tema metropolitan area: Past, present, and future. *Journal of Water, Sanitation and Hygiene for Development*. 2(4): 223–240.
- Subramanian, A. et al. (Eds.). (1997). *User Organizations for Sustainable Water Services*. World Bank Technical Paper no. 354. Washington: The World Bank.
- Suleiman, L. and Cars, G. (2010). Water Supply and Governance in Accra: “authentic” or “symbolic”. *Water Policy*. 12: 272-289.
- Swilling, M., Simone, A., and Khan, F. (2003). “My Soul I Can See”: The Limits of Governing African Cities in a Context of Globalization and Complexity. pp. 220-250 in P.L. McCarney and R.E. Stren (eds.). *Governance on the Ground: Innovations and Discontinuities in Cities of the Developing World*. Baltimore: The John Hopkins University Press.
- Swyngedouw, E. (2004). *Social power and the urbanization of water*. Oxford, UK: Oxford University Press.
- Swyngedouw, E. (2009). The Political Economy and Political Ecology of the Hydro-Social Cycle. *Journal of Contemporary Water Research & Education*. 142: 56-60.
- Training, Research and Networking for Development Group (TREND). (2012). WASHTech, The Project. <http://washtechafrica.wordpress.com/ghana/> (accessed 18 November 2013).
- UN-Habitat. (2003). *The Challenge of Slums: Global Report on Human Settlements 2003*. Sterling: Earthscan Publications.
- UN-Habitat. (2012). *The urban future: Report of the sixth session of the world urban forum*. Naples, Italy, 1-7 September 2012. www.unhabitat.org/documents/WUF6Report.pdf (accessed 18 November 2013)
- United Nations Population Division. (2003). *World Urbanization Prospects: The 2003 Revision Population Database*. New York: United Nations.
- Vavrus, F.K. (2003). A Shadow of the Real Thing: Furrow Societies, Water User Associations and Democratic Practices in the Kilimanjaro Region of Tanzania. *Journal of African American History*. 88(4): 393-412.
- Wallace, D.F. (2009). *This is Water: Some Thoughts, Delivered on a Significant Occasion, about Living a Compassionate Life*. New York: Little, Brown and Company.

- WaterAid. (2005). *National Water Sector Assessment: Ghana*. London, UK: WaterAid.
www.wateraid.org/~media/Publications/national-water-sector-assessment-ghana.pdf
 (accessed 18 November 2013).
- WaterAid. (2008). *Urban sector assessment report*. Accra, Ghana: WaterAid.
www.wateraid.org/~media/Publications/urban-sector-assessment-report.pdf (accessed 18 November 2013).
- Waters, H. (2013). (Dis)connecting the flow, steering the waters: building hegemonies and ‘private water’ in Zambia, 1930s to the present. pp. 133-148 in L.M. Harris et al. (eds.), *Contemporary Water Governance in the Global South: Scarcity, marketization and participation*. New York: Routledge.
- Wengraf, T. (2001). *Qualitative Research Interviewing: Biographic Narrative and Semi-Structured Methods*. Thousand Oaks, California: SAGE Publications Ltd.
- Whitfield, L. (2006). The Politics of Urban Water Reform in Ghana. *Review of African Political Economy*. 33(109): 425-448.
- Wilson, J.A. (2006). Matching social and ecological systems in complex ocean fisheries. *Ecology and Society*. 11(1): 9. <http://www.ecologyandsociety.org/vol11/iss1/art9/> (accessed 15 October 2012).
- Wittman, H. and Geisler, C. (2005). Negotiating locality: Decentralization and communal forest management in the Guatemalan highlands. *Human Organization*. 64(1): 62-74.
- WHO-UNICEF. (2013). *Refining the definitions: an ongoing process and the ladder concept*.
<http://www.wssinfo.org/definitions-methods/introduction/> (accessed 15 December 2013).
- Wilshusen, P.R. (2009). Social process as everyday practice: the micro politics of community-based conservation and development in southeastern Mexico. *Policy Science*. 42(2): 137-162.
- WMO. (2013). *The Dublin Statement on Water and Sustainable Development*.
<https://www.wmo.int/pages/prog/hwrrp/documents/English/icwedece.html> (accessed 14 April 2013).
- World Bank. (1989). *Ghana – Structural adjustment for growth*. Washington, DC: World Bank.
<http://documents.worldbank.org/curated/en/1989/01/738717/ghana-structural-adjustment-growth>. (accessed 15 April 2013).
- Wutich, A. and Ragsdale, K. (2008). Water Insecurity and Emotional Distress: Coping with supply, access, and seasonal variability of water in a Bolivian squatter settlement. *Social Science & Medicine*. 67: 2116-2125.

- Yeboah, I. (2006). Subaltern strategies and development practice: Urban water privatization in Ghana. *The Geographical Journal*. 1: 50-65.
- Yiftachel, O. (2009). Theoretical notions on 'Grey Cities': The coming of urban apartheid? *Planning Theory*. 8(1): 88-100.
- Yin, R.K. (2003). *Case Study Research: Design and Methods*. Thousand Oaks: SAGE Publications.
- Yueng, H.W-C. (2005). Rethinking relational economic geography. *Transactions of the Institute of British Geographers*. 30(1): 37-51.
- Zwarteveen, M. and Neupane, N. (1996). Free Riders or Victims: Women's Nonparticipation in Irrigation Management in Nepal's Chhattis Mauja Irrigation Scheme. Research Report No. 7, Colombo: International Irrigation Management Institute.

APPENDIX

Interview Guide

A. GENERAL DEMOGRAPHICS

Male / Female (Circle)

Age: _____

Languages Spoken: _____

Marital Status: Single / Married / Other (Circle)

How many children (if any): _____

How many people living in your household? _____

Employment: _____

B. CHARACTERIZATION

1. Is this the neighbourhood in which you live?
 - a. (If yes) How long have you lived here?
 - i. (If not long) Where did you live before?
 - ii. How is it that you moved to Ashaiman?
 - b. (If not) Where are you from? What brings you to Ashaiman today?
2. How would you describe the water situation in Ashaiman?
 - a. Where do you get your water?
 - b. How much do you pay for water?
 - i. What portion of your income would you say you spend on water?
 - ii. Who do you buy your water from?
 - iii. What do you think about the price of water?
**Prompts:* Too high? What would be a 'good' or 'fair' price in your opinion?
 - c. How much time do you spend retrieving water?
 - d. Who retrieves the water?
 - e. How does the water situation affect you and your family?
 - i. How does it affect your livelihood?
 1. Your happiness? Your well-being?
 - ii. Have you ever experienced water shortages?
 1. (If yes) Tell me about it. How did you feel when water was less available?
 - iii. Do you feel that you would have a support network to rely on if water became more difficult to obtain or afford?
**Prompt:* Describe what you would do.

- iv. Do you feel that you have the ability to change the way water is distributed if you are unhappy with it?
**Prompt:* Describe how you might go about this.
- v. How would you describe the water situation here, compared with the global water condition?
- 3. Are there people or groups that you know of in the neighbourhood that work on water issues?
 - a. (If yes) Who/What are they?
 - i. What do they do?
 - b. (If not) Who manages water in the area?
 - i. **Prompt:* Who cleans the pipes/tank for example?

C. EFFECTS

- 1. How are decisions made with regards to planning for water?
- 2. Are there water user associations or water user boards?
 - a. (If yes) How do they work?
 - i. Have you been asked to attend?
 - ii. What can you tell me about them?
**Prompts:* What do they do well? What could be improved?
 - b. (If not) Who represents your interests/the interests of the neighbourhood when it comes to water?
 - i. Do you think Ashaiman should have a group that works on water issues?
 - 1. Why/why not?
 - 2. What kinds of functions do you imagine such an entity would serve?

D. MITIGATION & POLICY

- 1. In your opinion, are your interests, water-related or otherwise, represented and accounted for by policy-makers or management authorities?
- 2. Are you involved in a Water User Association or Board (committee or group, etc.)?
 - I. (If yes) How is it that you became involved in this group?
 - a. What kinds of things do you do (attend meetings, speak at meetings, volunteer, speak to government, or negotiate with neighbours...)?
 - b. What, in your opinion, is the Water Board's most important function?

- a. If you knew of a group that met to discuss water issues, would you become involved?
 - b. Why/why not?
- 3. If given the opportunity, what do you think you would bring up at meetings?
 - I. What are the kinds of things you might recommend for water services?

E. ADDITIONAL/FINAL THOUGHTS

1. Can you remember an event or occasion when people in the community worked well together to achieve a goal?
2. Tell me about your vision for how water should be handled in your neighborhood.
3. Is there anything else you'd like to tell me about?