Soaked Freetown
Problematizations of Urban Water Connections

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For my mother, Ingrid Rosenkranz-Gosch

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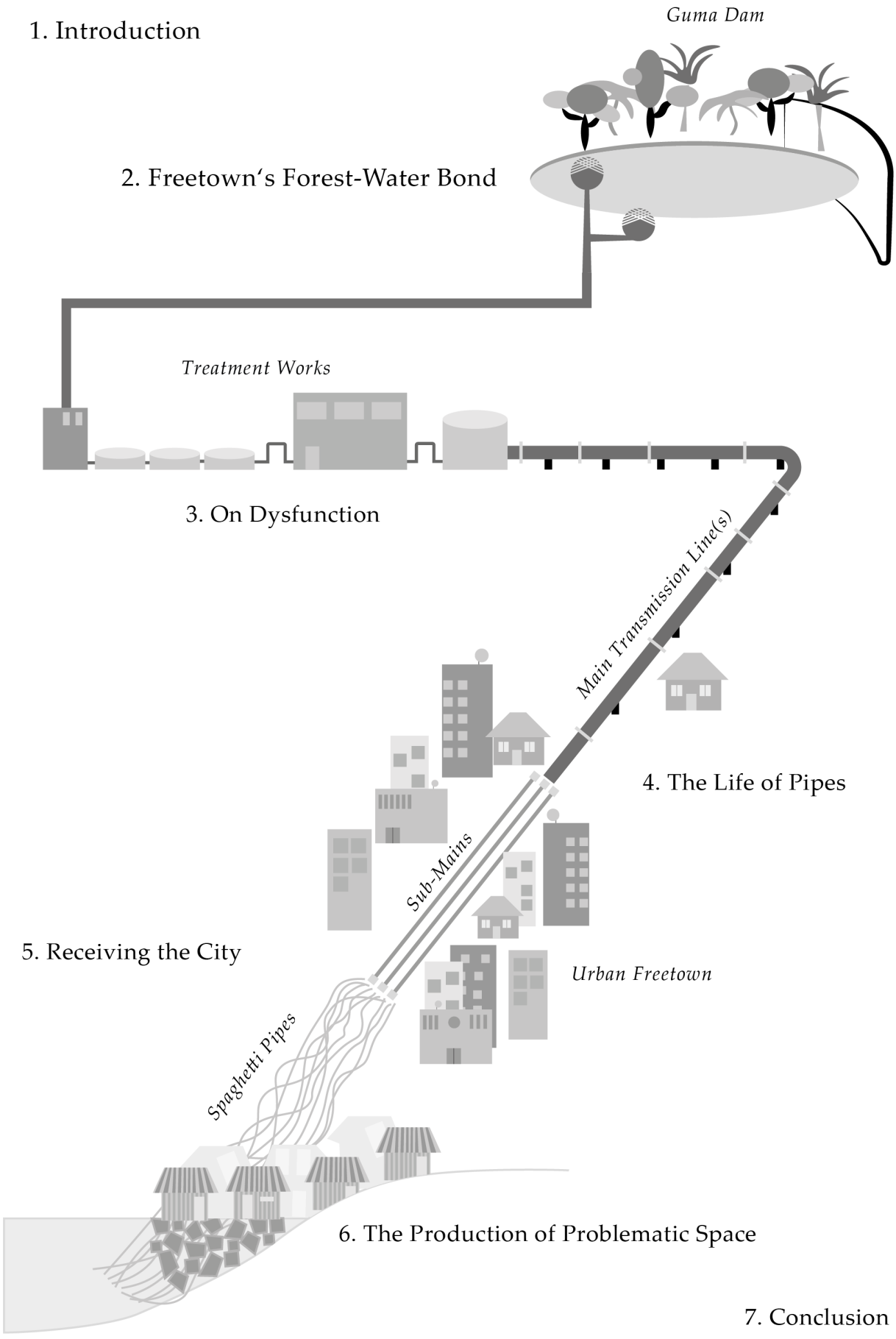

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Deutsche Zusammenfassung

Die vorliegende Arbeit mit dem Titel „LIQUIFYING THE URBAN: Problematizations of Water in Freetown, Sierra Leone“ beschäftigt sich mit Wasserproblemen in Freetown, der Hauptstadt Sierra Leones. Wasserprobleme werden hierbei nicht als Gegebenes aufgefasst, sondern als das Ergebnis von Interpretation. Mit anderen Worten, Problemen veränderten oder verschoben sich, je nachdem mit wem man über das entsprechende Thema sprach. Die Wirkungen, die verschiedene Wassertypen (Leitungswasser, Regenwasser, Meereswasser) auf das Leben und den urbanen Raum in Freetown hatten, wurden von den unterschiedlichen Akteuren auf unterschiedliche Weise interpretiert. Forschungsgegenstand der Arbeit sind dementsprechend Problematisierungen von Situationen, Bedingungen und Beziehungen bzw. Verflechtungen, die Wasser zur Zeit der Feldforschung in der Stadt hervorbrachte. Unterschiede zwischen Problematisierungen betrafen unter anderem folgende Aspekte des zu definierenden Problems: was das Problem konkret verursacht habe, wie schwerwiegend das Problem sei und wer dafür verantwortlich sei, wie mit dem Problem praktisch umzugehen sei und schließlich wie Lösungen aussehen könnten.

Die Kernbegriffe sind *Problematisierung* und *Wasserverbindung* (“water connections“). Mit letzterem Begriff meine ich Verbindungen, die Wasser in der Stadt knüpfte und die sich auf verschiedene Weise in den Problematisierungsakten widerspiegelten. Dabei gehe ich von Wasser als einer Substanz aus, die extrem bindungsaktiv bzw. interaktiv ist. Wasserströme zersetzen oder lösen andere Materialien ab. Wasser fungiert zudem als Medium: es transportiert unterschiedlichste Dinge, wie etwa Müll, Trümmer, Fäkalien und Krankheitserreger. Durch seine Aktivitäten in der Stadt kann Wasser aber auch Verbindungen auf diskursiver Ebene stiften. Ein Beispiel dafür wären etwa Annahmen über Kausalbeziehungen, die in Problematisierungsakten explizit gemacht werden.

Der Fokus auf Problematisierung ist dahingehend besonders vielversprechend, da er es erlaubt, Einblicke in die Art und Weise zu bekommen, wie BewohnerInnen der Stadt sowie externe Akteure das Leben und die räumliche Dynamik in Freetown gedanklich fassten und kontextualisierten. Problematisierungen gaben Aufschluss darüber, was für Konflikte und Debatten es in Freetown gab. Dabei wurden kleinere, konkrete Probleme oft mit generellen, die ganze Stadt betreffenden, Problemen verknüpft, beispielsweise mit Sorgen zu urbanem Wachstum oder der Zukunft der

Stadt in Hinblick auf Abholzung, Landnahme und Wasserversorgung. Problematisierung von Wasserbeziehungen oder -verbindungen zum Forschungsgegenstand zu machen, ist auch deshalb sinnvoll, weil Freetown allgemein ein Kontext war, der extrem durch Problematisierung geprägt war. Im Rahmen meiner Feldforschung habe ich beobachtet, dass Problematisierung ein selbstverständlicher und ubiquitäre Modus war, um sich auf Leben und Raum in der Stadt Freetown zu beziehen. Dies hing insbesondere mit der Omnipräsenz humanitärer Akteure und Terminologien zusammen, die sich spätestens nach Ende des Bürgerkrieges (1991-2002) in der Hauptstadt Sierra Leones etabliert hatte. Verkörpert wurde diese Präsenz unter anderem durch Sensibilisierungsinitiativen, insbesondere zum Thema Hygiene und Wasserkonsum.

Wasser spielte in Freetown eine große Rolle, insbesondere als etwas, das Probleme verursachte. Verunreinigtes Leitungswasser und regelmäßige Überflutungen von Teilen der Stadt wurden tagtäglich als Problem artikuliert und diskutiert. Freetowns sehr vertikales Profil (die Stadt befindet sich zwischen dem Meer und steilen Hügeln) sorgte dafür, dass Regenwasser in enormen Mengen und mit großer Wucht durch die Stadt floss. Einige Viertel der Stadt litten unter diesen reißenden Wassermassen mehr als andere. Leitungswasser wiederum war ein ständiges und ausgesprochen aufgeladenes Thema. Dies betraf insbesondere den Zugang zu sauberem Trinkwasser. Das Wassersystem der Stadt war dem ständigen Einfluss von Verkehr, Wetter und Menschen, die sich Teile dieses Systems aneigneten, ausgesetzt. Vor allem PVC-Rohre, die private Haushalte und Gemeinschafts-Wasserhähne mit den größeren Rohren verbanden, waren oft beschädigt oder wurden durchtrennt, um Wasser abzuzapfen. Die Wasserwerke der Stadt, die Guma Valley Water Company, standen regelmäßig in der Kritik, das Wassersystem nicht effektiv und effizient zu verwalten. Korruptionsvorwürfe waren an der Tagesordnung.

Das Hauptaugenmerk der Arbeit liegt auf Leitungswasser. Im Rahmen meiner Feldforschung (sieben Monate, von 2017 bis 2018) bin ich dem Wasser gefolgt, vom Stausee (Guma Dam), über die Aufbereitungsanlage, in den urbanen Raum und ins Meer. Andere Wassertypen, wie etwa Regenwasser und Meerwasser, waren ebenfalls regelmäßig Teil von Problematisierung und werden in zwei Kapiteln angesprochen. Die Feldforschung selbst fand einerseits in den zwei (Slum-) Gemeinden Susan's Bay und Thompson Bay statt, sowie andererseits in der Guma Valley Water Company, den Wasserwerken der Stadt.

Kapitel zwei beschäftigt sich mit der Verbindung von Wasser und Wald. Während meines Aufenthaltes in der Stadt ist mir aufgefallen, dass die Abholzung und das Besiedeln der steilen Hänge im Inneren der Halbinsel, auf der sich Freetown befand, nicht nur mit Verweis auf eine mangelhafte Stadtplanung und einem erhöhtem Erosionsrisiko kritisiert wurden, sondern dass der Wald als essenzieller Bestandteil des Wassersystems verstanden wurde. Der Wald wurde als hydrologischer Einzugsbereich definiert. Dies bedeutete, dass Freetowns Wasserversorgung an das Bestehen(bleiben) des Waldes um den sogenannten Guma Dam geknüpft wurde. Dies war ein Stausee, der als Hauptversorgungsquelle für die Stadt fungierte. Im Kapitel nähere ich mich dieser Verknüpfung von Wald und (Leitungs)Wasser auf verschiedenen Ebenen. Ich ziehe eine Reihe von konzeptionellen Werken und anderem Material heran, um zu verstehen, wie diese Verknüpfung möglich war und welches ihre spezifischen Merkmale in Bezug auf den Kontext Freetown und allgemeiner Sierra Leone waren.

Kapitel drei widmet sich dem Thema Dysfunktion. Ganz im Sinne meines Ansatzes zu Problematisierung, werden infrastrukturelle Dysfunktion und Desorganisation hier nicht als gegebene Bedingungen betrachtet. Stattdessen definiere ich sie als eine Form von Problematisierung. Meine Diskussion findet auf Basis meines ethnographischen Materials statt. Im Kapitel reflektiere ich zwei Momente meiner Feldforschung, während derer ich mit der Frage konfrontiert wurde, inwiefern Freetowns Wasserinfrastruktur dysfunktional war. Einerseits sind mir während meiner Besuche der Wasseraufbereitungsanlage diverse Mängel im System aufgefallen: Sandfilter, die nicht richtig funktionierten, kaputte Messeanlagen sowie das Fehlen notwendiger Materialien zur bakteriologischen Untersuchung des Wassers. Andererseits habe ich Reparaturarbeiten an einer der Haupt-Pipelines begleitet. An einer der Leitungen gab es ein großes Leck. Dies sollte im Rahmen der Arbeiten behoben werden. Dabei sind mir unterschiedliche Dinge in der Planung und Durchführung aufgefallen, die nicht funktionierten oder für Schwierigkeiten sorgten. Beispielsweise wurde im Vorfeld kein passendes Ersatzteil für das Rohr beschafft. Als, während der Reparaturarbeiten, schließlich Ersatz geliefert wurde, stellte sich heraus, dass das neue Teil nicht die richtigen Maße hatte. Das Kapitel diskutiert diese zwei Momente während meiner Feldforschung und stellt sich die Frage, mit welchen konzeptionellen Mitteln Stereotype vermieden werden können, die afrikanische Infrastrukturen als „notwendigerweise“ oder „selbstverständlich“ dysfunktional bezeichnen. Dabei stelle ich drei Herangehensweisen vor, die eine Reproduktion vereinfachender und vorurteilsbehafteter Stereotype umgehen können. Diese fungieren als

Arbeitskategorien und umfassen: Kontextualisierung, Reinterpretation und Relativierung. Nach meiner Diskussion dieser Kategorien und auf welche Weise diese meine Beobachtungen rahmen würden, gehe ich auf die konzeptionellen Vorteile eines Ansatzes, der über oder durch Problematisierung arbeitet, ein.

Kapitel vier dreht sich um das Leben von Rohren in Freetown. Wie schon gesagt, waren die unterschiedlichen Rohrtypen einer urbanen Umwelt ausgesetzt, die sehr interaktiv war. Während meiner Feldforschung habe ich viel mit den WasserarbeiterInnen und IngenieurInnen von Guma zusammengearbeitet. Dabei habe ich deren Alltag im „Feld" sowie diverse Problematisierungen von Arbeit am Wassersystem kennengelernt. Arbeiter kritisierten oft die schlechten Arbeitsbedingungen, etwa mangelhafte Schutzausrüstung und Werkzeuge. Zudem waren sie verantwortlich dafür, ein System am Leben zu erhalten, das tagtäglich von nicht autorisierten BewohnerInnen der Stadt verändert und angeeignet wurde, beispielsweise durch „illegale" Wasseranschlüsse. Insbesondere lokale KlempnerInnen sorgten für einen ständigen Wettstreit um Zugang auf das Wassersystem. Freetowns Wasserinfrastruktur erschien dementsprechend als zutiefst umkämpft und unbeständig. Um ihre Arbeit tun zu können und das System zu erhalten, waren Gumas WasserarbeiterInnen und IngenieurInnen tagtäglich gezwungen, zu improvisieren und sich den Umständen anzupassen, die sie vor Ort vorfanden. Im Zuge meiner Diskussion diskutiere ich eine konzeptionelle Verschiebung von *Infrastruktur* hin zu *Infrastrukturierung* ("infrastructuring"). Letzteres steht für Forschungsansätze, die infrastrukturelle System nicht als stabile, d.h. unveränderliche Strukturen und die Art und Weise, wie diese das Leben von Menschen bedingen oder rahmen, verstehen, sondern die Betonung auf Arbeit, Prozess, Offenheit legen. Infrastrukturelle System erscheinen sodann als Arrangement, das verschiedene Akteure versammelt, immerzu erhalten werden muss, angeeignet wird und Ort intensiver Auseinandersetzungen (Konflikte, Aushandlungen) ist.

Kapitel fünf thematisiert Erfahrungen des Ausgesetztseins. Die Slum-Gemeinde Susan's Bay war zwei Arten von gefährlichen Wasserströmen ausgesetzt. Auf der einen Seite befand sich die Gemeinde am Ende des Wassersystems. Die BewohnerInnen dieser Gemeinde waren sich des prekären Lebens von Rohren in Freetown, beschrieben im vorigen Kapitel, bewusst. Bis das Wasser bei ihnen ankam, war es durch einen Großteil Freetowns geflossen und zwar durch Rohre, die oft Lecks hatten und dementsprechend Raum für Kontamination boten. Ein wichtiger Bezugspunkt bei der Problematisierung des Leitungswassers war das Bild des Rohr in

der Gosse bzw. dem Abwasserkanal. Dies waren kleine Kanäle überall in Freetown, die eigentlich zum Abführen von Regenwasser gedacht waren. In der Praxis jedoch, sammelten sich in diesen über das ganze Jahr Müll und Abwasser (es gab in der Stadt kein separates Abwassersystem). PVC-Schläuche, die das Leitungswasser zu privaten Haushalten oder "community taps" transportierten, verliefen oftmals durch diese Kanäle. Im Angesicht dieses Umstands mussten BewohnerInnen einen Umgang mit einer Art Leitungswasser finden, das Krankheitserreger oder andere schädliche Substanzen enthalten konnte. Unter anderem hatten sie ein Repertoire an Techniken entwickelt, um die Qualität des Wassers zu ermessen. Dabei spielten vor allem Geschmack und Geruch eine Rolle, sowie die visuelle Sichtbarmachung von Sedimenten durch eine Technik, die als "shifting" bezeichnet wurde. Mein Hauptarbeitsmaterial in diesem Kapitel sind Interviews, die ich mit Timothy Conteh geführt habe. Im Rahmen der Interviewexzerpte treten Unterschiede im Umgang mit der Leitungswasserproblematik zutage. BewohnerInnen von Susan's Bay problematisierten das Wasser mit unterschiedlicher Vehemenz und demonstrierten unterschiedliche praktische Umgangsformen. Einige tranken ohne Einschränkung das Leitungswasser, andere suchten alternative Wasserquellen auf und wieder andere BewohnerInnen konsumierten nur verpacktes Wasser. Während der erste Teil des Kapitels – nämlich der zu Leitungswasser – sich mit Heterogenität innerhalb von Susan's Bay beschäftigt, beleuchtet der zweite Teil einen Zusammenhang, der allgemeiner die Stadt mit einbezieht. Nicol Creek, ein Fluss, der in Susan's Bay ins Meer mündete, verwandelte sich mit den ersten starken Regenfällen einer jeden Regenzeit zu einem reißenden Strom und verursachte regelmäßig starke Überschwemmungen. Es war jedoch nicht lediglich die enorme Masse an Regenwasser, das solche Überflutungen bewirkte, sondern die Kombination von Wasser und was ich als urbane Ausscheidungen ("urban excretions") bezeichen: Müll, Schutt, Abwasser bzw. Fäkalien. Größere Mengen an Abfall, die sich über die Trockenzeit nicht nur in den Abwasserkanälen, sondern auch den Flussläufen der Stadt ansammelten, ballten sich und verursachten eine Art Blockade, wodurch das Wasser-Abfall-Gemisch nicht abfließen konnte. Die BewohnerInnen von Susan's Bay waren dementsprechend einer Wasserbeziehung ausgesetzt, über die sie keine effektive Kontrolle hatten. In anderen Worten, sie mussten die urbanen Ausscheidungen des Rests der Stadt erdulden und aushalten, bevor diese ins Meer abflossen. In den Problematisierungsakten machten sie auf diese Erfahrung aufmerksam und verwiesen explizit auf den Rest der Stadt sowie auf die Vernachlässigung von Seiten der Regierung und des Stadtrates.

Kapitel sechs beschäftigt sich mit "banking." Dies war eine Praxis, im Rahmen dessen Land kreiert wurde. In den Küstengemeinden der Stadt – unter anderem Susan's Bay und Thompson Bay, einer anderen Gemeinde, in der ich geforscht habe – schufen BewohnerInnen (in spe) bebau- und bewohnbares Land, indem sie Material an bestimmten Stellen aufschütteten. Als Baumaterialien wurde entweder "poto poto" genutzt – eine Schlammmischung –, Sand oder Abfall. Land, das auf diese Weise geschaffen wurde, galt in der Stadt und vor allem in den Augen der zuständigen Behörden, als unsicher. In diesem Kapitel erörtere ich, auf welche Weisen die Praxis banking und Gemeinden, in denen dies eine Rolle spielte, problematisiert wurden und mit welchen größeren Themen oder Problematisierungen dies in Beziehung gesetzt wurde. Dies betraf vor allem, die Themen Umweltzerstörung, eine unkontrollierte Urbanisierung und das Besiedeln von "disaster-prone areas," d.h. Gegenden, die mit erhöhten Risiken in Bezug auf Erosion oder Überschwemmungen assoziiert wurden. Dabei diskutiere ich einerseits die Perspektive eines Angehörigen der NPAA (National Protected Area Authority) sowie von Menschen, die in Gemeinden lebten, die durch banking entstanden waren oder in denen dies eine aktive Rolle spielte.

Ich beende die Arbeit, indem ich noch einmal auf den Fokus auf Problematisierung von Wasser(verbindungen) eingehe. Dabei hebe ich vor allem die Stärken eines solchen Ansatzes hervor. Der Ansatz, Situationen, Bedingungen und Verbindungen, die Wasser in Freetown hervorbrachte, durch die Art und Weise zu betrachten, wie diese als Problem artikuliert wurden, ist sehr vielversprechend. Es ermöglicht, Widerspruch und Reibung sichtbar zu machen sowie die Varianten, wie „kleine" Probleme, im Sinne einer Kontextualisierung, mit „großen" in Beziehung gesetzt wurden. Problematisierung ist eine produktive Methode, um sich der Frage, wie „wir" urbanes Leben und urbanen Raum denken, anzunähern; insbesondere in einem Bezugsrahmen wie Freetown.

1. Introduction

(11.09.2017) It was the very first day of my stay in Freetown. The rainy season was still casting masses of water from the sky. I wanted to go from the house where I was staying to Lumley Roundabout, just a kilometre or so away. All night it had rained heavily. After some hours of relative dryness, it was now pouring again. I got into a taxi and we drove down Regent Road. At a crossing the water was coming down a steep road on our right. It came down with considerable power, the crossing itself being flooded entirely. I gave the driver a look of concern but he just kept going after having closed the windows. We drove onto the crossing and the car was hit by the stream. Water was pressing against the window pane on my side. It was loud! Water also came from the bottom inside the car. Both my backpack and my feet were not just wet but underwater. I was seriously frightened. The Freetown I had come to know in March that same year had been a wholly different one, an utterly dry one that is. Albeit quite a pluviophile, I was unsure which Freetown to prefer given the sheer mass of water. The taxi driver did not pay too much attention to the water and calmly steered toward the roundabout.

The place I am writing about here is Freetown, capital city of Sierra Leone. It is[1] a city of around one to two million inhabitants, squeezed in-between steep hills and the sea at the very tip of a peninsula. Spatially intense, one might say. The ethnographic snippet above offers an impression of the hectoring power of water, as I encountered it in Freetown in the year of 2017. Over the seven months of my stay in the city, water appeared mainly as problematic matter. Something that produced problems all over town. Something that necessitated effort. Something that caused damage and cost lives on a regular basis. The present work engages with these water issues[2]. However, I conceive of problems not as something which is given but as something that is articulated on the basis of interpretation. Thus, the focus is on acts of problematization. In Freetown, water raised all kinds of concerns. In the present study, I take a close look at water problems *as they were formulated*. Thus, I am interested in (1) the different ways that water flowed through the city, (2) how concrete situations, conditions and connections created by water were articulated as problems, and (3) the various ways residents and other actors in the city practically engaged with the defined issues. At the very core this text is about acts of problematization and water connections. I understand the latter not in a technical or engineering sense but a general, figurative

[1] A word on temporality: I generally write in past tense when writing about Freetown as the site of my fieldwork, (apart from conditions or aspects that are very general and unchanging). In discussions concerning literature or more abstract topics I write in present tense.
[2] I use the words 'issue' and 'problem' synonymously.

one. As in: how different things and people in the city were connected through or by water; what these connections meant and what kind of consequences arose from them; how they composed everyday life in urban Freetown; and what exactly it was that flowed down these problematic streams – not just water. In order to clarify the subject, I will (re)turn to the outset of my fieldwork in this place.

1.1. Fieldwork Perspectives: From Water Problems to the Problematization of Water Connections

In the beginning, my aim was to write an account of water supply in Susan's Bay, one of Freetown's largest slums. The community was located close to the city centre, at the very border to the sea. Every day I headed down into this place of some fifteen thousand with its narrow, labyrinthine alleys in-between walls of corrugated metal. Living conditions were — community members were more than clear on this — appalling. Though, residents were also capable of navigating these by deploying a range of skills. These were above all different ways of knowing and engaging with their environment.

Speaking about tap water – since that was what I was researching in the first place –, this meant knowing when and where to get water. It was about measuring its quality and coping with unavoidable uncertainties. Within the community there were a small number of "illegal"[3] but tolerated water taps – at the time of my stay, there were three functioning ones. Here one could get water on three days a week. Water was rationed all over the city. Yet, in some communities supply schedules were more reliable than in others. The rationing of piped water applied both during the dry as well as the rainy season. The former rendered the question of reliability even more acute. Sometimes, water simply did not come. On other days, it did but only for a couple of hours. This meant that residents had to be highly flexible and adaptive. In addition to this, tap water was generally considered unsafe for drinking. Many residents – in particular those who could afford to or those who found themselves within reach of an alternative water source – hence chose not to consume the tap water (or at least treat it before consumption) and to use it merely for doing laundry.

[3] I use quotation marks here because access to drinking water is an existential need and, thus, represents an especially sensitive topic. The persecution of "illegal" connections is, in itself, a subject worth to be problematized (see also chapter four).

The reason for this uncertainty concerning the water quality was in the setting and condition of the pipes carrying the water into the community. Susan's Bay was not directly connected to the city's water system: the community was located at the system's periphery. Residents had to access it more or less "illegally" by means of long, fragile PVC pipes. These hoses carried the water into the community, often running through gutters filled with sewage water – there was no sewage system in Freetown separate from the gutters meant to take in rainwater. Concerns about such "pipes in the gutters" were a common theme which I came across on a daily basis. In general, there was plenty of consideration and concern about the missing supply of piped water.

However, as I learned in the first weeks of my stay, tap water was not the only kind of water that represented a pressing issue in this community. During the rainy season, Susan's Bay experienced severe flooding on a regular basis. Storm water came down the steep hills into which the city had grown, flowed through the city and hit the lower-levelled slum communities at the coast line with dramatic force. What came down, meanwhile, was not merely water but a mixture of debris, waste, and sewage, which had accumulated in the gutters and along roads all dry season long. The storm water flows were powerful enough to drag all of this along. Accordingly, for residents of Susan's Bay it was necessary to manage these kinds of water flows too. On the one hand, they had to reduce the impact of the roaring water masses. On the other hand, there were considerable repairs and clean-ups necessary after such flooding events.

Finally, there was another type of water that was a cause of concern: seawater played a much more constitutive role in this community than might have been apparent at first glance. That is to say, large parts of Susan's Bay were in fact the result of a practice called "banking." Residents had built into the sea which is to say they had produced habitable land by accumulating waste and mud in designated spots, pushing the community farther and farther out. Thus, large parts of the community were built on waste deposited in the sea. However, banking as a practice was deemed illegal by authorities. This applied above all to those communities located along Aberdeen Creek, a kind of lagoon in Freetown's far West. In Thompson Bay, a community where I conducted part of my field research and which was situated right at the Creek, conflicts about banked land were frequent and revolved around issues such as urban planning, ownership and the right to the city. There were also disputes and uncertainty regarding the stability of banked land, especially in the face of extreme weather events and the constant workings of salty seawater. While in Thompson Bay and the other

communities along Aberdeen Creek banking was a relatively recent process, in Susan's Bay this practice had been constitutive of the community's spatial extent since the 1990s.

Taking these things into account, Susan's Bay was the nexus of three different types of water (flows), each of which had a heavy impact on everyday life in the community. Notably, the waters represented an aspect of life in this community that was at the same time both ordinary as well as imperative and acute. They were also explicitly relational which, as I will argue, made them an interesting object of research. The waters connected Susan's Bay to other places in and around Freetown. I have already indicated that these flows dragged along other things as well; some of which rendered the problematic – in the sense of being problematized on a regular basis – connection (more) dramatic. For example, when pathogens entered the tap water, the question was where this took place, under what conditions, and who was to be held responsible for this. The situation spawning this condition was diffuse and obscure. The consequences resulting from these water connections, meanwhile, were evident albeit not necessarily homogeneous.

Of course, residents made these connections explicit when explaining the issues at hand. Their problematizations were usually accompanied by a certain indexicality. By this I mean references made to other – often rather abstract – locations in order to formulate a causal link regarding the respective water issue. As in: *this* (here) is the problem and *that* (there) is the root cause. When I asked community members to describe issues they experienced with the tap water, they would refer not necessarily to a concrete location but to a vague "above" or "before" them that was to be found upstream. What they were pointing at were thus typical conditions of Freetown's water infrastructure as well as their own position in relation to this system.

This is the point where such problematizations became especially interesting, as they generated larger contexts. It was when speaking about water issues and causality that many of my interlocutors would refer to more general issues in and of "the city." That is, conditions and situations that affected life in most of Freetown and the city as an entity in itself. Points at issue were the past, the present, and the future of Freetown. Why were things the way they were? What had gone wrong in the city? And why did things not change? Speaking about concrete water problems, residents would gravitate towards larger, more abstract topics and spell out the various connections across Freetown. Causal links were not merely articulated, they were contextualized. My interlocutors expressed their views on corruption, the (ir)responsibility of political

elites, land grabbing, deforestation and erosion risks—in other words, ongoing (public) concerns and long-term processes.

Wrapping things up at this point, the problematizations of connections created by water were not just interesting in themselves, but also in the ways they shed light on links across the urban space of Freetown. They offered valuable clues to how residents thought and problematized the city as such. I argue that the city of Freetown as an object to be problematized was construed in these instances. The indexicality involved in the respective acts of problematization was highly spatial(izing) in the ways they framed the composition of urban life in Freetown. Not only did water issues assemble actors and things, as Science and Technology Studies scholars have often pointed out, but problematizations produced a specific kind of Freetown as a space, i.e. a spatio-social becoming.

From Susan's Bay I was referred upstream. Working mainly on tap water, I decided to trace the flow of piped water and reconfigure my scope. I started working with the Guma Valley Water Company (GVWC, here just short "Guma" as in the vernacular). Guma was Freetown's key actor in the water supply sector. The parastatal company was in charge not just of the pipe network throughout the city but also of the facilities producing the water: above all the Guma Dam at Mile 13 (providing by far the largest amount of fresh water) and the treatment works. With the public relations officer of Guma, it was agreed that I would be working mainly with the staff at Station West. There, I was taken under the wings of engineer Gabriel Foday, who became one of my key interlocutors. Several times the week, I would visit the water workers at Station West and join them on their field trips in different areas of Freetown's West, witnessing pipe and water works of various kinds. This collaboration with Guma allowed me to get to know the city's water system at a broader scale. It also gave me valuable insights into the kinds of conflicts that existed around the topic of tap water – in other words, concerns about water supply in different communities, at different "segments" or "stages" of the pipe sequence. Depending on respective location of the matter within or in relation to the broader system, these issues involved different water connections (again: not in the technical sense but as indicated above). As such, they were specific. However, in many cases I noted that, in the act of problematization, 'small' and concrete problems were linked to larger concerns. In other words, they were indexed — interpreted as expressions of more encompassing and more fundamental issues. I have pointed out above that I approach water problems not as given conditions but as the outcome of acts of problematization. While focusing on the ways situations,

conditions and bonds created by piped water were formulated as issues, I also became acquainted with the role of the already-mentioned other types of water flows in the city as there was a significant interweaving between the different waters.

The notion of problematization, as I use it here, is fairly hands-on and closely tied to my ethnographic material. In other words, my reflections on water problems in Freetown resonate strongly with how my interlocutors formulated these and what role water problems played in the city more generally. There are other, more theoretical conceptualizations of problematization, in particular those considering the way Michel Foucault has re-designed this notion (Koopman 2013, Stengers 2021, Grebe 2019, Klöppel 2010). The approach established in the present study is thus much closer to pragmatist concepts of critique and negotiation as well as the work of Noortje Marres. Marres uses the notion of "issuefication" (Marres 2014, Marres and Rogers 2005) to describe the ways objects are charged with issues. The aim of this ethnographic study is to take a close look at what role water problems played in Freetown. I will present a range of situations in which water was defined as a problem. It was never water as such, however, but water in relation to other matter(s). The focus is on how these water connections and the trouble they caused were articulated and framed. In methodological terms: I did not study water problems but problematizations of water. This methodological shift is analogous to the shift from doing a critical study to studying the forms of critique that people practice (Boltanski and Thévenot 1999).

With the above-said in mind, I shall address the life and unfolding of issues in Freetown. In order to carve out the specific features of my argument it is necessary to introduce another aspect of Freetown. For, it is one thing to engage with water problems and the way these figured in everyday life of residents and other actors such as city counsellors and so forth. Yet, it is another thing to do so in a context of an ongoing general and intense discourse centred on problematization or issuefication. That is to say, during the time of my fieldwork, Freetown was saturated with problematization. It became clear to me that it was not me who brought this notion to the field, but the field already had it, so to speak. "It" was ubiquitous. The city was saturated with a sense of urgency and necessity regarding issues such as extreme poverty, disease, domestic violence, lack of access to basic (sanitary) infrastructure. Freetown was commonly perceived as a giant melting pot of problems, acute and chronic. A place of disaster. This applied both to international perspectives as well as local ones. If one looked up "Freetown Sierra Leone" using one of the common search engines, one would (and still will) come across a plethora of NGO websites depicting

the ills of this city. Freetown itself was buzzing with humanitarian actors and language. Banners and posters were everywhere, placed on walls in order to sensitize the population. Problematization took place in newspapers, radio shows, social media, WhatsApp groups, and at street corners. 'It' applied to all levels of local and national politics as well as commonplace activities and conversations. Correspondingly, I refer to problematization (or issuefication) as a *specific aspect of life in Freetown*. The overall and general problematization of Freetown was not something I projected onto the field or the city. Problematization combined with a sense of urgency and necessity was a prevalent mode of referring to the city. Thus, a focus on problematization suggests itself as a productive approach regarding water issues in Freetown.

Part of the reason for my methodological shift to problematization was a strong presence of humanitarian initiatives in the city. Ever since the civil war (1991-2002), Sierra Leone and Freetown in particular had been the target of such endeavours. Several generations of humanitarian interventions had left traces. These were present both in everyday language as well as in material form, especially in slum communities such as Susan's Bay. In the course of my fieldwork, I came across different remains and ruins of initiatives that had been launched by NGOs like Médecins Sans Frontières (MSF) or Cap Anamur, state institutions, or transnational bodies such as the World Food Programme. Water tanks, building structures, slogans that had been written on walls to raise awareness and which now faded away, giving way to new ones. Both in the early 2000s (Jackson 2004) as well as during the time of my arrival, white four-by-four Toyotas displaying the logo of organizations from the realm of humanitarian action or development cooperation were but an ordinary part of Freetown's urban landscape.

I approach the kind of overarching, omnipresent issuefication as a specific epistemological mode of perceiving and representing the city of Freetown. I suggest that, when engaging with water problems in Freetown, it is crucial to take into account the very acts of problematization. For, these offer valuable insights into everyday life in this city. Problematization can be seen as a site of negotiation. The concrete acts of defining an issue make explicit the perspective of the speaking person. That is, it renders explicit assumptions about the reality of the problematic matter. What is the case? What is the problem? Answers to these questions differ among individuals as well as organizations. The focus on problematization, thus, renders visible contradiction and friction. Furthermore, problematization as an object of study provides an insight into the ways, people relate different entities in and aspects of the

city to each other. During my fieldwork, I came across certain patterns of indexicality. My interlocutors would often refer to other places and actors when speaking about a respective water problem. By this, they indicated causal relations which were to explain the problem at hand. In the process, they made explicit their views on the distribution of responsibility and accountability in Freetown. In addition, my focus on the acts of problematization offers a valuable perspective on the practical responses of those who found themselves exposed to problematic water flows; in other words, their decision making.

1.2. Urban Space, Urban Life, Urban Water

How do we sense, describe, lament, think, romanticize, know … a city? The question is appropriate given the difficulty involved when speaking about defining urban life. That is, it is actually quite hard to tell what exactly is going on in a city and why things are the way they are. And so, Hansen and Verkaaik ask: "Why is urban life so difficult to capture? Why does 'the urban' itself often elude us?" (Hansen and Verkaaik 2009: 12). Pinpointing the city (in its different aspects) indeed seems to be a difficult task. Referring to Hansen and Verkaaik, Matthew Gandy even speaks of an "unknowable" entity (Gandy 2005: 42). Seen in this light, Maria Kaika's struggle to characterize the city as adequately as possible is quite telling: "Cities are dense networks of interwoven socio-spatial processes that are simultaneously human, material, natural, discursive, cultural, and organic. The myriad of transformations and metabolisms that support and maintain urban life, such as water, food, computers, or movies always combine environmental *and* social processes as infinitely interconnected." (Kaika 2005: 22 (author's emphasis)). What Kaika is after here is the composition of urban life; and urban life appears to be utterly complicated. The crux of the matter is to be found where Kaika speaks of processes "infinitely interconnected." Connections are, of course, what I am interested in here; both in the sense of infrastructural connections as well as "wild" ones; albeit the line between the two was often blurred, as I will show later on, especially when taking a look at the composition and condition of Freetown's water infrastructure as a system embedded in an aggressive urban environment. The presupposition for this is the nature of water itself.

Water is notoriously good at connecting things, often across different scales and logical spheres:

> "Flowing through the hydrological cycle, water links individual bodies to one another through the cycling of waters and water-borne effluents between water bodies and organisms – both human and non-human. As it flows, water transgresses geopolitical boundaries, defies jurisdictions, pits upstream against downstream users, and creates competition between economic sectors, both for its use and for its disposal (invoking intertwined issues of water quantity and quality). Water is thus intensely political in a conventional sense: implicated in contested relationships of power and authority." (Bakker 2012: 616).

Here, Bakker offers a powerful characterisation of water, not just in urban spheres. It shows why and how water is an important and highly intense research subject, namely by not merely reducing water to a somewhat simple "vital necessity" but by stressing its variable facets in different arrangements. As Bakker points out, water not only connects but, doing so, transgresses and calls into question boundaries by forming new bonds. This, in turn, may raise issues – for instance, issues concerning pollution or access to safe drinking water. Speaking generally, water may blur conditions and situations (by bonding wildly) but it may also highlight or embody relations which would otherwise remain socially implicit. See here, for example, Bakker's reference to the pitting of upstream users against downstream users which resonates well with the experiences of exposure and vulnerability of residents of Susan's Bay (who pointed upstream, i.e. up the water line in order to define the connection and resulting issue). What gave rise to this condition here was a particular spatial dynamic involving a steep terrain profile and catchment area characteristics (shaping or steering the flow of water). Since space will – sometimes subtly, sometimes more explicitly – play a part in all the chapters I point out styles of conceptualizing space that accompanied me in the work process.

How do we think urban space? In the messy-massive process making up urban life, water plays a crucial role. That is, water is not just necessary for life in general but plays a specifically constitutive role in the life of cities. Matthew Gandy even goes as far as to state that the "history of cities can be read as a history of water." (Gandy 2002: 22, see also Kaika 2005: 5). It hence makes sense to approach urban life and space through water. By producing connections across the city, water gives form to and even produces urban space. It shapes urban environments. While it endows form, it also blurs form. It hardens as well as softens. By engaging with the composition and constitution of the city in this way means that "space "in itself" can never serve as an epistemological starting position." (Schmid 2008: 28). Rather, it should be understood

as the result or an effect of, in the wider sense, social processes. The concept of space favoured in this text places emphasis on process and relation(ality) – watery or liquid space. Accordingly, it resonates well with what Schmid calls, in reference to Henri Lefebvre, a spatial "horizon of becoming" (ibid.: 34). As to describe the different waters of Freetown, it is useful to define space in the fashion of Martina Löw, namely as a relational arrangement of bodies which constantly move ore shift, in the course of which the very arrangement itself changes incessantly (Löw 2015: 131)[4]. Considering (urban) space through water flows – be it metaphorically or material-semiotically – offers a very concrete, vivid point of access. "Now, space becomes reinterpreted not as dead, inert thing or object but as organic and alive: space has a pulse, and it palpitates, flows, and collides with other spaces. Lefebvre's favorite metaphors hail from hydrodynamics (…)." (Merrifield 2006: 105). Water and space come together in a pleasant way here, though mainly in a figurative sense. My interest is connecting the two in a more literal manner, that is with a focus on how water "actively shapes new geographies." (Bear and Bull 2011: 2261); both in the sense of knowledge as well as material landscapes. Freetown's "hydro-social landscape" (Swyngedouw 2015: 21) was vibrant and saturated with problematization.

With the above-mentioned points on space, I have placed emphasis on becoming, openness and relationality. This emphasis offers a feasible way of thinking Freetown's waters as to how these unfolded spatially, and it works well with the views of many of my interlocutors, especially with regard to the city's water system. (Water) infrastructures may often seem as particularly hardened, i.e. stable and coherent structures: reservoirs, treatment works and tap that are connected by pipes of different sizes and materials and through which flows water that has been measured beforehand. However, these systems are the result of ongoing work and one great concern in their sustaining is not only the functionality of the system 'as such' but as it is embedded in an (urban) environment. The aim is then to the maintain the infrastructure as a system which – theoretically – remains unaffected by external influences. This point is especially important when dealing with water infrastructures since the substance which is being mobilized by the structure – water – is highly reactive and susceptible to contamination.

Freetown's water system was an object of constant negotiation, especially in regard to access. The system was altered on a daily basis – most of all by means of PVC pipes

[4] "(…) Raum als eine relationale (An)Ordnung von Körpern, welche unaufhörlich in Bewegung sind, wodurch sich die (An)Ordnung selbst ständig verändert."

that connected communities such as Susan's Bay to the water infrastructure. As if echoing space as a "horizon of becoming," Freetown's water infrastructure appeared open every day when I joined Guma's water workers going out looking for leakages, 'illegal' connections, and other things related to 'their' water system. This infrastructural arrangement was constitutive of urban life and space – in the sense of making urban life possible as well as invoking specific spatial forms and constraints. Yet, at the same time, it was affected and shaped by its environment, often in ways that were problematic. The spatial extent and tension of Freetown's water infrastructure furthermore revolved around concerns about altitude and distance in relation to the system, which had an impact on pressure and chlorine levels (and thus quality). In different ways Freetown's water infrastructure imposed its own spatial scale upon social life in the city, i.e. rendering the question of one's position in relation to the system a necessary and vital affair. In other words, the city's water infrastructure had a great influence on how residents of Freetown perceived urban space. The place(s) of water raised, in terms of their situatedness, impacted the city's spatial composition as well as raising concerns about residents' health. This affair regarding the place of water did of course not only apply to "domesticated" (Kaika 2005: 32) tap water but to other types of water as well.

During the wet season, conversations about rainwater and its place(s) were mainly about two things: quantity and movement. So, when there was plenty of water soaking the city, concerns were which routes storm water took and how much impact the flows generated at specific locations. As the vignette in the very beginning of this text hopes to indicate, this, in turn, had quite an impact on movement in the city more generally. Depending on where the storm waters would accumulate or rush through, people in cars, on bikes, or by foot had difficulties passing through. I have also already pointed out that flooding was particularly harmful due to substances other than water that were dragged along in the flows. This said, it was not all only about the rain finding its way through Freetown. When considering Löw's formulation of space as a "relational arrangement of bodies" (space also decisively not as a container but as being constituted by the bodies and the overall arrangement), it is interesting imagining these as water bodies. Rain- and tap water: these water bodies did get into contact with each other and their connection was a severe issue due to the risk of contamination. A lack of urban planning was often defined as one core cause of problems. Storm water and piped water often met in the gutters. The former was not channelled adequately (regarding the sheer mass of it) and the latter flowed, more

often than not, through PVC pipes running through the gutters, which were filled with sewage and other kinds of human excretions.

During the dry season, when no rain whatsoever came down, the city's relation to the nearby Guma Dam, the city's main source of drinkable water, intensified. As this text is about water connections, it is important to note however that the connections made of and by water were not necessarily material but of discursive nature as well. In the barrier lake of Freetown's adjacent Guma Dam, rainwater was converted into infrastructured water. Though, as the dry season progressed, the levels in the lake dropped and kept dropping. I witnessed this in the dry season of 2017 and 2018. Commentary on the water supply situation was formulated in anxious and irritated tones. Talk of water crisis increased. Yet, it should be noted that the rationing of tap water was nothing extraordinary. Quite the contrary. It was an utterly ordinary condition of life in this city, also during the rainy season. The fateful connection between urban Freetown and the barrier lake spanned large issues such as land grabbing and climate change. For, the matter usually entailed a contrast between the ravenous social/urban on the one hand and the natural/wild in need of protection on the other.

And the sea? In specific cases, marine water raised similar issues. Or, to put it the other way round, it touched upon the same contexts from a different angle. I have already mentioned banking practices. These were commonly problematized as dangerous for those engaging in it as well as harmful to the environment, including mangroves and marine sea life. Matters intensified in those places where banking took place in protected areas. The practice was declared illegal and prosecution hinged on the crossing of so-called demarcation lines. The acts of problematization concerning banking connected these concrete practices with abstractions such as nature, the right to the city and the notion of disaster-prone areas. For many, banked communities were the ultimate epitomization of urban sprawl, which resulted from a massive deficit in urban planning. Others, especially residents of those very communities, argued that banking was merely a (legitimate) response to the government's failure to provide sufficient affordable space for all. The seawater pushed away in the banking process made explicit the fickle and intricate negotiations concerning Freetown's boundaries as an urban space.

The kind of openness and becoming that I have stressed, and which is produced by water is a guiding line for the present work, methodologically speaking as well. It makes sense conceiving of water as a heuristic tool. I suggest that water "cracked

open" Freetown, especially when raising concerns and causing trouble. That is to say, it did not only cause openness, uncertainty and issues. Water also made explicit what tended to be socially implicit, in particular relations of inequality: Unequal access to safe drinking water, unequal exposure to dangerous flows of storm water, unequal access to housing. As such, water worked as a heuristic tool for everyone in the city. People made sense of life in Freetown by means of water. And, they problematized life in Freetown through water issues. Connections made of and by water were a productive 'ground' for articulating larger issues.

1.3. Oh, Wonderful Water

Water generates meaning, it causes collaborations, problems, conflicts, and brings together different kinds of beings – sometimes unexpectedly so. It creates bonds. In this sense water is a very social substance. As water is deemed to be such a powerful agent in the shaping of urban life and space, it does not come as a surprise that there is a decent amount of literature on this particular kind of matter. In most of the seminal works on water, there is a section theorizing the characteristics of water. They speak of the unique properties of water as the basis for their approaches, which aim to destabilise simplistic representations and provide more relational ones. Following the more recent works, these relational properties are to be seen as emergent properties than cannot be deduced from water as such (Linton 2010: 34). The properties of water are, in other words, the result of its social embedding.

But what exactly does this mean? It cannot mean that it is impossible to know water, that is to say to turn it into an object of knowledge. It is possible to define water's properties and it is obviously possible to predict water's behaviour, control its flows and so forth. If this was not possible large technological systems such as water infrastructures would not work at all. Yet, they do work and also in Freetown the system produced water despite adverse conditions. As Linton writes: "If anything, it is because they *have* achieved their objectives on such a grand scale that large dams have come under intense scrutiny." (ibid.: 52). As I have noted above with reference to Matthew Gandy, big cities are specifically dependant on infrastructural systems providing water, electricity and so forth. The possibility of establishing such systems which produce and control flows of water is important to stress because social scientists often deploy a strong wording when writing about water's unruliness, including this very text. That is, in current research emphasis is more often than not

placed on how water does things it is not supposed to do. How it undermines and hollows out. The point is that water infrastructures and other systems controlling large amounts of water are pitted against water's unruliness.

The emphasis on "emergent properties" underscores the fact that water (flows) may well exceed control and knowledge. Water as a substance that is natural and social at the same time connects things, people and places with each other. As it flows it carries along stuff. And, as it flows water may also dissolve matter or harden certain forms in its environment. Accordingly, things may quickly become complicated when dealing with water and its capacity to bond. Jessica Barnes and Samer Alatout formulate this viewpoint well:

> "From this perspective, water is not a singular object of epistemology for which abstract knowledge can be produced and circulated in all times and places without interruption. Its properties are not fixed. Rather, water reveals its complex, multilayered biophysical identities for particular enactments (…)." (Barnes and Alatout 2012: 484).

Erik Swyngedouw underscores water's stubbornness, conceiving of water as a hybrid (in the sense of transgressing ontological borders of nature and culture):

> "Cyborgs and hybrids are imperfect creatures and cannot be but so. The attempts to engineer, master, and control the hydro-social cycle, to keep "nature on a leash," are never complete, never fulfil fully their Promethean promise. The actants in hydro-social networks often act more than expected. They push beyond the bounds in which they are imagined to dwell, and behave in strange and often unpredicted, if not unpredictable, ways. There is always a remainder, a hard kernel that resists incorporation. They invariably produce excess or a surplus, over and beyond the acting that permitted the hydro-social imbroglios to stand. Dams fail, land gets flooded, water bodies are contaminated, rain fails to come, electricity lines break down, projects are contested or shelved, pipelines get clogged up or burst, and ecological relations become reconfigured and produce unexpected consequences." (Swyngedouw 2015: 29).

Swyngedouw beautifully pinpoints the trouble with water. This trouble does of course not only apply to professionals dealing with water, such as engineers, hydrologists, urban planners and so forth. Ordinary people – 'non-professionals' – need to adapt to water's unruliness as well. After heavy rains, residents of Susan's Bay and other precarious communities had to manage large masses of storm water in order to protect

their community from flooding. They were also forced to deal with tap water that was not a reliable source for consumption. They were very aware of the infrastructure's situatedness and condition. Swyngedouw's remark that attempts to domesticate water "never fulfil fully their Promethean promise" applies above all to infrastructural systems managing water flows. So, they do usually fulfil their "promise" or rather work according script but never completely and only under the condition of constant maintenance work. The quote hence marks what can go wrong with water in technoscientific arrangements.

It is in the light of *this* that scholars 'celebrate' water for being rebellious, ontologically promiscuous, or a terrific "theory machine" (Ballestero 2019: 415) which means that it is "good to think with" (Strang 2014: 133). It is also in the light of this that I set up my attempt to trace the different connections made by Freetown's waters. On a theoretical and aesthetic level, water serves as an object for the construction of theoretical edifices associated with thinking becoming, relationality, contingency, and transience (see also Finke and Weltzien 2017, Ingold 2017).

On the one hand, this kind of 'aestheticization' can quickly lead to romanticising water for the sake of theory which can easily turn into trivialization. This is important to keep in mind since matters concerning water are often rather brutal and unforgiving. Suffering cannot and must not end up in theoretical adulteration. On the other hand, deploying water as a theory machine offers an auspicious way to reconsider social phenomena. In other words, tracing the details of what water does and how people engage with it offers valuable entry points to engage with suffering, relations of inequality, discrimination. The starting point for these reflections may be rather ordinary kinds of water. Urban life is shaped by different kinds of water: in bottles, gutters, pipes, along shores and streets. These different waters harbour various sets of connections, be it production and supply chains or flow channels, negotiations regarding access and distribution. This was no different in Freetown, although it was hard to avoid narratives of disaster in the city. Water figured prominently in these narratives.

To give an example of how one might reconsider relations of inequality by means of water: the rationing or scarce distribution of water forced residents all over Freetown to structure their day according to the rhythms of water supply. Many people, namely those who could not afford having a water tab installed at their homes, had to spend considerable time to organize the water for their daily consumption. This represented a serious constraint in everyday life in particular (but not exclusively) for those

inhabiting the low-income parts of the city. Similarly, what Nikhil Anand describes with regard to water infrastructure in Mumbai as "water time" (Anand 2017: 122) may highlight social inequality, political neglect, and gender relations. Anand describes the following paradoxical condition which I also found in Freetown in a similar form: "The city's water mains run under the bridge. Some of these pipes have been cemented over by settlers, who live directly on top of them. Though they lived on top of high-pressure water mains, their access to water was regulated by a valve that released water to them between 5:30 and 8:30 in the morning." (ibid.: 103). Or, speaking about the water situation in Freetown, Susan Shepler (2010) has described how young men – she calls them "bearing boys" – have filled the gaps of water distribution, hence becoming somewhat part of an insufficient infrastructural system. While I did not notice many of these bearing boys with their conspicuous custom-made carts during the time of my fieldwork, Shepler's hint at the ways how water was distributed throughout the city, namely often by more-than-technical means was still valid and relevant.

Suggesting that water is good to think with, is also linked to it being a powerful means of telling stories. One might call it a metaphoric powerhouse. According to Ivan Illich water has a "nearly unlimited ability to convey metaphors." (in Linton 2010: 3). Among the most famous metaphoric forms are the tidal rhythm, raindrops, or the flow of rivers. Water offers forms to think change, repetition, or permanence. It makes sense of matters in more graspable ways. Though, might water be too good to think with? Too easily deployed as thinking device? Jamie Linton gives it an interesting twist: "Indeed, almost anything can be distilled into a watery metaphor. But then we can always (re)turn to water as a means of dissolving the very things we have made of it." (Linton 2010: 3). This fits a recent statement by Andrea Ballestero in which she reflects that it "seems that we are at a point of inflection where water is becoming more like a learning machine: undoing its own assumptions, yet doing so in always culturally and materially determined ways." (Ballestero 2019: 415).

These two assessments stress the deconstructive potential of and in water. Here it calls into question things. It may open up things. In a setting of intense and heterogeneous problematization – Freetown – this may serve as a valuable point of view. For, in this study I am interested in multiple perspectives on situations and conditions involving water and the way these contradicted each other. Reconsidering things through water is particularly fruitful when inviting heterogeneity. Fittingly, Ballestero states that "(…) unruly worlds create new knowledge landscapes." (ibid.: 413) and that "(h)ere we see incommensurable knowledges intersecting, revealing a geometry of crossing

points, rather than producing a mosaic of knowledges that coexist, forming a whole." (ibid.). In Freetown, I came across a variegated mosaic of stories and, more specifically, problematizations.

1.4. Telling a Story: Water in Freetown

Matthew Gandy has suggested that the history of cities can be read as a history of their water(s). For the purpose of this text, it seems legitimate to read this statement as an encouragement to include stories about water. There are plenty of stories one could tell about Freetown when approaching the city through water. Not just because there were different kinds of water. But also due to different kinds and phases of history, which can be narrated through water. There is much to be said about colonial exploitation or contemporary relations perpetuating disadvantage. There is also much to be said about stereotypes, including well-known narratives of suffering and misery in the Global South and more specifically Africa. Since the Freetown I came to know was a hotspot of problematization - not infrequently along the lines of such stereotypes -, the question of how "we" tend to think about cities offered itself as a key. That is, the making of what comes to be considered a problem that deserves attention, turned out to be a collective discursive process. This process involved the whole city, and it constituted a phenomenon of its own. The problematizations popping up in this process reflected the different perspectives of the actors involved. This said, I want to make clear with this introduction that the present study is not one of urban water in Africa. It is one about urban water in Freetown, Sierra Leone. While it is also neither historical nor comparative it nevertheless offers sufficient material for generalizations. In this sense, the focus is narrow and specific, but like mostly in anthropology it addresses general questions that concern contemporary postcolonial urbanity.

For most people traveling to Sierra Leone, water already shaped the way into Freetown. International flights went to Lungi airport on the other side of the Sierra Leone River, a massive estuary or 'natural harbour.' Most people would get to Freetown by boat. Accordingly, going to Freetown was a passage through and marked by water. Those who could afford to spend fifty US dollars – expats, diaspora visitors, businessmen and -women – would use one of the two speed boat companies. Passengers were transferred by bus to a small dock at the coast, waited for the boat to come, and then took a seat inside the cabin. The crossing itself took around twenty minutes. For a cheaper but longer passage there was a ferry going to Kissy, a district in Freetown's East. The ferry transported both people as well as cars and some types

of cargo. Going to Freetown overland was not a reasonable option as this meant spending several hours on the road. Some fifteen years before my arrival, it had also been common to get to the city by helicopter. In his book *In Sierra Leone*[5] Michael Jackson mentions the ride from Lungi to Freetown briefly:

> "It was still pitch dark and raining heavily when the dilapidated helicopter crossed the broad expanse of the Sierra Leone River, with me a nervous passenger, and followed the coast southward towards Lumley. When we landed, I breathed a sigh of relief, and clambered quickly out. The helicopter's spotlights illuminated the wet sea grass battered by the downdraft from the rotor blades." (Jackson 2004: 3).

There would be different ways to narrate Freetown from the seaside. For instance, one might point at a certain tension characterizing the history of the area. On the one hand, in the late eighteenth and early nineteenth century Freetown became the place where ex-slaves (were) settled by abolitionist and other initiatives. On the other hand, inside the estuary there is Bunce Island, known for its fortified outpost built in the 17th century by the British Royal Africa Company and from where thousands of slaves were deported to the Americas. Or, take another story: in the course of my fieldwork residents told me how the ECOMOG (ECOWAS Monitoring Group) had bombed some of the sea-facing communities from their ships as they had assumed RUF (Revolutionary United Front) fighters hiding in these. Jackson also mentions this coming-together of different historical horizons of violence and suffering that I came across:

> "(t)he tide was out, and as we approached the Aberdeen ferry bridge, I asked small S.B. to slow down so that I could look for S.B.'s old house on the edge of the inlet. Another casualty of the war, it stood in ruins near a grove of huge mango trees. Out on the mudflats, women and children were searching for shellfish, and I remembered an evening, long ago, sitting on the balcony and looking at this very scene, when Rose told me that it was from here that the slave ships set sail for the Americas with their human cargoes. At that moment, small S.B. broke into my thoughts, telling me that scores of rebel soldiers were brought to the bridge in January 1999, summarily shot, and their bodies thrown into the bay." (ibid.: 11).

[5] Note that Jackson's account of the civil war has been proven to be wrong in some parts (Richards 2004) – I am merely interested in his descriptions of sceneries.

The mentioned mudflats belonged to Aberdeen Creek, the lagoon in Freetown's West (Figure 1.1.). During low tide it was possible to walk across the Creek. Residents did not only look for shellfish but also extracted mud there as well as cutting mangroves.

Figure 1.1.: Aberdeen Creek during low tide (photo taken by Lorenz Gosch)

The frame I just opened up depicts (hi)stories of brutality and suffering. As I have already pointed out, these may perpetuate stereotypes about the region. At the same time, it is of course important to process and reflect upon these histories. As the above-presented theoretical takes on water suggest, water may offer a way of telling a story about experiences and conditions of suffering in a more concrete manner and in ways that challenge stereotypes. One could, for example, narrate the EVD (Ebola Virus Disease) epidemic that shattered Sierra Leone between 2014 and 2016 through water. As I conducted my fieldwork, traces of Ebola were still everywhere and memories of death, states of emergency, changes of behaviour and social life more generally very fresh. During the epidemic, water had been a core concern. It had been considered both a means of transmission as well as an essential part of a hygiene regime stopping the spread of the virus. Authorities had prohibited the consumption of rainwater harvested from roofs under the (non-evidenced) suspicion that bat faeces accumulating on these roofs might spread the Ebola virus. At the same time, conspiracy theories had assumed dead bodies in the Guma Dam as well as the gutters

contaminating the water. Some residents of Susan's Bay had hence rejected consuming, even using the tap water in general. Retrospectively, such details of the epidemic may serve as access points for reflections on how the epidemic impacted everyday life in Sierra Leone. They shed light on the concrete constraints imposed by the virus and the responses of authorities. They may also open up the frame for larger issues such as impoverished health care systems (lack of basic tools such as soap, gloves combined with a lack of safe water).

Another kind of story, told from the seaside, might begin with the inconspicuous trading relations between Freetown and Conakry, Guinea. Several times, I witnessed boats leaving from a tiny quay in Susan's Bay community. These boats carried so-called Milla tanks, big water containers for supplying a household with twenty thousand litres (Figure 1.2.). On the boats, each being maybe eight meters long, the containers were piled up surrealistically high. I learned that the men could fit up to sixty Milla tanks on a boat. Twenty thousand litre tanks, sixty of them! Long wooden sticks formed a grid and held them in place. The passage to Conakry took around twelve hours, as a young man working on one of the boats told me while hanging out in the local youth organization spot. They did not require a visa or any special form. The engine, he said, was a 30 horsepower. A crew consisted of eight men. A normal worker earned around two hundred thousand Leones (around twenty Euros) per trip. The voyage was not really dangerous the man in the youth organization lodge said. Except for the shallows, he added. They had to watch out for suspiciously coloured patches in the water. He was proud of his skills in reading the sea environment: winds, clouds, tides. The work was tough though.

Such small ethnographic teaser illustrates that a focus on water is quite capable of opening up interesting perspectives as well as assemble different stories within one frame. The frame opened up here might, for instance, pull into view locally specific perceptions of the environment, i.e. human-sea relations, or small-scale international trading relations. There are many water stories to be written about Freetown. Stories which might connect things, highlight or reveal connections in unexpected ways. The story to be told here concerns troublesome water connections.

Figure 1.2.: Handling of Milla tanks in Susan's Bay (photo taken by Lorenz Gosch)

1.5. Problematizing Freetown

In this text, I address an overarching problematization (or issuefication) that I noticed during my stays in Freetown. It was (and is) quite common to narrate Sierra Leone and Freetown more specifically as a post-colonial, post-war and post-epidemic context. And, after the fatal mudslide in August 2017 caused the death of more than one thousand people, there was a strong tendency to add to this sequence a 'post-disaster.' The common sense was clearly that Freetown was a problem-laden if not haunted or even doomed place. Sierra Leone ranked among the "least developed" or poorest countries in the world, and Freetown with its slum communities and urban sprawl seemed to embody all of the problems associated with such a 'position.' The range of issues to be tackled comprised poverty, corruption, disease (in particular those leading to high child mortality rates), lack of sanitation, access to safe drinking water, education, and so forth. All over Freetown, I witnessed a strong sense of urgency and necessity, and small-scale problems – concerning water for example – were often linked to larger issues concerning the city as a whole. I engage with these problems

through their problematizations. How, by whom and by what means were they being made into problems and into what kinds of problems?

Why should problematization or issuefication be of interest? Working on the case of public issues in South Africa, Eva Riedke offers the following explanation:

> "(t)he argument is that tracing issues and their publics to specific sites in which actors or groups of actors 'do the work' of the public, allows us to see more than what we readily come to recognise as the settings of 'the political'. Our attention is directed to the alternative sites, subjects and forms that define publics and their politics at a given moment in time." (Riedke 2016: 3).

I suggest that this formulation resonates well with what I have said about water, problematization, and the reconsideration of social phenomena such as discrimination. In Riedke's case, what is to be reconsidered is what we conceive of as the political. The present study is about problematizations of situations, conditions and connections made of, how these impacted everyday life in Freetown, and in what ways the acts of problematization indexed larger concerns in the city.

Core questions regarding this approach are (1) who defined a water problem and what terminology was used in order to define it; (2) how problematization in Freetown was connected to globally circulating forms of defining problems and solutions; (3) to what degree problematizations formulated by actors with different relations to the matter contradicted each other; (4) who was made responsible in the process; (5) how those affected the most by water problems articulated and responded to water problems; and (6) what kind of city was enacted by the water related problematizations? To be clear, the point is not to 'prove problematizations wrong.' Rather, the guiding idea is that problematization can tell us things about Freetown that would not be included in the picture, when focusing directly on the problems with water as if these were things to be found 'out there.'

In 2017, Freetown was buzzing with humanitarian actors and there seemed to be a kind of constancy in this. Jackson, who visited Sierra Leone shortly after the war, also recalls the omnipresence of the white four-by-fours (mainly Toyota):

> "Along Kissy Road I saw more of the destruction left by the rebels three years before – the fire-blackened laterite walls of public buildings and churches, concrete facades pockmarked from gunfire. An unbroken stream of people flowed and eddied around the stalled lines of poda podas (mini buses in public

> transport), overladen lorries, broken-down taxis, omolankeys (large carts for transporting goods), and white Land Cruisers. UNHCR. Save the Children Fund. Child Rescue Mission. Planned Parenthood. Save the Youth. Sight Savers International. I could not but wonder how many people were actually helped by this influx of NGOs and foreign aid (…)." (Jackson 2004: 9).

It seems likely that such long-lasting and ubiquitous presence does something to a place and the people who inhabit it. It shapes terminologies as well as the tying and interpretation of causal relations. The more conversations I had on water problems, the clearer it became, that some of the patterns involved in problematizations formulated by humanitarian initiatives had trickled down to the everyday language of ordinary people, non-professionals. The Ebola epidemic, in particular, was said to have left traces around the city; materially but also in terms of frames of problematization (regarding water usage and best hygiene practice).

Susan's Bay and Thompson Bay, the two communities I conducted fieldwork in, had been a site of humanitarian intervention for more than a decade, when I arrived in the city. For example, NGOs and other actors would organize sensitization workshops on a regular basis. Interventions also depended on whether there was an acute cause of concern, such as the massive fire tearing through Susan's Bay community in April 2017. In urgent situations, organizations stepped in with relief packages which, in turn, opened up discussions on who was a 'real' victim and who was not. NGOs in particular seemed to have developed a very idiosyncratic role in the city. Not only did they establish influential styles of framing the city but they had also become a distinct business sphere. Their role also raised the question whether the state was incapable of assisting those in need. NGOs appeared to fill this gap, which potentially perpetuated relations of dependency.

One typical form that problematization took was a common type of visual expression or communication. This involved posters, logos and slogans written on walls. I found posters designed by actors such as UNICEF or the WASH consortium especially telling. Many of these did not so much rely on conveying their message through words but used illustrations. The visualizations created seemingly clear *connections* between specified practices and the conditions surrounding them. However, causal relations were not necessarily addressed. The poster below (Figure 1.3.) shows a range of activities which are related to the washing of hands. The arrows clarify the temporal order of these, in the sense of best hygiene practice. I found this illustration noteworthy because it makes explicit one type of water connection, namely water assembling and

linking up bodies, practices, and objects. While the water used to wash hands related these different things to each other, it was meant to prevent the spread of pathogens. Water figured not only as a medium of contagion but also as one means to keep bodies clean and healthy. The concern of the poster was, of course, to raise awareness of risky links and threats of contamination. It only offered instructions on what to do when. It did not offer an exemplification of causal links, as in: what or where was the problem. Even though such illustrations often appeared in compilations – presenting different aspects of an issue – usually these did not ponder the roots of the visually defined problem.

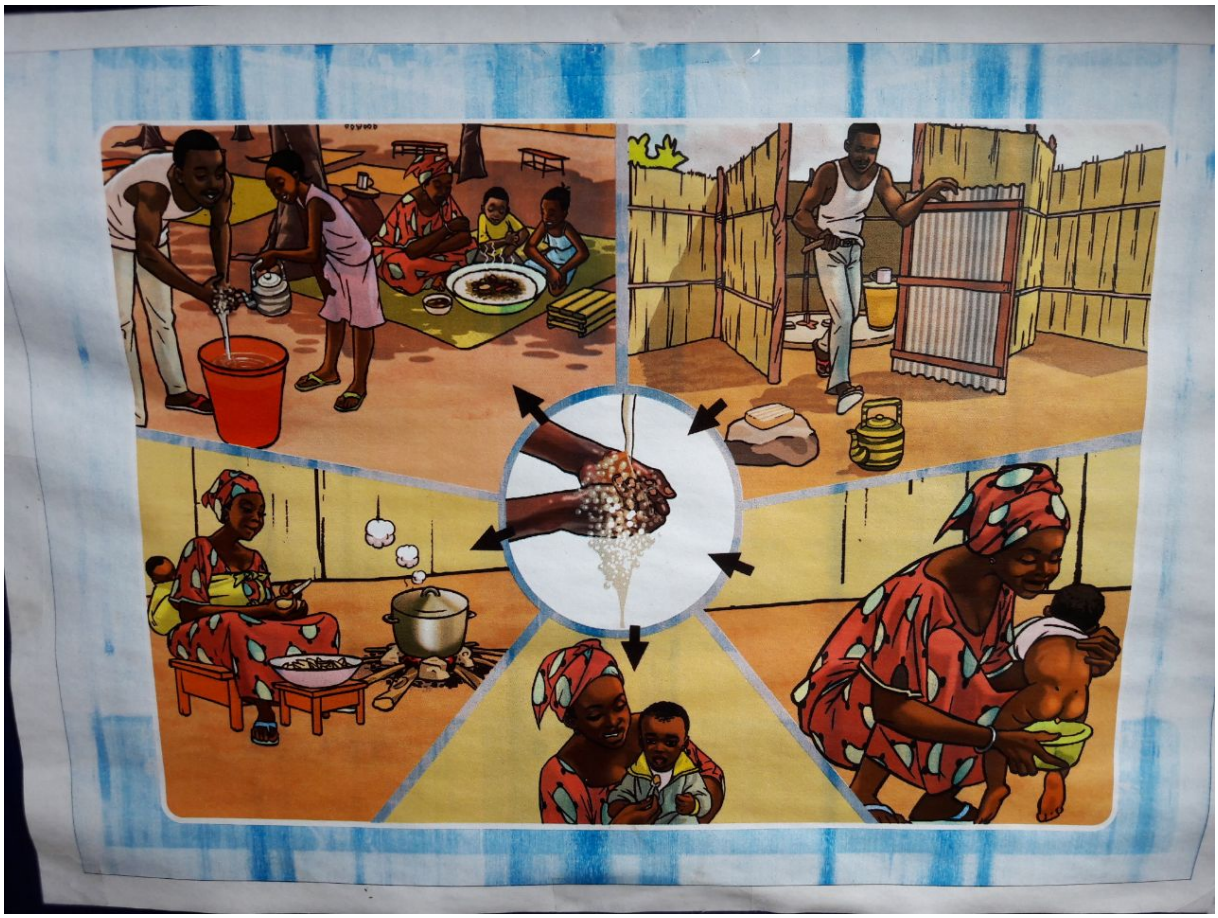

Figure 1.3.: A poster illustrating "best hygiene practice" (photo taken by Lorenz Gosch)

The combination of water and problematization is both productive and tricky. For, as noted earlier, water tends to do and be more than what we make of it. It is important to pay attention, not only, to what water does that leads people to define the given condition or situation as a problem. What is also to be taken into account, is that water may undermine these problematizations, rendering them incomplete or simplistic. In

many cases, definitions of problems do not (and cannot) cover the complexity involved. This is part of the reason for why problematizations may contradict each other. At the same time, in order to being able to act, problematization is necessary and often urgent. The tension resulting from this is quite relevant as it opens up space for contradiction and negotiation. It may also call into question clear-cut problematizations of authoritative actors.

1.6. Summary and Chapter Overview

The core notions of this study are that of problematization and water connections. As I use the two, they are inextricably intertwined: water flowed through Freetown, generated connections of different kinds across the city, and, in doing so, it raised concerns and provoked problematization. The connections emerging in the process were not always of (direct) material nature. Sometimes they consisted of causal relations which were articulated in the acts of problematization. They were also of discursive nature. In any way, they shaped the way people imagined the city of Freetown; its past, present, and future. Water is good to think with. Erik Swyngedouw states that water "is indeed not just H_2O; its meanings and practices meander like rivers, making unexpected turns and gathering or assembling all manner of connections and relations, transforming the social and physical landscapes as it passes from source to sea." (Swyngedouw 2015: 20). He conjures up the "hydro-social landscape" (ibid.: 21). Water problems, in particular, offer a powerful lens for interpretation. Problematizing water connections and related problems, I suggest, represented an effective and common way of thinking Freetown.

My main focus is on tap water. This type of water was involved in various kinds of issues in Freetown. As such it opened frames to address the urban as a hybrid assemblage of natural, technological, economic, legal and sociopolitical elements, but also to address the boundaries of infrastructural systems, and the distribution of vulnerability. Rainwater and the sea, which will claim their place further below, raised their 'own' kinds of issues. Focusing on water flows in cities is a promising approach, since these play a key role in composing urban space and life. Much of how I think urban space is based on the idea that water is a powerful actor in the shaping of environments, and that it does not always behave in predictable ways. In fact, water often does things unplanned and unnoticed by human eyes. It leaks or erodes. It causes problems. For this reason, the present work is influenced by takes on space that

underscore openness and becoming. Water shaped Freetown in various ways, some of them quite specific.

The problems to be addressed in the course of this text were articulated in different ways, depending on who I was talking to. As I tried to show in this introduction, problematization itself was a common mode of referring to life in Freetown. It was often combined with a sense of urgency and necessity. For this reason, I argue that it makes sense taking the question of how we think cities particularly serious in relation to Freetown. Examining peoples' problematizations in terms of what came to be considered as being a problem, is a productive way of getting an understanding of what came to be known as Freetown.

As the table of content shows, the chapters to come are arranged in a way that they follow the flow of Freetown's tap water – from the barrier lake in the forested hills, down into the city, and toward the sea. Each chapter revolves roughly around one larger water problem(atization) and the specific water bonds involved in it. I am interested in how larger concerns were indexed in acts of problematizations which referred to concrete situations or conditions produced by urban water. While engaging with this, I draw on different theoretical approaches and debates in order to develop a productive perspective on the respective matter.

Methodologically speaking, the table of content also indicates the loci of my fieldwork. On the one hand, I have conducted research in two sea-level slum communities, Susan's Bay (close to the city centre) and Thompson Bay (located at the border to Aberdeen Creek in Freetown's West). Both communities were built partly on seawater. This was the result of banking activities. The fact that they were located at the border to the sea also meant that they were, more than other communities, exposed to the intense flows of dirty storm water. Residents of these communities also faced challenges regarding supply with safe drinking water. Their relationship with the city's water system and the company in charge of it was ambivalent and precarious. On the other hand, I spent considerable time with the water workers of the Guma Valley Water Company – in charge of Freetown's water infrastructure –, especially in the West of the city. I went out with them into the field and witnessed different ways of engaging with a water system, that was exposed to an aggressive urban environment, including residents appropriating the water lines. In the course of my cooperation with Guma I visited most of the company's facilities, including the water treatment works as well as the two dams, the Guma Dam (main water supply) and the smaller Congo Dam (less relevant in terms of water quantities but relevant in regard

to imagining the city). In both settings, I conducted extensive semi-structured interviews with individual people which provided a detailed commentary to the more casual and spontaneous conversations I had while spending time there.

The subsequent chapter *two*, considers the bond between the city, the forest, and Freetown's main source of drinking water. To be precise, it takes a look at the infrastructured relationship between water and the forest. The forest surrounding the Guma Dam was conceptualized as a vital part of the water system. Deforestation in the context of land grabbing and urbanization was a large topic in the city. On the one hand, the matter was about increasing risks of mudslide due to erosion. On the other hand, without the forest, preservationist voices pointed out, both quality and quantity of the tap water would be impaired. In order to get a hold of the matter analytically, I will reflect on the idea of nature as infrastructure. I will draw on and extend Ashley Carse's notion of nature as infrastructure as well as Anna Tsing's points on definitions of forest. Furthermore, I dive briefly into debates on narratives concerning forest development in Sierra Leone in general.

Following this discussion of Freetown's adjacent woods, I will go down the line and consider Guma's treatment works: In chapter *three* I reflect on dysfunction. In the same way as I do not conceive of problems as given conditions or entities, I do not refer to dysfunction as a given condition. Rather, I engage with the notion as a figure of problematization which contextualizes brokenness – concrete instances of things breaking down, not working properly or moments in which coordination of work processes went wrong. I will present ethnographic material from two moments of my fieldwork, which raised the issue of dysfunction. On the one hand, I will discuss my stays at the treatment works and problematizations of the state of the facility. On the other hand, I will consider repair work on the main transmission line, that I witnessed about a month after my arrival in Freetown. My discussion of dysfunction (and disorganization) will furthermore feature reflections on styles of representation, which avoid stereotypical depictions of 'African infrastructures' as being almost necessarily deficient. After having discussed three strategies, so to speak, I will delineate my pragmatist way of dealing with this issue concerning stereotypes.

Chapter *four* is about the precarious life of pipes in Freetown. Coming down from the treatment works and leaving the main transmission lines, the water had now reached the city and its specific environments. This chapter deals most explicitly with conceptualizations and scholarly discussions of infrastructure. In particular, I am interested in the boundaries of Freetown's water system and the ways, water

challenged these very boundaries. I will review the most relevant and recent literature and take a close look at the practical making and unmaking of Freetown's water system. The chapter will feature ethnographic material from the time I spent in the field with Guma's water workers. The aim is to elaborate on the variety and nuances of influences on the life of pipes in Freetown, exposure being the guiding notion.

Having addressed the life of pipes, I will turn toward residents' interpretation of two different flows of water in chapter *five*. This part is about exposure to water flows, both in terms of uncertainty as well as brutal force. I will present substantial abstracts from my interviews with Timothy Conte, my main interlocutor in Susan's Bay. Timothy's accounts offered rich perspectives on the two water flows I engage with here. The focus is, firstly, on the tab water and the ways it was problematized by the residents. Secondly, it is on the regular experiences of flooding in the community with the first heavy rains of the season.

The final thematic chapter *six* engages with the practice of banking and the notion of disaster-prone areas. Freetown's communities which were located at the very border to the sea often expanded into the water. By accumulating different kinds of material, the water was pushed or kept out which results in the production of new land to be built on. Banking practices, however, were often labelled as being dangerous by authorities and other actors. I will discuss a case in which a problematization of banking involved the notion of disaster-prone areas. Banking, as a practice as well as a condition, were also defined as a problem by referring to environmental damage as well as illegal land grabbing. The chapter considers then the connection between marine water and spatial appropriation.

2. Freetown's Forest-Water Bond

This story begins in the steep forested hills that Freetown had grown into over the past decades. During the rainy season rain water flowed down from these hills, through the city, and into the sea. Often it did so with considerable force. This was due to the area's vertical terrain profile combined with urban concrete landscapes. However, it was not only 'wild' storm water coming down the hills. The city's tap water, too, had its origins 'up there,' in the forests. The water that accumulated in the Guma Dam and which was turned into piped, i.e. infrastructured water was the product of precipitation in that area which was covered with dense tropical forest. The dam was by far Freetown's main reservoir. It dated back to 1965 (officially completed two years later) and had an original filling capacity of 4.8 billion gallons of water – in the late 1990s this had been increased to 5.2 billion gallons. At the time of my fieldwork, it supplied Freetown with around 18 million gallons of clean water per day, throughout the year. The barrier lake itself filled up during the rainy season. In the course of a particularly long dry season, water levels dropped considerably, leading to the declaration of a water crisis – though, some said in reference to unreliable rationing and distribution of water that Freetown was actually experiencing a permanent crisis.

Freetown had a complicated relationship to the woods. While the interior of the peninsula, including the area around the Guma Dam, was densely forested, little forest remained toward the city boundaries. Most had been cut down and now bush grass dominated these areas, being burned away occasionally. Freetown was a growing city and many in the city were worried that 'it' would push further and further into the hills, devastating the environment in the process. This was the concern: critical voices pointed out that there was a fateful link between the city and the forest; and that link was clean water. According to these problematizations, as Freetown devoured its forests, it liquidated its water supply right with them. But then, there was no way of (urban) life without sufficient water. In the light of this connection, the forest embodied Freetown's future, the city's possible doom. The aim of this chapter is to break down that link between the city, the forest, and water. The key question is hence how such a connection worked in the specific case such as this city.

Figure 2.1.: The Guma Dam and two of its intakes during dry season (photo taken by Lorenz Gosch)

In this chapter, I am interested in how forest, water, and the city were connected and placed within a single frame, especially so in acts of problematization. The focus is on the specific forest-water bond[6] that I came across during my fieldwork. I will examine its composition, its 'mechanics' so to speak, and how it figured in different accounts of the city's issues and future. On a regular basis, I witnessed the forest being used as an effective reference point to problematize urban growth in economic or ecological terms. In addition, the forest was frequently conceptually embedded in the city's water infrastructure. It was rendered a vital condition for clean and abundant water. This is what gave the forest-water bond a specific twist and political charge. Though, how exactly may a forest be functionally integrated into a water infrastructure? What are the conditions necessary for such conceptualization? These are questions that one might ask more generally since forest-water bonds may be found in many places. In fact, there was and still is a decisively global discourse on the importance of forests for water supply. I will address this further below when speaking about the World Water Day 2018 and its theme "nature for water."

Taking note of the connection between forest, water and the city is helpful for understanding a powerful variant of how people in Freetown problematized their city as to its spatial shape. The forest figured as a kind of logical linchpin. Referring to forest enabled residents to make critical remarks about Freetown's urban sprawl. A major concern was the lack of urban planning and the ignorance of those taking advantage of this. Especially after the August 14 mudslide (in 2017) this was an intense topic in the public. The link between deforestation and increased erosion risks became a large public issue in a city that had already grown far into steep hills. People should not build into the hills for safety reasons, one could hear. Concerns regarding the city's reliable supply with water added another layer to these problematizations. The instances in which the forest-water bond was deployed to express critique also entailed a reflection on the origins and conditions of tap water, hence rendering the production process of water explicit.

At the core of this matter was the boundary between the city and the forest. In my conversations, the sustaining of this boundary was often depicted as a fundamental condition. The (urban) social and the (forested) natural had to be kept separate. Taking a closer look at Freetown's forest-water bond was interesting, as it showed how onto-ecological categories were politically negotiated. Those demanding the forests in the

[6] As an analogy to hydrogen bonds.

hills to be protected did so on basis of somewhat strong and 'clean' categories. These categories were not supposed to be blurred and mixed. It became obvious that the forest referred to was always more than a type and space of a certain vegetation. Speaking of 'it' most regularly entailed questions concerning the right to the forest as well as to the city. If the woods were deemed a natural reserve, who was allowed to enter and engage with it? And, if the forested hills were to be protected from urban encroachment, where were people to move to? At the same time, the forest-water bond emphasized the question concerning the right to water. Tap water was already a pressing concern. What if supply became even less reliable in the course of further deforestation?

How may forest and water be linked up, conceptually speaking? One core concept fusing water and forest into a 'bond' is that of the catchment area, often also referred to as drainage basin. The term is a concept from hydrology and theorizes the regulative relationship between different types of environments and flows of rain water. It is commonly emphasized that forests rank among the most hydrologically-intensive and appreciated types of catchment areas. The concept is also highly relevant in regard to water infrastructure. That is, drainage dynamics can be used to supply water reservoirs. Forests are appreciated for their specific regulative effects, especially regarding storage and/or buffering, as well as positive influence on water quality. This applied to Freetown's water system, too. Here, the forest surrounding the barrier lake was crucial as to accumulating sufficient quantities of rain water. Large-scale deforestation would mess up the drainage patterns on which the system depended.

In terms of its emergent properties, what role did water play in this connection? Water as an object is not always and not everywhere the same (Anand 2017: 161). It is not particularly good at being a docile object. Classification is nevertheless necessary. There can be, for example, accentuations regarding "good" as well as "bad" water (Kaika 2005: 54). 'Bad water' is characterized as a disease carrier, an emitter of uncertainty, a producer of risk and danger through erosion. Regarding water infrastructure, though, the ideal is that of a known and contamination-free water. Thus, 'good water' is associated with both health and systemic well-functioning. Forest may play an important role in the production and maintenance of 'good' water.

As for the prospect of the following content, the present chapter will perform a circular movement. I will approach the forest-water bond by moving from my empirical encounter to different levels of abstraction and back toward the concrete case of Freetown. In the following section, I describe the way I came into contact with the

linking of Freetown's tap water to its forested hills. This took place, in particular, through my work with the Guma Valley Water Company, the city's parastatal water supplier. I will consider how the connection was presented to me in the first place. It was also while working with Guma that I came across the theme of World Water Day 2018. In a post on Facebook, the water company had pointed at the importance of forest and other types of vegetation for clean and sufficient water, in explicit reference to the UN observance day.

In the second section, I will take a look at how the forest-water bond is spelled out in the materials provided on the website of the World Water Day. The water envisioned here is a decisively global matter (Linton 2010: 163) and the concept of vegetation-water bonds appears as a kind of travelling model (Behrends, Park and Rottenburg 2014, Rottenburg 2009) to be put to practice in local contexts. Taking it from there, I will combine the abstract forest-water bond with an article written by Ashley Carse. In his *Nature as Infrastructure* (Carse 2012), he suggests to engage ethnographically with conditions and situations in which natural environments are integrated into infrastructural systems. The ethnographic case he refers to is the forest-water bond produced to supply the lock system of the Panama Canal. Quite convincingly, he portrays the process in the course of which the concept of the catchment area was deployed in a way that it would organize the directing of masses of water toward the canal. However, contrasting Carse's example with the case of Freetown, I will show that it makes sense drawing on additional perspectives. I propose that it is worthwhile reflecting on the notions of forest and, more generally, nature, as to understand how these onto-ecological categories figure as channels through which political negotiations concerning responsibility, duty, and access are negotiated. Defining an area as protected natural reserve, for instance, may have drastic consequences for those who live in that very area or are accustomed to entering it for hunting or other activities. In order to accomplish the reflexive maneuver, I will draw on the work of Anna L. Tsing (2005, 2015) who offers valuable thoughts on the deploying of powerful categories such as the natural. Thinking back to the issue concerning boundaries, Tsing's work has also proven productive in considering demarcation lines which are supposed to separate the natural from the urban social.

Considering the question what a forest is, I will steer the chapter back toward Sierra Leone. I will make a reference to the debate concerning deforestation narratives concerning the country. In the course of this debate, James Fairhead and Melissa Leach (1998) have argued that accounts about the history of Sierra Leone's forest landscapes

are shaped by unfunded assumptions. They also suggest that an effect of the powerful narratives about deforestation conducted by rural populations is stigmatization and the attribution of labels such as ignorance regarding the environment. This often led to blame games in the course of which certain parts of the Sierra Leonean society were depicted as irrational and irresponsible. From here I will, to complete the circular movement, return to Freetown's forest-water bond: here, too, I observed the casting of blame on vaguely specified actors. This final part will be about considering ethnographic and other material in the light of these perspectives.

2.1. The Production of a Problem

I was sitting in the car with some of the Guma staff from Station West. The highway carried us south along the shore, out of urbanized landscapes. I thought, it was like with other big cities: you were never really sure when exactly you had left 'it.' Freetown defied its original positioning, namely as being squeezed in-between sea and steep forested hills at the very peak of a peninsula. Most visibly, it was during the war (1991-2002) that, oscillating with refugees from other parts of the country, it had emerged out of its spatial immobilization. It still did emerge. It grew to its narrow sides, up into the hills, and in some parts into the sea. Freetown's spatially dynamic being posed a challenge to those addressing it in relation to political, ecological, economic, or epidemiological problems, often stressing the urgency of matters. Freetown's urban life continuously called into question the different boundaries projected onto it. I was about to stumble across one of such instances.

In the back of the car, I was about to doze off, being merely exposed to the still-urban heat and a harsh airstream coming through the window. In a knocked-out kind of way, I leaned against the seat-door niche and let my gaze rest on the unchanging landscape left of the highway: a composition of bleak hillsides, some recent, possible ruins and shanties here and there. Just two months earlier, the August 14 mudslide had killed a thousand people. The slopes and the state they were in, regarding vegetation and erosion, were a matter of an ongoing heated debate. "This is where the demarcation line was." Gabriel Foday – chief engineer at Guma's station West and one of my key interlocutors –, speaking from the front of the car, pointed to our left somewhere up the hill. Re-energized, I looked attentively. But there was nothing to be seen really. The hillsides looked just like the others we had passed before. No trees whatsoever and, more importantly, no visible demarcation. Merely the same inchoate buildings and

low vegetation as before. Slightly disappointed, I leaned back again, my eyes being put to rest on the smaller of the two main transmission lines carrying water along the highway and into the city. We were heading more or less to where the water in this line was coming from, Mile 13. The demarcation line brought up by Foday was supposed to designate the line between land which could be settled on and protected forest. However, evidently as well as impressively, the "green belt" had been pushed further and further, especially along the coastline. The demarcation line had become obsolete. Driving down the highway, it took some more kilometres for the tree line to pop up. The encroachment of the hills had come quite far. The issue to be analysed here and which represented an important matter of dispute in Freetown is the disappearance, blurring or displacement of that line. Why was this line of such importance? How was water involved in what I will refer to as boundary work?

I found that demarcation lines were a matter of concern and conflict more generally regarding Freetown's margins. This involved not only the forested hills. Slum dwellers building 'into' the sea by means of banking practices provoked acts of problematization on a daily basis. One concept to frame such practices as a problem was the notion of 'disaster prone areas' which I will speak about in chapter six. The condition of boundaries was a theme that I came across with high regularity, in offices of the respective authorities, within communities and as a public concern in the news. There was a kind of constant boundary work going on. I borrow this time-honoured term[7] in an analogous fashion, to emphasize the power-laden politics and social friction that took place in everyday negotiations concerning the separation and sustaining of the locally or globally defined natural environment. In Freetown, I witnessed how some actors drew boundary lines and attempted to preserve them. Others called these into question or bluntly ignored and went across them. Regarding the pushing of such boundaries, there was rarely any systemacity involved because there were so many actors participating in 'the act,' driven by different motives. This applied, above all, to practices of environmental appropriation, be it the building of structures on uncertain (legal) grounds or resource extraction. Critical remarks referring to the unwanted pushing or crossing of the demarcation line which protected the forest were meanwhile based on simplifications to strengthen their position. The diffuse and heterogeneous had to give way to homogeneous actors or at least acts.

[7] For the original conception of the term see Gieryn 1983.

Figure 2.2.: The city and the forest – the site of the August 14 mudslide (photo taken by Lorenz Gosch)

Here is part of an interview with Bala Amarasekaran. Amarasekaran is one of the founders of Tacugama Chimpanzee Sanctuary, one of the few tourist attractions in the country. I observed that Amarasekaran acted as a public figure and authority regarding all kinds of environmental matters. His opinion popped up in interviews and articles on a regular basis, when addressing Freetown in ecological or environmental terms. The interview from which I took the following passage is part of a documentary concerning the environmental destruction and hazards threatening Freetown. It introduces the matter of this chapter in a telling way.

> If you are going to allow people to build all the way up to the forest boundary and you don't monitor those forests because the forestry is very weak on the ground, they are very thin in terms of personnel on the ground, so they won't be able to monitor, so that is going to be a huge problem. (…) It is also a catchment area. I mean, there is no point in opening all those areas, all the way up to Regent, opening it for development … what are they going to do for water? I mean, if this forest is gone, that's the end of it. I mean, there is no,

> absolutely no water. There is no way Guma Valley Water Company can pump water from Mile 13 to Leicester Peak.[8]

This statement is remarkable because it spells out in drastic words the connection between Freetown's adjacent forests and the city's water supply. Here, the forest does not merely figure as an indicator but, rather, it becomes a means for the articulation of a perilous future. The survival of the city Freetown is tied to the well-being of the forest as a kind of linchpin. Forest then becomes a future device. In this light, the forest-water bond appears as a highly fateful connection. Note, however, that this kind of problematization resembles stereotypical narratives which have been observed by other scholars. According to Nikhil Anand, for example, such "teleological and often apocalyptic accounts of growth in cities of the Global South" (Anand 2017: 31) is a common theme. It is important to keep this in mind when engaging with such drastic diagnoses. They may, however, also be very informative. Amarasekaran's statement, for example, points at one particular aspect of the overarching problem. That is, he explicitly laments the inability of responsible authorities to maintain the demarcation line in question. Among those authorities, and mentioned explicitly by Amarasekaran, was the Guma Valley Water Company.

This said, many staff members at Guma were aware of and quite critical about the state of the forest and the company's inability to monitor and protect its boundaries. Of course, this kind of self-critical 'confession' is not usually part of the official account of an institution such as Guma. However, taking a look at official accounts or descriptions of water systems and their environments can be helpful. On the one hand, such accounts are powerful definitions of what is the case. In this sense, their descriptions have considerable impact on the way problems are articulated, contextualized and engaged with. On the other hand, they may make explicit connections such as the forest-water bond. This is particularly interesting when being interested in the conceptual makeup of a (water) connection, as in my case.

During my fieldwork, I had conversations with some of those at Guma who were involved in the company's official description of matters. As my interlocutors wanted to introduce me to the system appropriately, the form of their description was that of an outline. I experienced these introductory interviews as a kind of an institutional

[8] Documentary "LOST FREETOWN" (2009), directed by Nazia Parvez; Produced by Nazia Parvez and Paul Glynn; Bright Star Media Production: https://www.youtube.com/watch?v=dvTmqnVpSng (20.11.2019).

protocol. Here, I am going to present one which appears particularly interesting retrospectively. I conceive of it as an authoritative account which played a powerful role in outlining the role of water in the city. Guma was a key actor in defining problems regarding tap water, where issues were to be located, and who was to blame. After all, it was the Guma Valley Water Company which was in charge of the water infrastructure as a whole. Apart from running the dam site and the technical sequence guiding the water towards the city, this included – to a certain degree – the monitoring and management of the line demarcating the protected forest. Due to this 'first-hand' position, Guma figured as a key authority in framing issues such as those regarding the shaky boundary. Through its field workers, Guma could produce evidence in a way only few other institutions could do. Especially the area around the Guma Dam appeared remote and obscure to those in urban Freetown. Accordingly, the company contributed massively to the shape of the discourse on water. Apart from the Ministry of Agriculture and Forestry, other authorities involved in the formulation of Freetown's ecological condition were the Environment Protection Agency (EPA) as well as the National Protected Area Authority (NPAA).

The protoctol that follows captures one of my first contacts with Freetown's catchment area in its ecological and infrastructural role. Even though tenderly, the outlines of the forest-water bond were drawn in the statement, as I jotted it down. In this sense, the snippet presents a neat starting point to engage with the notion of (natural) forest as infrastructure. My first official encounter with Guma (I came to hear about Guma very soon after arriving in the city, usually in the form of narratives about Guma's alleged incompetence based on rationing and scarcity or the company's profound entanglement with corruption) brought me in contact with public relations officer Joseph Musa and Raymond Awoonor-Williams, the company's Deputy General Manager. Here is a translation[9] of my excerpt of the given outline:

(25.09.2017)

Having thrown a short glance at my paperwork, 'ok.' Tomorrow he is going to introduce me to one of the engineers who is supposed to answer the more technical questions of mine. Concerning Guma: the company was founded in 1961, in the same month in which Sierra Leone became independent. From that moment on the company was responsible for the city's water supply and this in regard to the whole population of the city, not just concerning supply to the official, colonial buildings. The mandate was to "supply water to the people of Freetown." That

[9] I wrote most of my fieldwork notes in German.

was also the moment the government picked the location of the Guma Dam to be constructed. It was a natural lake which got its water from six smaller streams, from the hills. The forest played an important role because it acted as a natural reservoir which fed into the barrier lake. The barrier lake itself provided Freetown with about 75 percent (in another interview I learned that it was, actually, about 95 percent) of its freshwater. There was, meanwhile, a whole number of other, smaller reservoirs and sources (Charlotte Source nearby Allentown, Blue Water by Wellington) which had been established due to the increasing population. These worked on basis of weirs and a connection to the hills and precipitation or natural streams. There is also the White-Water treatment plant, with Indian support, which was located close to Fourah Bay College. In general, all of these smaller facilities form but a complement of the Guma Dam which is not capable of supplying sufficient water anymore – and even with those it is not enough. There are additional facilities close to Sugar Loaf and Tacugama (Congo Dam).

What comes here as a sub clause is the basic form of the forest-water bond, in which I am interested here. The water which accumulated in the dam stemmed from streams that emerged from rainfall in the surrounding woods. In the conversation, the forest was conceptualized as a "natural reservoir." That way, the difference between forest and barrier lake (the actual, artificially built reservoir) was blurred and the two merged into a single infrastructural entity. Furthermore, what was pointed out was a more general concern about supplying Freetown with sufficient water. Apart from the Guma Dam, several smaller reservoirs had been added to the system, yet supply remained a concern. For this reason, plans were being made for an additional large dam tapping the water of Rokel River during the times of my fieldwork. Though, whether this dam would become reality in the nearer future was far from clear.

Concerning the forest's protection and its connection to the waters of the Guma Dam on basis of hydrological concepts, I had an interesting conversation with "Pastor" Moses, an engineer working at the treatment works close to the Guma Dam. His job at the time consisted mainly of supervising the sampling routines to check on the water quality. After having given me an overview of the water treatment process, I asked him about the forest. "What about it?" He found it evident and banal that it was to play a key part in sustaining the Guma Dam. Moses pointed out that the forest was important to keep the barrier lake from drying out. In the end, it was the forest which produced the streams filling up the dam site. This was also the reason for why the forest was under protection "ever since," as Moses put it. Asked about the state of the forest and the demarcation line, Mohammed Koroma, production manager at Guma, formulated the matter quite more critically. He saw the forest's integrity being

threatened by spatial appropriation. Koroma even went so far as to state that "(i)n a country where law does not prevail, it is difficult to manage." Doing so, Koroma hence shifted the subject toward responsibility, stressing lawlessness, poor planning, and more general disorder. Before addressing the allocation of responsibility and blame I will now turn to the question how forest may be related to water and health.

2.2. Getting Nature Ready for Dispatch: World Water Day 2018

In March 2018 Guma released a Facebook-post dedicated to World Water Day:

> GUMA COMMEMORATES WORLD WATER DAY, MARCH 22ND 2018, THEME: NATURE FOR WATER: STOP THE DEFORESTATION. Water is one of the necessities of human beings. We cannot live without water. (…) (t)he Guma Dam is faced with several problems ranging from rapid growth in population in Freetown, housing developments and damage to the environment, deforestation of the catchment areas around the dam, climate change, etc. However, the most important factors threatening the very existence of the Guma Dam and water supply to Freetown presently are rapid deforestation of the catchment areas around the Dam and Climate Change. (…) Forests are in most cases an optimal land cover for catchments supplying drinking water. Forest water sheds supply a high proportion of water for domestic, agricultural, industrial and ecological needs. Likewise, the Western Area Peninsular (sic!) forest is very important for the survival of the Guma Dam and water supply to Freetown but the rapid rate of deforestation that is taking place there if not checked will resulted [sic!] in the death of the Guma Dam in the not too distant future. (…) Adding to pressures on Guma Dam, many smaller sources from springs and streams which used to flow throughout the year have been lost as a result of building encroachment into the catchments, destruction of the rain forest and the consequent drying of the microclimate. In 2016, Freetown experienced an acute water shortage due to above reasons, yet it seems we have not learned anything – the rapid deforestation and encroachment is still ongoing. Guma Valley Water Company however, have over years been working and will continue to work with its strategic partners and stakeholders to stop the rapid deforestation and salvage the situation

> otherwise the water supply situation in Freetown could have been much more worse [sic!] than it is presently (…).[10]

Since I have been referring to Freetown's forest-water bond as a 'fateful' connection and future device, it is worth considering one of the global symbolic machines regarding the problematization of different water conditions – since I have already spoken about water as an effective theory machine and thinking device in the introduction of this dissertation. World Water Day (WWD) is an annually held day of heightened awareness initiated by the United Nations. Every year, it is solemnized under another theme and slogan. The core concern is commonly about access to safe drinking water, with changing accentuation. I got to know the event through Guma staff. The company regularly hosted a range of different organizations which conducted workshops. Often these workshops took place for "sensitization" purposes. Accordingly, the Guma Valley Water Company I came to know was materially and terminologically filled with traces of such global undertakings. WWD being but one of those.

My interest in WWD here lies – as can be seen with respect to the Facebook-post – in the theme of the year 2018. During my research after the actual fieldwork, the website of that year's WWD was partially still on. The front page was already telling and offered sufficient content to analyse. Its introductory lines went like this: "This year's theme, 'Nature for Water', explores nature-based solutions to the water challenges we face in the 21st century." Further below it stated that "(w)hen we neglect our ecosystems, we make it harder to provide everyone with the clean water we need to survive and thrive." The picture included showed a toucan sitting on a pretty flower in the middle, in the background a lake surrounded by mountains, a couple of people walking or sitting around the water; a very idyllic scene. "Nature-based" seemed to mean drawing on other than conventional technical approaches. Technology was then dilated in the sense of including entities which 'before' were anything but technical. The famous nature-culture divide experienced a shift in this scheme. Something happened to the notion of the natural.

How is this framing to be understood? In a holistic fashion, human health is tied to the healthiness of natural systems. In order to sustain the supply of safe drinking water one has to protect the environment, especially forests, mangroves, swamps and so

[10] https://www.facebook.com/GumaValleyWaterCompany/posts/1632543856798696?__tn__=K-R (20.11.2019).

forth.[11] As I mentioned above, drawing on Maria Kaika (2005), one classical way of categorizing water would be to distinguish between good and bad water. Good water is associated with health. But it is also associated with domestication, purification and production. In the context of "nature for water" the tension between the natural and the technological receives a curious twist, as the former is also being incorporated into the latter. The objective is to shield water from contamination by performing an intermediate step, namely by preserving the context from which water originates. Most frequently, the issue is associated with 'the urban,' 'the industrial' or types of agriculture using large amounts of chemical fertilizer.

Stepping aside from the front page of WWD 2018, and toward a video produced in its context, I learned that "(h)ealthy forests and fields prevent soil and chemicals being washed into rivers"[12]. At a general level, forests as watersheds are deemed crucial due to their effective regulation and buffering effects of water flows. The FAO (Food and Agriculture organization of the United Nations) writes on its website concerning the global state of forests: "While three-quarters of the globe's accessible freshwater comes from forested watersheds, research shows that 40 percent of the world's 230 major watersheds have lost more than half of their original tree cover."[13]. The statistic deployed here is certainly fairly chunky. However, it shows how forest is stylized as a nexus of a globally articulated problematic. The WWD 2018, the FAO, and other large-scale organizations stress human populations' dependence on forests because of their dependence on water. It is remarkable how the natural is drawn into a rationalized management process: Water's *production* process is extended. In fact, it comes as a curious oxymoron in which nature is rendered technological while, at the same time, the binary opposition between the natural and the social is reinforced. Or, to put it differently, *forest may become part of an infrastructure as something decisively natural*.

One demand articulated in the context of WWD 2018 concerns more "green infrastructure." In the video already quoted above, an astonishing generalization is brought up: "Nature is green infrastructure". On the WWD website one can

[11] It is also interesting to engage with this cross-connection between health, water, nature, and technology through a side reference, an approach or concept called One Health (see Conrad, Meek and Dumit 2013, Wallace et al. 2015, Wolf 2015). Respective approaches have become quite popular in the past years. Commonly, One Health renders health more relational and holistic. That is, the emphasis is placed on the role of all actors present in a context, including vegetational features or animals such as fruit bats or rats. For a critical engagement with the concept see Hinchcliffe 2015.

[12] https://www.youtube.com/watch?v=4q6unaOiTzk ("World Water Day 2018: Nature for Water" UN-Water, 15.03.2018) (20.11.2019).

[13] http://www.fao.org/state-of-forests/en/ (24.11.2019).

furthermore read that "(w)e need to do so much more with 'green infrastructure' and harmonize it with 'grey' infrastructure wherever possible." Strikingly, these two are conceived of as separate spheres. Seen in this light, Freetown's forest-water bond would hence be an infrastructural affair through and through. It is worth mentioning that on the same day of the WWD post, Guma also published a number of photos documenting signs of deforestation; some of them showing paths, even small roads, created by tree fellers and which must have existed for a considerable time until being detected. Evidence for those 'outside' the system that there *was* a problem. To provide a basis to adequately scrutinize the tensions involved both onto-epistemologically and politically, I will now turn to Ashley Carse's elaborations on the matter.

2.3. Considering Nature as Infrastructure

Approaches toward the integration of natural systems such as forests into infrastructures are certainly not new. It is, however, a matter relatively unattended to on the part of scholars from anthropology, the Science and Technology Studies (STS), or other disciplines getting more and more involved in the analysis, theorization, and interpretation of (water) infrastructure[14]. Ashley Carse has published one of the few ethnographic accounts of this integrative configuration of an infrastructural system. Thus, it makes sense to take a close look at his conceptualization. Carse develops his ideas in the course of an engagement with the genesis of the Panama Canal watershed. To be more precise, he is interested in the conditions of possibility of the forested areas more or less adjacent to the canal being turned into an infrastructural component. This infrastructural move hinges on the idea that natural environments or features are quite capable of 'service delivery'. He points out that "(a)lthough the Panama Canal watershed has not, to my knowledge, been explicitly characterized as infrastructure, administrators do emphasize the infrastructural functions – primarily water storage and regulation – that the drainage basin provides." (Carse 2012: 544).

The technical condition at the beginning of the logical chain is the Panama Canal's permanent dependence on large masses of water, in order to being able to work its complex system of locks and reservoirs. Facing an increasing shortage of water for the canal in the 1970s, the administration searched for alternative ways to accumulate water. Carse cites a Frank Wadsworth, US-official on tropical forests, who stated,

[14] I feel that Carse's assessment that the "relationship between socio-technical systems and the non-human environment has received less sophisticated attention." (Carse 2012: 543) is still true.

confronted with the precarious conditions of the canal, that "only forests" could restore and stabilize the canal's capacity to function (ibid.: 549). Resulting from considerations such as that, a concrete conceptualization and implementation of the Panama Canal watershed was increasingly considered more seriously. The general idea about watersheds is then implicit in the description that the "canal depends on fresh water that falls as rain across the surrounding watershed (…)." (ibid.: 540). Forests thus play an important hydrological role in this conceptual scheme as they regulate water flows. For instance, this involves the regulative role of trees regarding precipitation, in hydrology conceptualized through the term interception. The term describes the slowing down of water reaching the soil due to interception by leaves and other vegetational features (Ward and Robinson 2000: 63f.).

Carse concludes that "(a)s the arrival of the watershed concept in Panama demonstrates, a hydrological basin may be a 'natural fact', but for planners, managers, and policymakers, it is only one possibility among many for partitioning and managing the earth's surface. Thus, watershed forests became infrastructure through the purposeful work that went into linking them with the existing water management system." (Carse 2012: 551). Forests were understood as entities that 'produced' water (ibid.: 552). This is a formulation which can be found in 'official' (be it NGOs, state bodies or others, often committed to producing universal frames for narratives and problematization practice) and 'vulgar' conservation politics, too. Of course, a forest does not as such produce, i.e. make water. Framing the regulative effects of forests in relation to precipitation as a form of production, stresses the idea that there are accumulation patterns which can be harnessed.

Put short, a natural system's provision of water is the basic issue of Carse's text. However, especially in regard to newer works on infrastructure there is another part of his text worth mentioning here. It gives his argument an interesting twist toward *practice*. At the conceptional core of the text one finds the figure of a particular type of work which is capable of turning nature into infrastructure. "Work (…) blurs the nature-technology boundary (…)." (ibid.: 540). This is particularly interesting here since above I have been talking about boundary work: endeavors to establish and maintain a line or boundary between specific spheres. Carse's attention is on the production of systemic arrangements though. He traces the nuanced idea that "forests, wetlands, reefs, and other landscapes, if appropriately organized, deliver services (…)." (ibid.). As I understand it, it is mainly organizational work Carse has in mind. This would be work in line with a particular infrastructural script. I find this section

inspiring because it guides attention to the practical making and maintenance of the respective system. On the one hand, this raises the question what exactly is to be worked. What is the object of infrastructural work? Which is to ask what are the components or elements of an infrastructure.

On the other hand, this encourages to ask about the concrete forms and sources of this work. An infrastructure is not merely a given but its functional composition is the result of work. Practical engagements in this sense are commonly associated with a kind of script (Akrich 1992). A focus on practice provides a flexible perspective. Many recent ethnographic works on infrastructures have pointed out that technological systems are much more than a mere integration and sequence of technical objects doing their job in a clocked and harmonic kind of way. For instance, the system with all of its components has to be harmonized through infrastructural work. In a way, it might be legitimate to speak of "infrastructuring" (Calkins and Rottenburg 2017: 253) rather than infrastructure. Doing so, places accentuation on the practice-related aspects of an infrastructure (for a longer discussion of "infrastructuring," see chapter four). Infrastructures are vibrant systems, charged with normativity, politics, and the peculiar engagements in specific locations.

To be included in this is, furthermore, the kind of infrastructural work which is neither planned nor authorized. Freetown's water infrastructure, comprising the full range of heterogeneous elements, was appropriated by a variety of actors, altered by a plethora of environmental conditions and effects. Nikhil Anand has elaborated this aspect very well in his works on Mumbai's life of pipes (Anand 2011, 2012, 2017). Qua script, infrastructural systems are not meant to be engaged with by any random actors. But they are, nevertheless. Accordingly, it is accurate to say that such systems are by definition, but precisely not by practice, separate or isolated systems. The result are tension and friction. If a forest is defined as a part of an infrastructure, it may be placed under protection. It may still be entered by loggers, hunters, or land grabbers. In Freetown's hills, there was not even a fence keeping trespassers off forest grounds. Considerable tension emerged from this contradiction. An infrastructural script may require the system to be kept 'clean' (Carse 2019). The demarcation of the system's boundaries – at different levels – represents a core aspect of this. I agree with Carse when he writes that "(m)oreover, the concept of infrastructure does not delimit a priori which – or even what kind of – components are needed to achieve a desired objective." (Carse 2012: 540). The boundaries of an infrastructure are always object of negotiation and arrangement. In a way, this echoes Brian Larkin's indication that the definition of

an infrastructure is, necessarily, an imperative act (Larkin 2013: 330). What follows a respective imperative act is organizational work. As Carse writes in a more recent text concerning watersheds: "(r)egardless of the ideology affixed to watersheds in general, establishing the sociopolitical reality of a particular basin depends on assembling scientific knowledge, maps, laws, technologies, discourses, and institutions that correspond with its boundaries." (Carse 2018).

Speaking of boundaries, the path taken in this chapter differs from that taken by Carse's paper. On the one hand, the case I refer to was different, namely an infrastructural system producing drinkable water. There was thus a much stronger focus on water quality aside from quantity and correspondingly Freetown's forest-water bond also had to do with human health. On the other hand, while he does include considerations of the practical (re)composition of the infrastructure which supplies the Panama Canal with water, Carse does not scrutinize the ways the natural figures as a category in all of this. I suggest that it is worth considering what nature means and what this notion does in a specific context such as Freetown. The natural is also a powerful arrangement device. That is, it may produce coherent contexts. An example of this would be the hydrological cycle comprising the range of natural factors playing a role in the process through which water goes 'naturally.' Calling into question this exclusionist use of the natural, scholars have argued to replace the concept of the hydrologic cycle with that of a hydrosocial cycle (Linton 2010: 228f.). However, observing the numerous problematizations of the dichotomy of nature and culture, I propose a more pragmatist approach. I am above all interested in the demarcation and labelling of defined spaces *by means of nature*.

In order to get a hold of this matter, I draw on the work of Anna L. Tsing at this point. Looking at her widely discussed book *Friction* (Tsing 2005) I found most appealing some of the less prominent concepts she develops and plays with in the course of her engagement with the global. Among those is the notion of "gaps." It is, as I find, a useful tool in dealing with certain forms of spatial demarcation which involve the notion of nature. Tsing's ethnographic case concerns a part of the central Meratus Mountains which she visited during the 1980s and 90s. The natural environment she witnessed 'on the ground' would be described as "secondary," anthropogenic forest, precisely (and perilously) not as "neatly managed" as plantations or orchards (ibid.: 174). "This was a weedy, patchwork naturalness without clearly demarcated forest reserves." (ibid.); as such analogous to the mountains' population's social life: also kind of "weedy." Thus, the social reality as experienced by Tsing during her fieldwork

was that of complex or complicated landscapes, shared space "without clear demarcations of separate spheres" (ibid.: 175). But then: "(a)s long as both developers and conservationists divide up the land into zones of intensive agriculture and zones of pristine nature, no such patches of regrowth and possibility will be acknowledged. The central Meratus Mountains will continue to be invisible, or worse yet, criminal." (ibid.: 190). Wrapping things up, Tsing concludes that between the late 1960s and the end of the millennium development logic "divided the country into dichotomous zones of population and zones of natural resource exploitation" (ibid.: 194). The context Tsing interprets is one involving relations of exploitation, resource extraction to be precise. According to her, the extraction as such was made possible by categorial acts despite or in resolute ignorance of the realities made invisible by them. This is where her concept of gaps comes in.

Tsing describes these in the following way: "Gaps are conceptual spaces and real places into which powerful demarcations do not travel well." (ibid.: 175). That is to say, the term gap captures spaces which defy classification along the lines of the inhabited (or urban) and the socially-empty natural. The issue is that demarcations do travel into them, and often so with considerable violence. The gaps in the central Meratus Mountains were rendered natural and as such they could be targeted ruthlessly for resource extraction. The presence and practice of those human beings who lived in the secondary forests – the gaps – were in turn rendered invisible. Thus, what Tsing aims to highlight with this term is a tension between categorial acts – defining an area as 'primary forest' – and the actual social realities embodied within these – say, the social life of a forest, including human action. Showing considerable similarities to works on state legibility of, say, Tania M. Li (2014) or James Scott (2009), Tsing characterizes the processes involving the flattening of gaps as "powerful projects of categorization" (2005: 172) as they represent one particular condition of possibility for resource extraction and disappropriation.

The situation described by Tsing is certainly characterized more by aggressive resource extraction, massive environmental destruction, and deprivation of rights, as was the case in Freetown. Quite a different context. However, it is the making and strategic deploying of 'nature' that I am interested in. Bringing in Tsing's notion of gaps helps emphasize the kind of friction and conflict that arose from defining the area around the Guma Dam as protected forest. That is, regarding Freetown's adjacent forests the category of a natural, i.e. asocial forest was a troublesome one here, too. The woods represented a protected area. As such they were not supposed to be entered

and altered without permission. Yet, people did interact with the forest in different ways. Their practical appropriations were classified as illegal trespassing in a generalizing gesture. This gesture carried considerable political friction since residents living in or near the forested hills often depended on access to the woods, be it for hunting or the production of charcoal. Others were searching for land to build on. A whole range of practices and facets were drawn into the frame of problematization in public discourse. Those criticizing the encroachment of the forest saw the issue, on the one hand, in a devastating lack of urban planning coupled to deep-rooted corruption in those institutions deemed responsible for the matter. On the other hand, 'unauthorized' people interacting with the forest were blamed for behaving ignorantly and irrationally. What was decisively rejected in these problematizations, was the social or ecological life of such gaps; or, as Tsing put it, what one could see was the imagining of and call for "empty forests, spaces of a nonsocial nature" (ibid.: 201). Possible gaps were flattened. Community involvement, for instance, was not usually intended in the script defining the forest's constitution. An interesting point when looking at the narratives concerning forests and deforestation in Sierra Leone.

2.4. What Is a Forest?

So far, in order to capture the problematizations of Freetown's forest-water bond I have assembled some conceptual tools. Nature has turned into infrastructure; natural forest has turned into water infrastructure. A lot of attention has been paid to nature and water. What is a forest though? This is a question worth asking when being interested in the ways Freetown's forests were deployed as a category to define an exclusive area. A question worth asking also since the answer is far from simple. There are different ways of speaking about forest. I have already indicated that I am inclined to focus on forest as the result of practice – for example of infrastructural classification and demarcation (boundary work). It is from this angle that I understand Tsing when she writes in reference to the concept of Satoyama forest restoration that this "helped me see that foresters in each place had different ways of "doing" forests." (Tsing 2015: 162). Forest as an entity one may refer to is hence not merely a given but the result of practical definition. Similar to water, it *may* be turned into a passive object. Take, for example, what Tsing describes as "plantations:" a specific product of capitalism as an overarching translation machine. Here is a fitting characterization of hers: "Yet modern forestry has been based on the reduction of trees (…) to self-contained, equivalent, and unchanging objects" (ibid.: 168). In the process of creating a plantation,

what is removed from the assemblage of trees is their "ability to make history" (ibid.) which I interpret as entanglement, the making and shaping of contexts.

There is also a small ethnographic sketch in Tsing's text which addresses the blurring of forest categories, namely when she visits a natural forest in northern Finland: "It looked exactly like an industrial forest. "Ah," I thought, "How the lines have blurred."" (ibid.: 167). According to her, on the Russian side people said that the forest was a 'mess'. So, forests can be described in terms of dirtiness and cleanliness, indicating conditions of a very specific socially or ecologically relational makeup. Which leads me to Eduardo Kohn and his rather unconventional take on forest. On his mission to develop an ethnography on *How Forests Think* Kohn sets out to tinker at the "basic level" (Kohn 2013: 10), as he says. He is eager to describe the forest not merely as a background for human social interaction. Instead, Kohn approaches the forest itself as an assemblage of dispersed agency, including explicitly the contributions of trees and animals. Put bluntly, the forest is not merely there, a given, but it does things. That said, it is a little bit peculiar that Kohn does not spend that much time elaborating on his core term: the forest. At the same time, he proposes to "engage with the forest on its terms, to enter its relational logic, to think with its thoughts (…)" (ibid.: 20). What is "it" then, one has to ask? Kohn offers only limited thoughts on this matter explicitly. The following formulation is interesting though: "The problem of when the ants fly can tell us something about how the rain forest comes to be what it is: an emergent and expanding multilayered cacophonous web of mutually constitutive, living, and growing thoughts." (ibid.: 79). Kohn accentuates the heterogeneous and vibrant composition of forests.

This offers a neat addition to Tsing's notion of gaps. Forests appear here as highly social contexts which tend to contradict simple condensation into 'a' homogeneous nature. If in the course of (infrastructural) rationalization forest is turned into a clean and asocial (in the sense of human sociality) entity this must hence produce friction. I take it as Anna Tsing when she writes that "(i)f categories are unstable, we must watch them emerge within encounters. To use category names should be a commitment to tracing the assemblages in which these categories gain a momentary hold." (Tsing 2015: 29). Ethnographically speaking this is a crucial point. From this perspective, it makes perfect sense attending to Freetown's forest-water bond more closely. How was the category of the natural forest negotiated across different practical levels in the city?

So, we shall observe Freetown's forests 'emerge.' However, what if we ask what a forest in Freetown, Sierra Leone, is more specifically? There is another aspect which

might complicate an answer to the question. It leads us into a debate on deforestation in Sierra Leone. James Fairhead and Melissa Leach – the two authors who have triggered this debate – write in one of their texts: "(h)ow 'forest' is defined clearly affects estimates of change, and much forest can be lost or gained in the translation between different definitions" (Fairhead and Leach 1998: 6). What the two authors refer to are different estimations concerning the degree of deforestation in Sierra Leone throughout the centuries. Estimations vary depending on the respective definition of forest. Provisionally, Fairhead and Leach go with Hall's definition which depicts forest as "vegetation dominated by trees, without a grassy or weedy under-storey, and which has not recently been farmed" (Hall in Fairhead and Leach 1998: xvii). Though, this mixes things up a bit. For, it uses both land cover and land use as defining criteria; which might not be the best thing to do when distinguishing the two is a core matter of dispute.

The matter of land use raises the question concerning the right to the forest; who is authorized to engage with the forest and in what ways? In addition to calling into question dominant accounts about the constitution of forest and their removal, the debate sparked by Fairhead and Leach's contributions offers a valuable frame in this regard. That is, it sheds light on the blame games involved in narratives about forest. As I have already pointed out in the above sections, concerns about deforestation were present and intense in Freetown (Jackson 2018). Though, deforestation as a theme and interpretive frame also applied to Sierra Leone more generally. The impression one gets when scanning through the literature is that the matter is rather complicated. It starts with the already-mentioned and troublesome distinction between land cover and land use, namely as a means to elaborate criteria for forest identification (Comber, Fisher and Wadsworth 2005, 2008). Drawing on disciplinary reflections such as these, Wadsworth and Lebbie state:

> The accepted wisdom of forest loss in Sierra Leone is that it is recent, rapid and drastic, the validity of this depends in part on how "forest" is defined. While the dominant narrative is not supported by the data we have available, it is also not particularly supportive of the ideas put forward by Fairhead (…) which again depend on exactly what is meant by forest. These questions of semantics are critical if progress is going to be made in the debate about forests in West Africa." (Wadsworth and Lebbie 2019: 1f.)

Fairhead and Leach are notorious due to their provocations concerning unfunded and simplistic assumptions about deforestation in West Africa. While their arguments are

time and again reconsidered and differentiated their basic theses remain powerful and convincing (Munro and Horst 2015).

Essentially, their target were stereotypical, often colonially rooted narratives about deforestation in West Africa. Considering their texts, their argumentative gear covers a range of critical paths. Among others, they demand to draw on local narratives as counter narratives regarding change of vegetation. In addition to that, they reconsider historical records and bring forward evidence which tells another story of forests in West Africa, especially in the "transition zone" (Fairhead and Leach 1996: 1), that is the forest-savanna mosaic of which Sierra Leone is a part. In their piece on *Reframing Deforestation* they primarily attack statistics produced by the FAO and which are based on taken-for-granted assumption, far from being supported by ethnographic or historical data. In their chapter on deforestation in Sierra Leone the two write that "(w)hile it is certain that Sierra Leone currently has a relatively low proportion of mature forest, the question arises as to when, if ever, it had much more" (Fairhead and Leach 1998: 138). They suggest furthermore that:

> (R)ather than compare present vegetation with the historical record of past vegetation, it has been common and expedient for studies dealing with a timescale of a century or more to compare current cover with the vegetation considered to be typical of a given bio-climatic zone (…). The 'zone' is thus taken to represent the baseline or 'original' vegetation." (ibid.: 10)

Thus, Fairhead and Leach detect a certain intractable idea that Sierra Leone, including the forests on the Western Area Peninsula, was 'actually' very forested in its original vegetational state, so to speak; which would imply that the more recent shape and extent of vegetation – little forest – embodies a past of massive environmental destruction.

Assumptions such as that could and can be heard both within and outside the country. Among other things, they have to do with the uncritical use of deforestation statistics. For instance, in an article in the Guardian on the spread of the Ebola virus disease one can read: "Once blanketed with forest, West Africa has been skinned alive over the last decade. (…) Within the next few years Sierra Leone is on track to be completely deforested"[15]. To be clear, my point is not to state that deforestation did not take place or that it was not a problem. Rather, I found it significant how 'naturally' these

[15] https://www.theguardian.com/vital-signs/2014/oct/03/ebola-epidemic-bats-deforestation-west-africa-guinea-sierra-leone-liberia (10.07.2019).

imaginative vegetational landscapes were used in articulating the problem concerning the connection between the city of Freetown, the forest, and water. In this sense, the points made by Fairhead and Leach resonate well with the experiences of my own fieldwork. References to the 'original forests of Sierra Leone' were common and accusations of those engaging with the forested areas around the Guma Dam often linked to these.

Accordingly, the reason why I engage with Fairhead and Leach here is because their texts provide a background against which one can read interpretative or diagnostic schemes in present day Freetown. In her book on *Rainforest Relations* Melissa Leach writes: "West African peoples have commonly been portrayed as agents of forest degradation and forest conservation has generally been oriented towards the exclusion of local activities from reserves (…)" (Leach 1994: xvii). While the statement is slightly coarse, at least regarding my own ethnographic case, it nevertheless pinpoints two important aspects. The figure of "agents of forest degradation" underlines the public call of 'who is to blame,' a common figure of speech in urban Freetown. It needs to be pointed out, however, that the thesis regarding the "exclusion of local activities from reserves" cannot be easily sustained in an absolute sense. In my conversations with staff members of institutional bodies responsible for administering the forest areas around the Guma Dam, I took notice of regular hints at community engagement. At the level of official accounts and expectations, too, I found that social exclusion was not an objective in its most rigorous form. Sierra Leone's NPAA, for example, writes on its website concerning the "National Protection Area Authority and Conservation Trust Fund Act, 2012" that "co-management of natural resources" with "local forest edge communities" is to be promoted[16]. The important point about such 'scripts' is that they formulate an idea regarding the composition of the forest and, consequently, the kinds of interactions with it that have to be in line with the prescriptions. Community engagement in this sense is expected to take an 'adequate' form.

The trend toward community involvement can be witnessed in many contexts, as Melissa Leach herself has already noted in the 1990s when writing skeptically about "people-oriented" approaches (Leach 1994: xvii). Clearly such formulations and conceptualizations do not necessarily have to represent realities of cooperation on the ground. The relation between official statement and institutional practice on the ground may be contradictory or reveal gaps. My impression of the situation at

[16] http://www.npaa-sl.org/become-a-successful-person-with-gravida-nibh/ (30.11.2019).

Freetown's margins was that collaboration between state bodies and communities took shape mainly in occasional sensitization workshops. In general, this seemed to be the most common form to get communities 'involved.'

In the end, Fairhead and Leach speak about power relations, of course. The power to define natural space entails the power to exclude and criminalize. Sometimes this has dramatic consequences for human beings as well as the environment that has been labeled natural – as shows Tsing's case of resource extraction. Demarcation, access regulation, and exclusion are locally specific. One should keep this in mind when reading a strongly formulated passage such as the following from Fairhead and Leach: "reserves have been established in which local use rights have been eroded, often totally" (Fairhead and Leach 1998: xiii)[17]. It is moreover remarkable that they write that "(s)uch policies have aimed, in various ways, at protecting 'nature' (…)." (ibid.). The fact that they place the term nature in quotation marks implies that Fairhead and Leach find the variant of the notion as it excludes (unauthorized) human presence and action problematic.

Whether exclusionist acts of this kind – both in the sense of keeping people out as well as punishing those trespassing – are effective, i.e. implemented practically, is another question. In Freetown, matters were rather complicated. As I have pointed out earlier in this chapter, authorities faced serious difficulties monitoring the protected areas around the Guma Dam. In my conversations with Guma as well as NPAA employees, I got the impression that there was a strong feeling of powerlessness among staff members of these institutions. Speaking more generally, there was a widespread frustration that the state did not act. Corruption as well as incompetence or ignorance were named as the main reasons, why the problem concerning the forests was not tackled adequately and effectively.

2.5. Freetown Deforested

"(T)here is no respect for those green belt areas." This is a statement given by Kolleh Bangura, director of the EPA, quoted in an article published in "Global Issues."[18]

[17] In some contexts, breaching the boundaries can be subject to draconic penal regimes. In "Misreading the African Landscape", their most prominent contribution to the debate on deforestation, they allude to the fact that in Guinea during the 1970s, the setting of bush fires had carried the death penalty (Fairhead and Leach 1996: 4).

[18] http://www.globalissues.org/news/2011/06/06/9946 (28.11.2019).

Picking up the decisively global and abstract constitution of "nature for water" again, I find the name of the online newspaper quite fitting. In the article, Bangura states that controlling illegal construction across these boundary zones is a difficult task since it was such a politicized and intense matter. Among other things, he points at the killing of a land official whose task was to demolish off-limit buildings. Clashes between residents and staff members of institutions or companies in charge took place time and again, not only in restricted areas. Speaking to Foday about Guma's reputation in the communities, he said that sometimes he and his workers had to be careful not to provoke violence. The cutting of a water connection was (understandably) often a matter of concern and outrage. The tension inherent to these negotiations applied to the (de)forested areas, too. Matters concerning water were more existential than many other things. As such they were also much more delicate. The forests around the Guma Dam were not merely defined as a protected natural area, but they were part of the city's water infrastructure. It was the forest that 'produced' the water and supply was already not sufficient. The drawing of boundaries was an ongoing affair. Demarcation lines were drawn, crossed, and sometimes re-drawn elsewhere. Boundary work in the wider sense was a matter of everyday business.

Leading this back toward the Guma Dam, Freetown's water supply, and the right to the forest, I was informed that it was illegal to draw resources from the forests around the dam site or to grab land there. However, I found the situation to be unclear. Being interested in the legal position and formal explanation of the situation, an NPAA official referred me to the Environment Protection Agency Act of 2008 which declared the forming of the EPA as an institution, clarifying its structure, function and so forth[19]. The paper did not really offer a concrete image of the legal situation. Curiously, the word 'forest' did not appear in the document, only in form of 'forestry'; and merely twice. Furthermore, in spite of the ideal of strict protection, the government's main activity in protecting the forest seemed to be encapsulated in the already-mentioned formula 'sensitization.' I observed sensitization to be all over Freetown, in different forms. On Facebook, no matter whether on the profile of the EPA or local branches of NGOs, I came across a sheer mass of calls to become a responsible citizen (of the world) and protect the environment. Visual sensitization in the form of pictures on walls, banners or stickers could also be found in many places. Within communities,

[19] For more information about the legal-political development see Jackson 2018.

workshops were organized, most often being initiated and executed by external actors such as NGOs, development cooperation organizations and consultants.

In consideration of the general ubiquitous issuefication that I spoke of in the introduction, it is not an overstatement to say that Freetown was saturated with sensitization as a highly common mode of problematization. This applied to the subjects of best hygiene practice and disease awareness. It also applied to efficient water use practices, on-time payment of water bills, and protection of the environment. The heavy emphasis on sensitization, made sense in two regards. On the one hand, the causal links between different facets or phenomena in the city had to be made explicit. If residents were seen as being ignorant, one way of countering this was by highlighting connections and their consequences. Water connections played an important role in all of this. Sensitization as a process of integration was, furthermore, less confrontational than eviction and the demolishing of houses. In fact, I regularly encountered the opinion that politicians and authorities did not enforce the law in restricted areas because they feared a loss of votes. On the other hand, the emphasis on sensitization was certainly also due to limited means regarding the physical monitoring and protection. During my visits to the Guma Dam, I had the chance to speak to one of Guma's forest guards and join him on a little tour around the natural-infrastructural facility. He gave me an overview of what the actual monitoring of the area looked like.

Mohammed, the forest guard, told me that patrols took place about once a month. The two men walked differing routes through the forest around the dam site. They were supposed to check on the forest's condition, in particular at the margins. The main focus was on signs of human activity of any sort. Mohammed assured me: "We always find something." Chuckling he added: "The sounds of a chain saw you can hear from very far away." I asked him if they went out with police support sometimes. Yes, he said, but very rarely, "to enforce the law;" something which they themselves were not authorized to do. I asked why they did not do the patrols on a more frequent basis. "Lack of personnel," he answered shortly, shrugging his shoulders. As we walked on toward Little Guma – an additional weir that had been constructed in order to boost the water quantity being channelled into the lake – Mohammed mentioned that sometimes groups of tourists (few in Sierra Leone) came to the dam site for hiking trips. I was a little confused about the porosity of this restricted area and the question who and what practice gained access. At the concrete ground level, matters were much more open to negotiation than on paper.

Mohammed had told me about occasional raids with police forces. From other sources I learned that, every now and then, action was taken against those who had encroached restricted areas. Often an intervention with police or even the military took place after the initiatives of ground personnel from the respective institutions or private persons who complained about land grabbers on their property. However, according to both externals and internals neither did such actions occur with high regularity not did they follow a coherent spatial and temporal systemacity. From time to time, large scale operations were planned, like the one mentioned in an article written by a Sama Banya and which appeared in The Sierra Leone Telegraph in 2014:

> A few weeks ago there was a radio announcement that the ministers of land, country planning and the environment, together with the minister of agriculture, forestry and food security, were to undertake a tour of the Western Area Peninsula. Their aim was to take action against anyone who had built in forest reserve areas, especially those which constitute the catchment areas of the Guma and Congo dams. These illegal constructions constitute a threat to the water supply to the city of Freetown and its suburbs. (…) The mountains have been completely rid of every forest cover and vegetation, leaving them bare and ugly. This unfortunate and sad condition has been caused by human activity, including deliberate clearing for the expansion of human settlements. (…) As I went as far as Hamilton junction, I turned back concluding that the tragedy was the same all the way to Tokeh, with perhaps a patch of forest in the immediate vicinity of the Guma dam – which is by no means enough to constitute a realistic catchment area. Were we to have really heavy rains, the soil from the mountains would be washed all the way down, causing severe erosion, and then followed by the destruction of the beauty of our famous beaches with silt.[20]

The passage is opportune since it leads us back to the catchment area, the main concept concerning the forest-water bond: Banya makes an evaluative statement regarding "a realistic catchment area" which foregrounds the forest's capacity to deliver its hydrological services. The whole catchment area, to be true, appeared relatively small considering the size of the population to be supplied with water. At the time, Freetown was a growing city, somewhere between one-point-five and two million people. Further decimation of the forest consequentially appeared quite menacing to those reflecting on water issues in the city. This menacing character was underlined by

[20] https://www.thesierraleonetelegraph.com/the-tragedy-of-freetowns-peninsular-forests/ (last access 07.10.2019).

earlier experiences. Water supply had been a concern in the city before. In an interview with Guma's production manager Mohammed Koroma, I was told that Freetown had experienced several extraordinary droughts. Such droughts made the chronic water scarcity (during the dry season roughly between October and May) become even more acute than usual. During the 2004 drought, for example, the state of things had gotten so bad that firemen had driven around the city to supply water. I was told this story multiple times. The 2004 drought had left a clear mark on public memory and I have come across 'it' in the form of pessimism, cynicism, and alertness. Considering the city's infrastructure, in the course of the past droughts water levels in the Guma Dam had dropped down to five[21] and as a result the city had come to ration water. With its establishing, rationing had come to stay. Ever since, taps in many parts of the city remained dry for most of the time, even during the rainy season.

In the acts of problematization, the forest around the Guma Dam clearly assumed a fateful role. Urgency and necessity were added to the debates on deforestation. Homogenization and simplification were also involved when dwelling on the question who was to be made responsible. This was a crucial question in regard to both: the allocation of guilt as well as the responsibility to change things for the better or at least preserve what was left to preserve. The affair was complicated, and the backgrounds as well as motives of the actors engaging with the forest varied considerably. Occasionally, I witnessed an outraged blaming of corrupt politicians who supposedly grabbed land in the hills while preaching forest protection. Hypocrisy was indeed a conventional thorn in the eyes of those mainly objecting to political day-to-day business. Others placed a different focus and tried to boil the matter down to practical constraints, inherent necessity that is. On his website, "conservation consultant" Bruce Byers, who lists as part of his portfolio working in a STEWARD project funded by USAID, offers the following impression: "And the forest that protects them is under siege, as was obvious on our drive south from Freetown. Poor people need building materials – poles and boards; and fuel for cooking – wood and charcoal. All are free for the taking from the forests."[22]

It was probably true that most of the time the 'trespassers' motives were material in nature, be it timber (to be used directly for construction or indirectly for charcoal),

[21] There were six levels, though, as soon as water levels dropped as far as five, it was barely drinkable due to increased sediments which could not easily be removed in the treatment process.
[22] http://www.brucebyersconsulting.com/conserving-watershed-forests-in-sierra-leones-western-area-peninsula/ (01.12.2019).

game, or fruits. I met people selling rocks or wood to urban dwellers, at relatively low prices; otherwise, these resources had to be imported from inland. Sometimes people 'crossing the line' came from the nearest neighborhoods, sometimes they came from more remote areas of the city. Land grabbers were sometimes wealthy and sometimes poor. Though, when speaking about larger 'properties,' it appeared as common sense that corruption was involved in the handing out of building permits.

In Byer's description the emphasis is on the unorganized character of resource extraction from the forest. A kind of concern already noted by Fairhead and Leach, namely when they engage critically with deforestation critics pointing at the emergence of "'anarchic' charcoal, fuelwood and timber businesses to supply the urban market" (Fairhead and Leach 1996: 31). They also mention a term which I encountered numerous times during my stay, that is they state that forest destruction usually was attributed to villagers' "ignorance" (ibid.: 29).

2.6. Summary

The obsolete demarcation line in the hills along the highway epitomized the diffuse and irritating situation concerning Freetown's forests. It was not entirely clear who was to be made responsible for the deforestation that closed in on the Guma Dam, Freetown's main reservoir of fresh water. Was it the plethora of 'ignorant' residents, land grabbers, and entrepreneurs crossing the boundary and engaging with the forest in destructive ways? Or was it rather a matter of failed urban planning, i.e. the government? Was it corrupt politicians and officials? The situation was utterly complex, complicated, and charged. Blame games sprawled like urbanization did. Matters were equally intricate when looking at the question about who was to solve the problem and what a solution could look like.

This said, clear-cut answers were necessary. In Freetown one ubiquitous and catchy formulation was "wata na life" (water is life) which stressed the existential meaning of water. The forest-water bond was thus highly imperative. That is, the connection between the forest and Freetown's water supply did not allow for much interpretive room. As such, it was deployed in acts of problematization, also as a means to narrowing down perspectives on the matter – simplification. The forest-water bond served the purpose of reframing, that is problematizing practices leading to the impoverishment and destruction of forest in a particularly dramatic way. Speaking generally, I suggest that nature, as a spatializing category, serves as a powerful means

to render an area exclusive. The forests surrounding the Guma Dam were defined as a natural protected area. The natural was an instance of boundary work which aimed at drawing clear lines. At the same time, the notion of catchment areas allowed for the blurring of the line between the natural and the technological, namely at the level of (rationalized) function. As a driving factor regarding the catchment area, the forest 'produced' the water that accumulated in the barrier lake and then flowed through the main transmission lines toward urban Freetown.

The water connection depicted in this chapter offered a way to (re)frame deforestation as a problem and subsequently condemn or criminalize practices related to it. I furthermore argue that the kind of boundary work by means of nature was part of the endeavor to keep the infrastructural system 'clean,' i.e. discrete and exclusive. In practice, the monitoring and maintenance of the boundary separating the city and the forest appeared to be less rigorous and porous, however. Consider here a formulation of Carse's: "While watersheds are often represented on maps as if they were discrete and interlocking like puzzle pieces, their geographies are actually nested." (Carse 2018). Freetown's water infrastructure's systemic integrity – especially in the form of its boundaries – was caught up in a constant process of negotiation. This applied to many of its components, as I will further elaborate in chapter four.

3. On Dysfunction

The water that accumulated in the Guma Dam, described in the previous chapter, was drawn through an intake and channelled to the treatment works which were close-by. I visited this facility a number of times, learning about the different treatment steps (sedimentation, filtration, chlorination and so forth), spending time with the personnel and witnessing the taking and measuring of samples. During my visits, I came across several appliances that were not operational. Filters were broken, chlorine gas was missing, measurement devices did not work. During another moment of my fieldwork, I attended repair work on one of the two main transmission lines and witnessed insufficient coordination and supply. These experiences gave reason to reflect on how equipment and procedures did not work (out) as well as the ways these instances were formulated as problems.

This chapter is about water infrastructure and dysfunction; the latter includes disorganization as a variant, so to speak. I approach dysfunction as a form or figure of problematization. My approach toward problematization is as follows: problems are not pre-existing. They are the result of interpretation. Problematization is the act of defining an issue, based on a specific way of seeing things and placing them in relation to each other. This includes what the problem is, how severe it is or what consequences it has, what caused it, and possibly what a solution might be. Accordingly, a problematization in the form of "this is the problem" tends to be much more complex than a single phrase would suggest. There is a lot of contextualization implied. This contextualization and the kinds of water connections that pop up by attending to problematization, offer valuable insights into the fabric of cities such as Freetown. And, when taking into account that perspectives differ, it should be clear that definitions of what a problem is may vary between speakers. The same instances of brokenness may hence lead to different issues, so to speak.

I have said above that dysfunction figures here as a form of problematization. By deploying the notion in this fashion, I assemble a range of descriptions of how things did not work; things regarding Freetown's water infrastructure. Dysfunction hence refers to the interpreting and contextualizing of concrete instances of brokenness. I distinguish between brokenness and infrastructural dysfunction in the sense that the former refers to single or smaller instances such as a broken piece of equipment, while the latter is an act of problematization which refers to the system as a whole. The instances of brokenness, which I will discuss in this chapter, occurred or were addressed either at Guma's treatment works or during the extensive repair work(s) on

a water main, that I witnessed at Juba Bridge in the Western part of the city. While these instances did not necessarily affect the entirety of the water system, they still brought to the fore general concerns about the city's water infrastructure as well as Guma, the company managing it. The problematizations, which I will discuss in this chapter, were formulated by my interlocutors at Guma. They delivered insight into how the company's employees saw the water system and the limitations they had to face in their everyday work.

Speaking generally, dysfunction and infrastructure form a vibrant pair. *On the one hand*, infrastructures require constant maintenance in order to not break down. This applies to water systems in Freetown or Lagos as much as it does to those in New York or Berlin – it is not something essential to infrastructural systems in the Global South (Anand 2017: 225). In this chapter, though, I am not so much interested in infrastructural failure in the sense of breakdown or collapse. Rather, I engage with general and constant concerns and brokenness of the kind that did not threaten the system as a whole. This is to say, I am more interested in smaller malfunctions and damages than large-scale failure. An overall system may still function in terms of service supply while certain components or processes do not work according to plan. During the time of my fieldwork, Freetown's water infrastructure did supply the city with water. Aside from the repair and maintenance work on the mains, there was no unplanned system wide failure. That is not to say that there were no water shortages or concerns about water quality. Tap water was highly problematic (in the sense of being regularly raised as an issue) in Freetown. Supply was stopped intermittently here and there. Communities suffered from water rationing and unreliable supply schedules. There was leakage all over town. Was the system "dysfunctional" though? Due to the mass of concerns and brokenness, it surely appeared deficient. The water treatment works were no exception. Employees there told me that there was "always something." Also, some things remained unattended for years, for different reasons. When asking about these things, however, problematization would turn out quite complex.

On the other hand, the relation between dysfunction and infrastructure is characterized by a certain tension: infrastructural systems often figure as indicators of 'development' (Larkin 2013, Anand, Gupta and Appel 2018). That is to say, infrastructures are associated with or tied to images of 'modernity' in the sense of rationalized government and management. As such they carry an enormous political and symbolic charge; and they may invite stereotypes. African infrastructures, in particular, are

often depicted as being necessarily or 'naturally' dysfunctional. Rosalind Fredericks notes for example that "(c)ities in the Global South are more often than not characterized in pathological terms (…)" (Fredericks 2018: 23) and points at depictions of "African urbanism as necessarily dysfunctional." (ibid.). In addition, Caroline Melly states that "(w)edded to outdated empirical frameworks and stale concepts, much of the literature on Africa is poorly equipped to make sense of the uncertainty and multiplicity that characterizes everyday life on the continent (…)." (Melly 2017: 21). I suggest that this statement of Melly's resonates well with a critique articulated by Achille Mbembe, who writes at a general level that "(t)he upshot is that while we now feel we know nearly everything that African states, societies, and economies *are not*, we still know absolutely nothing about *what they actually are*." (Mbembe 2001: 9 (author's emphasis)). He goes on pointing out that "(e)thnographic description, distinguishing between causes and effects, asking the subjective meaning of actions, determining the genesis of practices and their interconnections: all this is abandoned for instant judgement, often factually wrong, always encumbered with off-the-cuff representations." (ibid.).

The present work follows Mbembe's call for empirical scrutiny. There are different ways of dealing with the issue outlined above. Further below, I will reflect on some of the (writing) strategies that, I think, offer a way out of or around the problem. Along the lines of the ethnographic material that I will unfurl, I will consider these and relate them to my focus on water problems, that is to say, problematizations of water situations and connections. Apart from offering a fairly direct empirical entry point, this take has the benefit of opening up a path toward understanding important spatial, social and political interconnections in Freetown. In the following part of this chapter, I will describe my experiences at Guma's treatment works. I will depict and discuss instances of brokenness that came up during my visits, and what kind of dysfunction these signified or pointed at when being problematized. Furthermore, I will reflect on different ways of interpreting my material (note that 'the material' as such is, of course, already the result of a foregoing process of interpretation). The second section will feature my observations of repair work on one of two main transmission lines running along Juba Bridge in Freetown's West. These repair measures had been planned for some time and represented a large-scale operation. Witnessing the preparations as well as the actual work on the line, I noticed a high degree of what I call disorganization. I will discuss this variant of infrastructural dysfunction as a problematization and engage with statements or evaluations on the part of Guma staff. I will use this discussion then to sharpen my focus on problematization.

3.1. Stories of Dysfunction A: Visiting the Treatment Works

The scene that I will describe in the following took place at the end of November 2017. I had been to the site (Figure 3.1.) before, but only fleetingly. This time, I wanted to get to know the facility better and attend the taking and measuring of samples. Guma's treatment works were located in the hills, halfway to the Guma Dam. The facility was situated in dense forest. Next to the main building and its network of tanks, there was a small turbine house which generated electricity for the operation of the facility. From there, the water went to the tanks for the three-step treatment process. Apart from chlorine gas, the treatment involved mainly lime and alum (sedimentation/flocculation). Not far from the facility, I spotted the remains of the old hydro line. As Foday told me, this line had been used to generate electricity in the past. Yet, it had been impossible to use the water flowing through it for drinking. So, since drinking water was of higher priority, the hydro line had been shut down in the 1980s. "Wata na life" – water is life, a slogan one could read all over Freetown.

Three people need to be mentioned here. Guma engineers Joe and ("Pastor") Moses were so kind to show me around the facility. They were my main interlocutors at the treatment works. The third person was a British engineer working for BAM, a consultancy that had been hired by DfID (Department for International Development) in order to repair the sand filters and maintain some other parts of the system. I met him in the hallway with the control panels for the filters outside. It was a curious encounter. In a flamboyant and somewhat casual tone, he remarked that this whole facility was "entirely outdated" and that it had not seen proper maintenance since the 1980s. In a way, I thought, he was right: the facility appeared old and dusty. Samples were measured 'old school,' that is by eye with colour strips, used to determine pH or chlorine levels. In the visitors' room of the treatment works, there were a relief and a graphic of the system which connected the barrier lake and the treatment works. The two technical models stemmed from the late 1960s (around the time when the system itself was established). Apart from looking old, they were indeed outdated since, as Moses told me, Guma no longer used carbon in the treatment process. But then, what did it mean saying that the system was "outdated?" The image of "outdatedness" is somewhat strange. It does not necessarily indicate dysfunction but it appears close to it. It should be clear that an "outdated" system does not have to be dysfunctional. Rather, calling the system outdated appeared like a means to belittle the facility (at least it had that effect). Besides, what the British engineer said was only partially true.

As Joe told me, the last 'real maintenance' had taken place in the early 2000s, "rehabilitation" he called it.

Figure 3.1.: Guma's water treatment works (photo taken by Lorenz Gosch)

The BAM engineer made another remark, though, which was more subject-related, and which raised concerns about the system being dysfunctional: the sand filters were broken. As he told me, some of the orifices were clogged and air pipes broken, which impaired the functioning of the whole filter arrangement with its layer dynamics. This was not negligible because almost all of Freetown's tap water ran through these filters. Moses mentioned this issue as well. He explained that the cleaning or rinsing of the sand and stone layers could not be done adequately "at the time" since the responsible orifices were not intact. As we strolled through the facility, it became more and more clear that this was but one broken element in an array of brokenness. This ranged from measurement devices that did not work, to the missing of materials and testing routines that were done incorrectly.

During my stays, I was particularly interested in the taking and measuring of water samples. I witnessed two routine sample drawings and analysis. The measurement

took place twice a day, around noon and in the evening. Three little test tubes were filled with water at specific spots in the system, or rather in the treatment process. The samples were taken to the lab. The test categories were the following (as I learned from looking into the protocol book): date, sample type (raw, stage 1, stage 2+3), pH, turbidity, CI2 (chlorine), Alk (alkalinity) and temperature. I was told right away that, due to the absence of the respective measuring equipment, they did not check the alkalinity and turbidity. In addition, the two men conducting the tests were not trained lab personnel. When measuring the pH of the samples they used the wrong scale. This was noted by engineer Joe, the only engineer in the room. He became quite frustrated when realizing this mistake. Furthermore, there was considerable confusion when they wanted to check the chlorine values of the water. They used a pill that induced a change of colour when reacting with the chemical. But there was no reaction. The water was supposed to turn pinkish. It did not. Finally, they realized that there was simply no chlorine in the water. The container was empty and had to be replaced first.

Joe was not happy about the fact that they could not conduct proper tests on the water. He pointed out that materials were missing and that Guma should hire properly trained personnel. As Joe and I walked back to the lab the following dialogue came about:

Lorenz: *Do you also test the water on bacteria?*

Joe: *Yes, we do.*

Lorenz: *When do you do that? Would it be possible to join you on that on time?*

Joe: *Well, to be honest ... we don't do that anymore. We used to but currently we don't have the necessary materials for that.*

More than once, Joe's explanations would involve an interplay of "generally" or "in principle" *yes* but "right now" or "under the given conditions" *not*. The given conditions lasted long, though. According to Joe, the problem concerning bacteriological testing was mainly that they did not have the nutrient solution or culture medium required for the process. All the other things, petri dishes and so forth, were there. Also, there was apparently no one trained to conduct such tests. I asked about such tests along the pipeline and received the same answer: generally, yes, at the moment no (for lack of equipment and personnel). Talking to engineer Moses, I noticed a similar kind of problematization, yet, with an interesting twist in the end. I asked him whether the water quality was also tested along the line, further down. He

said, yes. However, after a short break he added that "actually" this should happen at so-called standing posts, at least once a week. Unfortunately, he pointed out, Guma lacked staff and equipment to do so. In the end, this meant that bacteriological was not done on a regular basis, neither at the treatment works nor along the lines in urban Freetown.

Taking this into account, Guma's employees were not only incapable to measure the water quality. It was difficult to produce accurate numbers regarding the water quantity, too. To be precise, the machines which measured the flow rates were broken. When Moses and I were standing in front of the grey blocks being responsible for this task, these only produced one kind of value: "larger than 2000." Taking a look at the list with the noted values, it was always that same value. In the second column, it just said "defect." Actually, the devices used to be able to print graphs showing the results. But that was history. I asked Moses since when these were defect and he said that this was so since around two or three years. More and more, I had the impression that the whole measuring context did not work. Moses stated that they were discontent about this incapacity to measure. However, he also pointed out that this was not necessarily a big problem: "I mean, the water is clear" (in the sense of pure).

By saying that, Moses implied that 'the real' problem(s) with the water started down the line, namely when the water entered the city. This shift in his problematization of the conditions at the treatment works was striking. On the one hand, his statement stood in contradiction with the ideal of a facility such as the treatment works. These were defined as the location within the water system, where knowledge about the water was produced. In terms of management and control, this was an important aspect. Moses' succinct statement that, in the end, the water at this point of the system was clear, appeared almost outrageous. At the same time, I thought he was not wrong. That is, on the other hand, he shifted attention to the dynamic urban environment through which the piped water flowed further down the line. Freetown's precarious life of pipes (see chapter four) posed a serious threat of contamination. In the light of *that*, broken measuring devices or the lack of nutrient solution appeared less dramatic. This was, however, a matter of perspective. Which brings me back to the question of how to write about brokenness and dysfunction.

There are different ways of interpreting the instances of brokenness that I came across during my stays at the treatment works. Taking into account the previously mentioned stereotypes concerning African infrastructures, reflecting on writing strategies is fundamental. To a certain degree, the stereotypes may be linked to what Mahmood

Mamdani calls ”Afro-pessimism,” which implies being ”highly sceptical of the continent’s ability to rejuvenate itself from within. Whether seen as a problem of incomplete conquest or as one of unwise deference to traditional authorities, both sides of the Afro-pessimist point of view lead to the same conclusion: a case for the recolonization of Africa, for finishing a task left unfinished.“ (Mamdani 1996: 285). Among the expats (of which there were many in Freetown) I encountered in Freetown’s bars or taxis, certain forms of Afro-pessimism were fairly common. At the same time, I observed a considerable degree of disillusionment concerning humanitarian aid and development cooperation. Local accounts were not necessarily less stereotypical and simplistic, though. “This is Africa” was a phrase I came across frequently. The city’s water flows and especially the tap water system – problematized as utterly dysfunctional – was ubiquitous in these perspectives.

Now, how to write about infrastructural dysfunction, broken components and rugged processes? I have stated in the introduction of this chapter that I will reflect on writing strategies in relation to dysfunction. Reading through the literature, I suggest that one can distinguish between *contextualization*, *relativization* and *reinterpretation*. Note that these are merely rough categories to underline tendencies. They serve here as an auxiliary means. The difference between these styles of representation is not only a matter of emphasis. In fact, there is a tension between the first and the other too, which is interesting for the purpose of the present study. By playing with different ways of interpreting the ethnographic material, it should become clear why problematization is a very promising access point. But first, what would these styles look like in the case of the ethnographic material presented above?

Contextualization would not challenge the impression that the system was dysfunctional (dysfunction understood, in *this* case, as a given condition rather than a figure of problematization). Rather, contextualizing approaches generally try to show that there are reasons for why things are the way they are. Speaking about infrastructural systems, instances of brokenness or even breakdown, contextualization pays attention to the causes, which might not be part of the system but external. Thus, it is about making visible the context of dysfunction. For example, contextualization could mean explaining the lack of means for conducting bacteriological tests by referring to a context of disinvestment (or divestment). Engineer Moses stated that the company’s management had other priorities than supplying the treatment works with sufficient materials. That was his way of articulating the problem. In this sense, dysfunction would appear mainly as a consequence of a withdrawal of funding for

different reasons. A famous example of contextualization would be Paul Farmer's (2004) elaborations on structural violence: shedding light on more lasting albeit less visible conditions producing or favouring the outbreak of a disease such as cholera.

Reinterpretation steers away the focus on 'larger issues' determining conditions and experiences on the ground, and sheds light on what is 'actually' taking place. Or, to put it differently, reinterpretation means reframing matters and looking at how a system may work 'nevertheless.' For instance, instead of looking at reasons for why Freetown's tap water was not safe to drink, one could focus on how people coped with this condition. Regarding my own case, I could foreground the ways Guma's workers kept the system running, even though there was a lack of knowledge concerning the water quality and quantity. The water workers and engineers worked relatively successfully, so that the system would supply water every day, while dealing with serious challenges. One might argue that this style is closer to the experiences of actual people, their expectations, aspirations and so forth; in short, that the actors themselves are taken seriously. It seems appropriate to describe Freetown's water system by means of a terminology of improvisation, negotiation or defiance. An example of producing counter-narratives to those of mere suffering and powerlessness would be the work of Christian Doll (2020) who provides an ethnographic account of creative everyday adaptions by Juba (South Sudan) residents. Or, take Melly's reinterpretation of Dakar's traffic jams: "Dakar's bottlenecks *were not a sign of infrastructural failure* or disconnection but rather of the intense force with which people tried to connect and the building sense of momentum these efforts generated." (Melly 2017: 13 (my emphasis)).

Relativization may imply one of two things. On the one hand, infrastructural systems do not necessarily all work the same. These systems are embedded in locally-specific political, environmental, social, ideological and economic contexts. There may be considerable heterogeneity to be found within the notion of infrastructure. A water infrastructure in Sierra Leone may simply work in a way different from a British one; and an engineer like Foday may be required to acquire different skills than in other (infrastructural) parts of the world. On the other hand, relativization might also argue the other way round, namely by not emphasizing difference but similarity or sameness. Improvisation and negotiation, mentioned above, take place within any infrastructure, at different levels and to different extents. One might argue that it is not only in places of the Global South, that infrastructural systems tend to break down or require improvisation. Rather, infrastructures are fragile arrangements everywhere.

Mbembe also points out that "(t)he torment of nonfulfillment and incompleteness, the labyrinthine entanglement, are in no way specifically African features. Fluctuations and indeterminacy do not necessarily amount to lack of order. Every representation of an unstable world cannot automatically be subsumed under the heading "chaos."" (Mbembe 2001: 8).

So, these are the 'working categories' which I deploy in order to consider infrastructural dysfunction. While a contextualizing approach basically asks for the conditions that led to a situation to develop the way it did – hence confirming the (descriptive) setting of what is 'the case' –, the other two approaches either shift the case or doubt the 'matter-of-factness' by exchanging the "interpretive schema" (Rottenburg 2009: 16). Both poles hold a certain risk. The former may reduce human beings and the arrangements they interact with to products or passive recipients of an obscure context. Both relativization and reinterpretation run the risk of trivializing the very real consequences resulting from infrastructures not working effectively. As I said earlier, there is a tension between contextualization and the other two. From my point of view this is an ethical tension concerning the ethnographer's responsibility and the matter of appropriateness or adequacy. It is useful considering this tension for a moment in order to highlight the strengths and benefits of my own focus on problematization.

In order to carve out this tension, I consult two texts. The first is one is by Sherry Ortner. In a widely-read article, she discusses two quasi hegemonic paradigms within anthropology and draws them together in a provisional dichotomy. The first one she terms 'dark anthropology' which she characterizes as "theory that asks us to see the world almost entirely in terms of power, exploitation, and chronic pervasive inequality." (Ortner 2016: 50). In a differentiated fashion, she ties the emergence and consistency of such works to the emergence of neoliberalism at a global scale (see, for example, structural adjustment programs, the dismantlement of public and social services, privatization and so forth). In decisive contrast to this dark anthropology, Ortner portrays what she calls an "anthropology of the good." Approaches of this kind highlight appropriation, negotiation, improvisation, openness, engagement and agency. For Ortner herself it is clear that both 'sides' have their important contributions to make. As such there should be an urge to bring the two inclinations together in a productive manner. I associate Ortner's dark anthropology with what I have called contextualization and her anthropology of the good with reinterpretation (and to a lesser degree relativization).

The second text which may help to capture the tension between these two poles of representation was written by Luc Boltanksi. In his work, he deals the relationship between sociology and critique. He provides a distinction similar (but with different emphasis) to that of Ortner.

> "This paradox, identified from an investigation of the contribution of sociology to social critique, has as its corollary a tricky problem encountered by sociology, which, more generally, concerns the instruments of description and totalization at its disposal. Description of the social can in fact be undertaken from two different positions. The first consists in starting from an *already made social world*. (…) The second position consists in starting from the *social world in the process of being made*." (Boltanski 2011: 43f. (author's emphasis)).

In the first case, the context determines social life. The second variant places emphasis on how this context comes about, namely as the result of practical constitution. Ortner's and Boltanksi's discussions are not superimposable but they make analogical points. The question to be asked now is whether it is possible to find a stance which allows to combine the two poles. Boltanski offers the following assessment regarding the dichotomy:

> "The problem is that these two approaches, both of them equally legitimate, will yield results that are different and even difficult to reconcile. In the first case, stress will be placed on the constraints and forces that influence *agents*. In the second, it will instead be put on the creativity and interpretative capacities of *actors* who not only adapt to their environment, but also constantly alter it." (ibid.: 44 (author's emphasis)).

He proceeds asking for the conditions of possibility of a critique that does not require some form of totality for its position, something that stands in contradiction with strict sociological analysis. Most interestingly, he proceeds by considering the possibilities to derive critical positions from the perspectives and formulations of *the actors themselves*. At this point, the focus on problematization comes to the fore more prominently.

I propose to follow Boltanski's suggestion and to perform a pragmatist (and pragmatic) manoeuvre, namely to bracket the 'decision' regarding which position to 'take.' Instead, I suggest to conceive of dysfunction as a figure of problematization. What dysfunction means may shift. It is an interpretive connecting, arranging and explaining of instances of brokenness and things not working out, more generally. The

styles of representation, which I have developed above, may resonate well with concrete problematizations of the actors themselves. In this sense, they may serve as auxiliary means to interpret and contextualize the formulation of issues. As I have already said before, engineer Moses did both: he contextualized as well as reinterpreted and relativized by stating that, yes, certain things did not work at the treatment works but, in the end, the water was clear. I suggest that it is interesting to play with the three categories when engaging with the life of problems.

In order to sharpen my focus on problematization of infrastructural dysfunction (and water), I will discuss another segment of my ethnographic material. Apart from addressing the issue of disorganization, I will engage with problematizations of the working conditions of Guma's water workers.

3.2. Stories of Dysfunction B: Witnessing Repair Work

The history of the following ethnographic 'case' had to do with the August 2017 mudslide. The bridge in question was located in the far West of Freetown. At this point, the two main transmission lines, which carried the water from the treatment works into the city, went across the river. One of them, the smaller one, was attached to the bridge. The bigger main crossed the stream independently, further below (Figure 3.2.). For the most part, the larger pipe had a concrete shell protecting it. In the course of the mudslide, the smaller main had been damaged by the masses of debris coming down the stream, resulting in a big leak. When Guma started the repair work, the leak had been there for more than a month. Though, engineer Foday assured me that the pipe had been in a bad condition even before the mudslide. Numerous times, he said, they had had to weld the pipe there. He said, that was not surprising given that people walked across it and even urinated on it. The result was severe corrosion. Foday told me that now one should fix the leak urgently. Welding would not do anymore. They had to replace this entire section of the pipeline, he said. For the repair, workers from other stations had to be requested, not to mention the organization of a fitting piece of pipeline.

The actual operation took place on the sixth of October. I accompanied the workers during preparation and the works on the line itself. During this operation, I witnessed several things that did not work out or were something went wrong. The workers were frustrated not so much because of the repair work not going according to plan but because of the working conditions they had to endure. In particular, they formulated

concerns about safety. Foday, who was in charge of the operation in situ, was unhappy because the coordination of the whole process was long-winded and, in the end, flawed. The procurement of the right materials – in particular a fitting pipe section to replace the old, broken one – was a huge concern. In the following part, I will present and discuss my observations of the operation.

That very day, Guma's station West was buzzing. The "Juba leak," finally. Personnel and equipment were being mobilized. No other job allocations. We moved down to the leak with the full team of field personnel. The first thing to be done was to close a number of washouts further up the pipeline. This was necessary to empty the section of the pipe to be worked on. At the treatment works the valve had already been closed. But there was still a lot of water in this main. These preparatory works were impressive, when thinking about them in terms of dysfunction or disorganization. Here are a number of things that I observed. Firstly, the water that was released came out with extreme force. For the workers handling the valve, the opening was dangerous. Secondly, Guma's employees did not always know where the respective washout valves were. At times, it was mainly a matter of speculation, of having a hunch. I was quite baffled by this. There was no up-to-date map of the water system and its components. So it happened that one valve could simply not be found at all. There was too much bush grass. The group of workers moved to the next one. Thirdly, that next valve was in such a bad condition that it could not be opened. The workers had to move to another one. Fourthly, even though the operation had been planned for several weeks, not all sites involved in it had been prepared, that is made safe. One vegetable garden and one school building were flooded after the opening of two washouts. No sand bags had been laid out. There were also no significant countermeasures after the sites had been flooded.

That was a sequence of things not going 'according to plan.' Though, as it turned out, 'the plan' itself had not been designed properly. Talking to engineer Madonna, who led the group responsible for the washouts, I learned that many of these smaller steps had not been considered with too much attention because the whole operation was so hard to launch in general. Since the company was poorly equipped with large machinery and materials, she said, coordination of these means was difficult and much of the day-to-day work had to be done manually – literally by hand.

At the bridge and the broken main, a wobbly scaffolding had been built. It was supposed to carry the men working on the line from below. After the opening of the washouts, the actual repair work could not start for several hours because most of the

necessary materials had not been delivered yet. Foday sighed. Everything took too long. He told me that this was one of the main problems at Guma: the company was just too slow in reacting to situations as well as organizing necessary means. "Slow response," he called it. I left the site for an hour or two, to grab some food and make some calls. When I came back, it seemed as if still nothing had happened. Though, I noticed a big pipe section lying next to the river – the substitute piece. However, I was told that this piece of pipe, for which they had waited so long, did not fit. The issue with the part to be replaced was that it comprised end of different sizes. An additional coupler was necessary. For now, it was impossible to replace the damaged part. Instead of trying to organize another, fitting replacement or a linking component, the plan was now to return to welding – even though Foday had told me before that welding was not really an option anymore. The replacement of the pipe section, Foday told me, was now delegated to DfID, who would start a large-scale operation in March.

However, Foday added another reason for why he preferred the works to be postponed: the scaffolding. He feared that some of workers might get hurt, in case it would collapse into the river. Some of the workers themselves had expressed concerns about the scaffolding. As I sat down with them while everyone waited for the pipe section, they vented their anger. The scaffolding was linked with general concerns about safety gear, working hours and payment. The lack of proper equipment such as gloves, helmets and boots, was an especially sensitive topic (see also chapter four). Guma's management was suspected of corruption as well as ignorance concerning workers' needs. According to the welder Alex, there was no real interest in workers' needs, only occasional "lip service." "We, the workers, never have enough material." He told me that he was constantly running out of blades when cutting pipes. "How many pipes can I cut with one blade? Four? I work eight hours!" When confronted with these concerns, he said, management would usually dodge a proper answer or threaten the one addressing them. On the other hand, Alex pointed out, the workers should also fulfill their part of the contract. This concerned in particular the taking of bribes for 'illegal' connections. Thus, similar to Moses' statement, Alex framed the difficult and often dangerous working conditions faced by Guma's water workers as the result of ignorance on the side of the company's management.

Foday and his team stayed at the repair site well into the night. The work had to be stopped eventually due to heavy rain. When I returned to the bridge the next morning, Foday told me that a second pipe segment had been delivered for replacement. But this one, too, did not fit. The welders tried their best to fix the leak on the line. They

placed a thick additional layer on it, which stopped the water from escaping – at least for the moment.

Figure 3.2.: Juba Bridge with the two main transmission lines (photo taken by Lorenz Gosch)

The concerns regarding safety expressed by the workers at the bridge, reminded me of something I observed at the treatment works. Namely, when the lab workers realized that there was no chlorine in the water (which had theoretically already been treated), they went down to the hall where the canisters were. Together with a group of other staff members they put a new canister in place. These were moved to and fro, using a simple chain on a steel girder. The chain moved only with resistance as the wheels of the moving part are rusty. Considering that, as I was told, they were dealing with rather dangerous stuff there I was worried about this installation. After the new container had been placed in position, it had to be connected and opened. Everyone had to go outside until one could tell that no gas had escaped. I thought, no wonder the workers complained about lack of safety gear.

Problematizations from the management's perspective differed. When speaking to employees in higher positions, workers were commonly depicted as reckless. In particular, the consumption of alcohol and cannabis were formulated as an issue concerning safety. In regard to the treatment works, which figured in the first vignette, I witnessed a specific kind of suspicion. During an interview with Mohammed Koroma, Guma's production manager at central station, it became clear that there was considerable suspicion concerning working procedures at the treatment works. As he told me, some of those in managerial or leading positions thought that staff working at the treatment plant were hiding deficits in the technical treatment process or professional weaknesses. He said, furthermore, that one could not control whether they were actually doing their job at all. Due to the plant's remote location, it was, in a way, out of reach. Ironically, one time, when I arrived at the treatment works, I found the team assembled around a television watching a Hollywood blockbuster – a moment, as unsignificant as it may have been, that had quite an impact on my personal impression of how work unfolded inside the treatment worked.

Talking to other Guma staff at the company's headquarter in Freetown's center, I also got the impression that the administrative point of view was mainly about technical efficiency, staff included. I learned that Guma was "currently in the process" of looking for more qualified personnel. And, while I did encounter 'acknowledgements' of dysfunction and disorganization, these were by far not radical as some of the other evaluations I had come across; for example, that of engineer Richards[23] with whom I did an interview in the last third of my fieldwork. With him, I spoke about Guma's incapacity to measure the water both in terms of quantity as well as quality. In particular, our conversation revolved around the absence of water meters in all parts of the system.

(13.02.2018)

Richards*: Yes. We should be. (Generally speaking) You should have bulk meters … those domestic meters. The system needs to be metered. It needs to be.*

Lorenz*: But that would, of course …*

[23] Name changed.

Richards*: Because you need to have a meter at every outlet at each service reservoir, and a meter at Guma outlets, in order to be able to determine the quantity of water that leaves Guma. And that is not working …*

Lorenz*: I see. There is that big machine (measuring flow rate) at the treatment works which is not working.*

Richards*: Yeah, it is not working.*

Lorenz*: So, if I wanted to make a harsh statement, I would say: nobody really knows how much water is leaving Guma dam and what quality it has.*

Richards*: Yeah (with some frustration), you are right.*

Lorenz*: Hm. Because what we saw (at the treatment works) … not only can they not measure the quantity or the flow, they can also not … do bacteriological testing. And, I think at least three of the categories they were supposed to measure, every twelve hours or so, were also not able to be measured, right?*

Richards*: Right.*

One might say that I was asking leading questions. Yet, when speaking about the modalities of the interview, Richards emphasized that he wanted his name to be changed – for a reason. He was properly frustrated with the state of the system, which he tried to maintain on a daily basis. He made explicit, what other interlocutors of mine had only implied, namely that Guma was incapable of generating substantial knowledge of the water it was producing for the city. In other words, he made this incapacity an explicit issue by contrasting the state of the system with what he thought it was supposed to be. There was a strong sense of normativity in his depiction of how Freetown's water system did (not) function. "You need to have a meter at every outlet" he stressed. Others, such as engineer Moses, did not necessarily share this normativity; not as harshly as he did, that is. Moses indicated that, in the end, the system did supply the city with water and, at least at the treatment works, the water was clear.

It is worth noting that Richards and the other engineers had something of a position in-between workers and management. I noticed this, in particular, in the way they framed problems. While the workers were mainly concerned with the precarious working conditions they faced when working the system, management would point at workers' "reckless" behavior as well as deficits in terms of properly trained

personnel. Furthermore, there were suspicions on 'both sides.' In particular, there was an omnipresent assumption that Guma's managerial board was utterly corrupt and placed the wrong priorities. This would result in a neglecting of important matters including supply with materials and machines. This impression was widely shared outside of Guma, too (see chapter four). The company's engineers somehow fused the different perspectives together and linked them to the technical state of the system. They were forced to reconcile the concerns raised by workers as well as the Guma management *at a practical level*. In contrast to those working in the company's administration or management, engineers Moses, Madonna, Foday, Richards or Joe were not detached from the 'dirty' realities of the system. They went out into the field with the workers and depended on them to maintain the system manually. Sympathy for the workers' concerns was then not surprising. On the other hand, though, the engineers earned more than the ordinary workers or pipe fitters and represented the company's objectives. Because of their position in-between, I was especially interested in the ways they problematized the state of the water system.

Foday said that Guma's main problem was its slow response (time). What did he mean by that? In the case of the Juba leak, the company's incapability to react quickly and effectively became evident. The massive leak on the main transmission line had existed for over a month. There was a certain urgency involved. Foday himself had stressed several times how important it was to tackle this leak as soon as possible. One might argue that, in a context of general leakage (there were small leaks all over the city), a single large leak was not exceptionally dramatic. This would be an interesting mix between what I called contextualization and relativization. Be that as it may, since the leak was on one of the two mains, it affected the water system at a whole; hence a decent degree of urgency. Furthermore, in contrast to the myriad of small, hidden leaks, this one was visible, accessible and hence solvable – at least in theory. In terms of efficacy, the repair operation revealed certain difficulties in the coordination process. When, finally, Guma did launch its operation to fix the leak on the main, the pipe segment which was supposed to replace the broken piece, did not fit. As Madonna told me, the company was struggling generally with coordination and availability of means. This unavailability was also connected to larger and more complex intricacies regarding access to the global market. In situ, however, problematizations had a very local focus.

At Juba Bridge, many things did not work out during the repair operation and the operation itself was not well prepared. A fitting pipe segment had not been procured

and transported to the repair site before water was shut down; the opening of the washout valves was characterized by a lack of internal and external communication. In the end, a school was flooded because no measures had been taken beforehand. When, after long hours of waiting, an intact pipe was delivered, it did not fit. The leak had to be fixed by welding once again. On top of that, the whole process took far longer than expected – even though Guma's employees were used to long periods of time spent waiting. It seemed as if the harmonization or synchronization of information across the company's different bodies did not work well.

3.3. Summary

What may dysfunction mean in a context such as Freetown's water infrastructure? I have proposed to conceive of dysfunction not as a given condition but rather as a kind of problematization. The aim is not to argue that Freetown's water system worked flawlessly. It certainly did not. Yet, the ways that brokenness or ineffective coordination were interpreted and framed as problems differed. In other words: Problems varied because problematization is a form of interpretation. Even though working for the same company, Guma staff had different views on what the pressing issues were. There were also differences with regard to how severe the defined issues were in terms of their impact on the system as a whole.

The general approach in this chapter was to present certain parts of my ethnographic material, emphasize moments where things were broken or did not work out and discuss these against the background of dysfunction. Apart from this mobilization of my ethnographic material, I have engaged in a discussion of stereotypes. That is, when speaking of dysfunction in regard to an African infrastructure, there is something to be aware of. That is, there are powerful stereotypes according to which African infrastructures are necessarily and obviously dysfunctional. I encountered these stereotypes many times during my fieldwork, both in conversations with expats as well as locals. In the course of this chapter, I have discussed different styles of representation which may be ways of avoiding these stereotypes. However, while each of these styles – contextualization, reinterpretation and relativization – has its benefits, there is a certain incompatibility between them (especially the first and the latter two) and they come with risks. I have suggested to bracket a 'decision' between these styles or strategies and, instead, focus on the very acts of problematization. On the one hand, it offers a way of deploying the styles of representation as means to classify local

problematizations. In other words, they may serve as a helpful scheme to make explicit differences and emphases. On the other hand, this maneuver allows to create a productive proximity to my material and the statements of my interlocutors. My own problematizations are positioned next to those of others, so to speak. It offers, thus, a pragmatic way of handling my own interpretive viewpoint. This approach has already been established by a range of scholars in many different accentuations.

During the crisis of representation Johannes Fabian has, for instance, attested anthropology a denial of "coevalness." In his well-known *Time and the Other*, Fabian writes that "(a)s long as anthropology presents its object primarily as seen, as long as ethnographic knowledge is conceived primarily as observation and/or representation (…) it is likely to persist in denying coevalness to its Other." (Fabian 2014: 151f.). Seeking coevalness would then to root one's own position in the field in the process of ethnography (stressing the aspect of writing). It means to engage with the "simultaneity of different, conflicting, and contradictory forms of consciousness" (ibid.: 146). Taking into account the diverse problematizations delineated in this chapter, this appears quite fitting. A focus on acts of problematization could represent a very interesting way of deploying Fabian's concept. The aim is an emphasized presence of other accounts, not an absence of any interpretation – here problematization – other than my own.

Dysfunction meant different things in regard to Freetown's water infrastructure. There were contradictions, shifts of focus and one especially noteworthy relativization: Moses' remark that, even though the measuring regime did not work properly, the water was clear –indicating that the 'real issues' started down the line.

4. The Life of Pipes in Freetown

In her pioneering article on *The Ethnography of Infrastructure* Susan Leigh Star indicates that it "takes some digging to unearth the dramas inherent in system design creating" (Star 1999: 377). Since this chapter is concerned with pipes and pipe systems, I am inclined to take this phrasing quite literally. When I started steering my fieldwork toward Freetown's water system, I did not have to do a lot of digging. The digging was already done by the different actors I encountered in the field – figuratively and literally. Sometimes there was no digging to be done at all because certain parts of the infrastructure were laid bare anyway. Star's pointing to the "dramas inherent in system(s)" appears equally fitting. For, I am interested in problems as they were articulated when people – in this chapter especially Guma's water workers but also local plumbers or tinkering residents – experienced troubles regarding the water system's pipes.

These infrastructural dramas involved people as well as manifold environmental conditions and effects. Unauthorized and unplanned engagements (tinkering, using pipes for other purposes, driving over them) were a constant subject of discussion and problematization, especially so at the Guma Valley Water Company. Water is a bonding-friendly substance. It is good at dissolving and taking up stuff, pathogens or lead, for instance. Under such circumstances, water can turn into a potentially harmful substance. Speaking of tap water, the material form of the pipes is supposed to keep it from interacting with very lively (urban) environments. In many places around Freetown the pipes could not succeed in doing so. For, pipes led precarious lives in this city as they were highly exposed to different human engagements and environmental effects. This meant that the water being piped through the city made connections which were a major concern – in legal, epidemiological and political terms. In the course of this chapter, I will take a close look at the life of Freetown's pipes regarding exposure, and the ways this matter was articulated as an issue.

In the previous chapter, I referred to Guma-engineer Joe who indicated that the 'real problems' concerning the piped water began further down the line, namely when the water reached the city. Here I engage with what occurred further downstream. At the core of this chapter are problematizations that revolve around the boundaries of Freetown's infrastructure as well as the kind of work that needed to be put into the system to sustain its functional character. Leakage and unauthorized, 'illegal' connections all over Freetown caused a loss of water and posed a threat of contamination. Alongside valves, pipes figured here as an embodiment of the

boundaries of the water system. At a concrete, practical level, they represented those infrastructural components that were engaged with most of all. It was the pipes which rendered the water system most vulnerable regarding loss of water and risks of contamination. They were sites of intense engagement and negotiation, and they were more generally exposed to the urban environment and climate. As I will show further below, pipes were also sites of projection: In the acts of problematization, they indexed larger concerns. To this effect, pipes served as productive sites of ethnographic scrutiny.

The diverse engagements with pipes were made an issue on a daily basis. This issuefication took place in an overall situation, that was complicated and extremely tense. There was a constant concern about the city's water crisis. At the time of my fieldwork, water rationing had been established for several years already, both during the dry and the rainy season. Guma was not able to supply Freetown with sufficient water. The company's facilities had long reached their productive limits. In addition, large amounts of water were lost due to widespread leakage. No one knew, however, exactly how much water was lost. There were no numbers, because it was almost impossible to measure leakage. Furthermore, the system was impossible to monitor. Leakage was not only due to unintended environmental effects (damages due to traffic or corrosion, for example) but occurred also through spontaneous cutting to fetch water. Those engaging with the system's pipes 'illegally,' were of the opinion that in a context such as Freetown, where water supply was managed by a corrupt and/or incompetent parastatal company (Guma), one had to organize supply by oneself. Guma had a very bad reputation in Freetown (see section 4.3.). This reputation served as justification for all kinds of 'pragmatic' albeit unauthorized interactions with the water system. The infrastructure was as much shaped by opportunism as by ordinary maintenance works. In the middle of this were the water lines and valves, with their materiality and social life. Guma's workers were in a tight spot to look after these sites of engagement.

Every day, Guma's workers set out to detect and fix leaks, make new connections, and protect the integrity of 'their' system. There was a lot of manual work involved, usually under difficult conditions. At the same time, others – sometimes those very workers (off-duty)[24] – worked on the system to manipulate it, making their own 'illegal' connections. The result of this parallel activity was a kind of competition over access.

[24] Michael Degani (2021) has noted something similar in his work on electricity infrastructure, that is state company electricians fixing connections as well as tinkering with the electrical grid.

Guma employees often expressed their frustration about this and sketched out different problems concerning the situation at hand. Apart from problematizations of the infrastructure's boundaries (as being under attack constantly) workers frequently pointed at the difficult conditions they had to navigate while working the system. Lack of adequate equipment, dangerous handling of materials, low wage – these matters fed into a second kind of problematization. Problematizing the condition of the boundaries of Freetown's water system went along with the problematizing of working conditions, especially when pipes were involved. The two problematizations were highly intertwined.

Taking this into account, my approach toward water infrastructure brings together infrastructural problematization and practice in the sense of manual labour or work. I place particular emphasis on manual work regarding the boundaries of the water infrastructure as I will look at how the system was made and unmade on a daily basis. This is also where the notion of boundary work already deployed in chapter two comes in handy. By this, I refer to acts of engaging with a system's boundary lines. On the one hand, this involves measures to maintain and protect the infrastructure in its structural and functional composition. On the other hand, the notion includes forms of infrastructural 'intruding' or a kind of 'trespassing,' too; informal tinkering with water connections for example. Thus, boundary work, as I deploy it, is mainly negotiation and friction.

The precarious social life of pipes was an aspect of life in Freetown which could hardly be overestimated in its importance. What happened to pipes and who had access to the system were major concerns in this city. Getting a better understanding of this situatedness of pipes, their conditions so to speak, hence provides a good basis for thinking about more general problematizations in Freetown. These were large public issues or concerns which were negotiated in TV and radio shows, newspaper articles and during political sessions. Freetown's urban growth was a topic of this sort. Destruction of the environment or rising erosion risks against the background of climate change were, too. Water was involved in many of these large-scale problematizations.

My ground-level take on Freetown's water infrastructure focusing on practice and problematization also sheds light on how I conducted my fieldwork. That is to say, this was the aspect of Freetown's water system which I came to know best. I spent large parts of my time in the field roaming through the city with Guma's water workers. After having obtained the permission to conduct fieldwork among the

company's personnel, I spent time mainly at Station West, located in the district Wilberforce. At the station, I was taken under the wings of Gabriel Foday (introduced already in chapter two). He was employed as a senior engineer and played a crucial role in the routinized and not-so-routinized work on the water system in this part of the city.

My days with Guma would usually start around eight in the morning. That was the time during which the job allocations had to be worked out. That is, what tasks had to be done that day, who would be deployed for what task, what kinds of tools and materials were necessary for the respective job, and so forth. Implicit in this was the making of the route the vehicle would take. Most of the days, there was only one pickup van which could be used to dispatch the workers. Hence, after the allocation process, a large group of workers, ten to fifteen, populated the loading space of the van. The crew then headed into the city with reference to a hydraulic geography which only water professionals knew more precisely in terms of its systemic makeup.

On the fieldtrips, I witnessed different engagements with and conditions of pipes. I saw a lot of connections being made, and I saw connections being cut. Discussions took place with complaining, sometimes furious, residents and customers. I also witnessed local plumbers make unauthorized connections or a group of adolescents severing a pipe with a stone to tap some water. With Guma, I saw how valves were opened and closed; pipes dug out and covered in all kinds of debris that was at hand. Finally, I also participated in a lot of waiting: For tools, for people, or for the vehicle to pick one up when a job was done. As I mentioned above, most of the days there was only one vehicle (and usually another one for more specific tasks such as the turning of valves as to regulate water rationing or necessary trips to the centre for meetings with Guma's management). Thus, workers sometimes had to wait for an hour or more until being picked up. The moments I spent waiting with the workers were valuable in the sense that they offered moments during which we could talk casually. The workers would sit or lay down, relax, listen to music, eat and chat. They would share their opinions on different topics as well as concerns about their daily work. Among other things, they mentioned the dangers and difficulties of working with pipes.

The pipes which I came across during those trips were of various kinds. I arrange them here in three categories. These figure also in the illustration of the table of content. My classification is based on a techno-social perspective on pipes. I want to draw attention to their social lives, i.e. how they were exposed to and appropriated by other actors than Guma's personnel. Engagement or exposure took place precisely *because* of their

specific technical or material properties. The technical and the social were highly intertwined. Access to and distribution of water was negotiated through pipes. As such, the different lines were socially intense sites, each type with its specific forms of interactions. Engaging and thinking with pipes through a techno-social lens, I identified the following three categories: (1) Main transmission lines, (2) sub-mains, and (3) PVC pipes or "spaghetti connections."

There were two *main transmission lines*. The older one dated back to around 1965 – the time the Guma Dam was put into operation (not being commissioned until 1967). It was an 18-21inch pipeline that ran above the ground most of the time. It had a black, worn-off bitumen coating. Signs of corrosion were to be seen in many spots. The second, more recent and bigger main transmission line was 28inch and most of it ran underground. It only poked out here and there. The two connected the treatment works at Mile 13 nearby the Guma Dam with the Spur Road Reservoir which was already far inside the city. They ran almost parallel to each other, occasionally being linked through cross-connections. Wherever the small main was, the bigger one was not far, yet not necessarily visibly so.

What I call the *sub-mains* merely applies to the whole class of smaller metal pipes – most of them around 5inch – that distributed water across the city after the first reservoir. As I will show further below, there was a constant issue of keeping these out of sight or reach from people unauthorized to interact with the system's components. Private household connections were drilled into these pipes. The households were then connected to the system via the third class of pipes: The *PVC pipes*, most of them blue though sometimes in black, represented the absolute standard of being connected to the water system in Freetown. These did not only connect single households to sub-mains but also to community taps. The city was filled with them. One could spot them at every corner, underneath and along sidewalks and of course in gutters. Most of the time, they showed up in groups and intertwined, wherefore the Guma workers referred to them as "spaghetti pipes" or "spaghetti connections."

The three types of pipes led different lives. That is to say, they faced different environmental conditions and they were also approached with different practices; which is also to say that the water inside made different kinds of connections. In many places across the city the different types of pipes shared the same space (Figure 4.1.). Especially the PVC pipes tended to run adjacent to bigger metal pipes for reasons of pragmatic spatial organisation – the same reason for why they often ran through the gutters. However, the pipes differed in regard to their perceptible presence in the city.

Figure 4.1.: The 18-21inch main being accompanied by “spaghetti pipes” (photo taken by Lorenz Gosch)

In contrast to the sub-mains, most of which were fairly well hidden, the PVC pipes were a ubiquitous and highly visible entity around the city.

Retrospectively these degrees and effects of visibility remind me of a characterisation of Matthew Gandy's: "The distinction between visible and invisible domains becomes especially apparent in the "horizontal cities" of the global South, where in Arjun Appadurai's words everything is "fully available to the gaze. The relative absence of water infrastructure is paradoxically reflected in a jumbled landscape of pipes, open sewers, tankers (…), water vendors (…), and buckets." (Gandy 2014: 6). Visibility may provoke different kinds of problematization. Freetown's water infrastructure was highly present to the urban gaze and hand, so to speak, and this was an object of constant discussion and issuefication in the city.

4.1. From Infrastructure to Infrastructuring: The Making and Unmaking of Water Systems

This section discusses different approaches to infrastructure. I will discuss the conceptual shift from infrastructure to infrastructuring. The latter places emphasis on the processual and practical nature of infrastructural systems. An approach such as that works particularly well with my focus on problematization. On the one hand, problematization was part of the everyday work of Guma's water workers. They had to maintain a system of pipes that was highly exposed and expressed their views on this fundamental situation. They had to do so with limited means and under difficult conditions, which they also articulated as an issue. Furthermore, Guma staff also had to interact with residents, some of whom were not happy about the city's water system and the company managing it. Problematization was an integral aspect of Freetown's water system and it was tied to a range of practices.

(02.10.17)

We rolled out in the pickup van and dropped off teams of two or three workers here and there along the route. That day, most of them were supposed to repair leaks. The remaining people in the van drove down the highway, further South. We arrived at a fishing community which was still part of Goderich. Speaking about the water situation in this area I learned that the communities along the highway, on the outskirts of the city, were actually positioned before the Spur Road reservoir and hence received water almost directly from the main transmission lines.

Yet, as Foday pointed out, there was no effective way of regulating the pressure sufficiently. Thus, in the long run the high pressure damaged the sub-mains diverging water from the mains at this point. He also indicated, though, that an additional reservoir for exactly this purpose was already planned.

Having arrived at the community we got out of the car and walked around. Foday wanted to inspect the state of the large sub-main that carried water into the community. For the most part it ran below-ground. However, time and again it came to the surface. At a crossing, in the middle of the street, it poked out of the earth and we discovered a leak. We surmised that it had been caused by cars going over it. Foday explained that most regularly, such damages did not occur due to a single moment but in the course of constant contact which led to increased corrosion as well as direct detriments. While giving me a crash course on the life of pipes in Freetown, he also spotted a number of unauthorized connections. Foday called them spaghetti connections and I found the name to be rather fitting. More and more I became aware of the omnipresence of the cheap blue pipes that meandered through this place and all over Freetown, usually in messy and promiscuous groups. Foday drew my attention to the poor condition of many of these spaghetti pipes. He pointed out that these connections and the ways they lost large amounts of water across the city impaired the system's pressure regimes – apart from simply wasting water. This compromising of pressure meant that all those connections further down, i.e. 'after' received less water and less reliably.

Having checked on the leaks on the sub-main we walked over to the crossing where the workers had already begun preparing connections. That is, they had excavated both the pipe as well as the respective valve a bit further up the road. Next to the pipe was a sheer mass of spaghetti pipes, most of them authorized I was told. Each of the pipes belonged to an individual household. Exactly which pipe belonged to which person the Guma workers did not know. Foday commented: "We don't know people's connections." Accordingly, customers had to show up themselves to identify the pipe that was to be connected or repaired or replaced in case it had been cut. I noticed that the owners had labelled their pipes with paint or little tags, that is plastic frazzles. The workers pulled out a device they called the drill (box). It consisted of two main parts: A chain with strong lock links and the actual drill head with a levering mechanic. The former attached the latter to the pipe and held it in place very firmly. The drill head was then screwed into the pipe manually. The act needed quite a bit of strength (I was convinced to try it out later that day). Also, if the valves did not close the connection sufficiently, water rushed out as soon as the drill had penetrated the metal. One had to push it further then, against the sometimes intimidating water shooting out. The valve itself had been built just a week before. Otherwise, one would have been forced to shut down the whole community in order to being

able to make the new connections; something that was often the case especially owing to the fact that many older valves were either buried in places no one knew about anymore or did not work properly.

After the holes had been made, connections were made, though on the hardly accessible side of the pipe (in order to guarantee that unauthorized people would not be able to access them easily). That made work difficult. The workers had to do this twice – including the whole excavation – as afterwards it turned out that water was leaking from one of the new connections. I thought this to be lucky as the Guma workers were still there to correct the matter, guessing that in many cases this might not be the case.

The vignette above offers an impression of two things. On the one hand, it depicts a typical situation and aspect of how Freetown's water system was *made* on a daily basis. In this sense, the focus here is on the very practical aspect of infrastructure. Water connections had to be made, repaired or cut. This involved considerable amounts of searching and digging. Valves had to be located in order to be opened or closed. Pressures had to be estimated. Materials had to be organised or improvised. Much of this work had to be done manually, i.e. by hand, because Guma was not equipped well in terms of machinery and tools. On the other hand, the vignette offers an impression regarding the situatedness or embedding of the water system within the environment. Pipes did not just run through Freetown's urban landscape. They were part of it and as such there was considerable interaction or rather exposure.

Matthew Gandy writes that "(w)ater lies at the intersection of landscape and infrastructure, crossing between visible and invisible domains of urban space." (Gandy 2014: 1). Landscape and infrastructure form an interesting pair: In practice they do not necessarily have to be distinct from each other. In Freetown, I noticed on a regular basis that infrastructural components – mainly large pipes – figured as ordinary parts of the landscape. People walked on and drove over pipes. Sometimes they even built small houses on the main transmission lines. Pipes were an influential – often quite visibly so – factor concerning the city's spatial composition. Spaghetti connections were sprawling at every corner and, in doing so, provided a part of the frame and a continuous thread to experiencing the city. In short, the different kinds of pipes had a huge impact on how residents perceived the city in spatial terms. Brian Larkin writes, for example, that infrastructures "generate the ambient environments of everyday life" (Larkin 2013: 328).

At the same time, the two are supposed to be distinct and separate from each other. As I noted earlier, I conceive of pipes as the boundaries of water infrastructure: The material form of the pipe as the line separating the water (system) from the environment. The water flowing through the pipes provoked problematizations regarding the pipes' specific situatedness. Water can be a driver of social processes such as conflicts over access or measures to limit the spreading of infectious diseases. It calls boundaries into question. It may leak and interact with a pipe's environment. Water may thus raise issues regarding the spatial and social location of pipes within a specific environment. In this sense, I suggest that water produced a tension between landscape and infrastructure in Freetown. This tension was quotidian, it was politically charged because it raised different issues. Who had access to safe drinking water? Whose bodies were exposed to dirty water? Who was to be held accountable for the different kinds of leakage? The tension between landscape and the city's water infrastructure pointed at inequality, neglect, belonging and access. It had a considerable influence on life in Freetown.

The (in)visibility indicated in Gandy's statement is directly related to the tension between landscape or environment and infrastructure, as it is sketched out here. If the pipes of a water system are "fully available to the gaze," as Gandy put it, they are of course more accessible than when they run below-ground. Accordingly, this might not only apply to the gaze but the hands as well. This will of course depend on the type of pipes – high pressure may render unauthorized access simply impossible. Freetown's main transmission lines could not be tapped. Submains could however, and the spaghetti connections could easily be cut as they meandered in groups through gutters, along streets, through cracks. Visibility had to do with accessibility which, in turn, had to do with authorization. The latter was an object of conflict and negotiation. Tinkering with the components of the water system was illegal; a crime, however, which usually was not persecuted. On the one hand, this had to do with the sheer mass of such acts and limited means of persecution (also, the concrete situations were often vague in terms of accountability). On the other hand, many of the Guma workers were empathetic with those accessing the water system. In the end, I was told regularly, water was life, and many people were struggling to survive. Accordingly, many were looking for opportunities and, as I mentioned above, the water system was open to the gaze.

Speaking of seeing and identifying things: The spatial and social accessibility of water infrastructure (at least certain, vulnerable parts of it) raises the general question of

what an infrastructure is and should be. A focus on exposure as well as the practical making of Freetown's water system gives the notion of infrastructure a certain twist. My approach toward Freetown's water system is influenced heavily by recent works on infrastructure which offer a range of conceptual tools and formulations for such undertaking. These works accentuate process, practice and change. Infrastructures then do not appear as stable, passive structures but as malleable, vibrant and relatively fragile arrangements. This trend concerning the study of infrastructure has been delineated nicely by Sandra Calkins and Richard Rottenburg:

> Where an earlier generation of scholars was captivated by the systemic character of infrastructures often in relation to particular polities and above all sought to explain their material recalcitrance (…), newer work tends to rather emphasize their fluidity, openness, and adaptability to different material politics and traveling technologies (…). (Calkins and Rottenburg 2017: 254).

So, on the one hand, the shift of emphasis aims at the actual constitution of infrastructure, daily infrastructural work so to speak. This includes different kinds of boundary work, that is the kind of work necessary to demarcate and stabilize the system in or against its environment. On the other hand, it draws attention to those actors not usually or traditionally associated with infrastructure but which may alter its constitution. These may include local plumbers or environmental effects, for instance damages on water lines caused by cars. Overall, the aim is to produce rich accounts of infrastructural systems which allow for a close view at the concrete conditions and situations which make and unmake them.

For example, considering Mumbai's water system, Nikhil Anand writes that "(t)his infrastructure is a living, breathing, leaking assemblage of more-than-human relations. It is composed as much of steel and cement as "nature," laws, social histories, and political practices. The surfeit materialities and socialities that have accreted around modern water distribution infrastructures in the city not only assist in but also perforate, interrupt, and sit alongside powerful efforts to constitute liberal cities and subjects in Mumbai." (Anand 2017: 6). His emphasis on the organic character of Mumbai's water infrastructure emphasizes the way such systems are "always falling apart" (ibid.). The accentuation particularly applies to the precarious life of pipes, in both Mumbai and Freetown. As sites of engagement, pipes embody and indicate the organic being of water infrastructures in the city. They may be exposed to pressures and engagements of various kinds. Even if made of metal, their constitution does not necessarily remain unchanged for long. As I indicated in the vignette, new connections

to the water system were made by simply drilling a hole into the respective line (Figure 4.3.); the connections themselves, meanwhile, being often short-lived. Summing up, due to their embedding in environments which produce their own, very specific constraints, infrastructures are, as Anand frames it, "not smooth surfaces that perform as planned; instead, they are flaky, falling-apart forms that constantly call out for projects of management, maintenance, and repair that challenge projects of human knowledge and control." (ibid.: 12).

Anand's note on the necessity of management, maintenance and repair measures underscores the emphasis on practice under conditions of uncertainty or precariousness – partly caused by water. While Calkins and Rottenburg point out that both 'generations' of approaches assumed that infrastructures "are not clearly bounded entities out there but relational configurations that unfold from practices and interpretations (…)" (Calkins and Rottenburg 2017: 254), the difference lies in the placing of emphasis regarding the dichotomy of structure and process. They note that "(i)n line with turns to practice theory and pragmatism, recent ethnographic engagement with infrastructures attended more to the practice of doing infrastructure – i.e. to infrastructuring in the verbal form (…)." (ibid.).

In terms of practice, infrastructures are extremely vibrant. That is why the notion of infrastructuring is so alluring (see also Pipek & Wulf 2009, Escobar 2017, Carse and Kneas 2019). Among other things, infrastructures may affect time and day planning as people are being forced to structure their days according to moments when there is water (Anand 2017: 122, Appel 2018). Infrastructural interfaces may also spawn habits, norms concerning body form and hygiene (Gandy 2014), or specific body techniques to use them (Larkin 2018). They "shape the rhythms and striations of social life" (Appel, Anand and Gupta 2018: 6). At the same time, infrastructures are made and unmade on an everyday basis. Infrastructuring comprises both, what these systems do and what is done to them. In the light of this conceptual shift, they appear as arrangements in a constant process of cohesive as well as dissipating situations. Infrastructuring emphasizes the aspect of negotiation, too.

AbdouMaliq Simone writes that "(i)nfrastructure exerts a force: not simply in the materials and energies it avails but also the way it attracts people, draws them in, coalesces and expends their capacities." (Simone 2015: 375). The fact that everyone needed water was the reason for why Freetown's water system was opened up and appropriated on a daily basis. Human beings filled the gaps left by a water system that was not made to supply more than a million people. Apart from exploring and

producing alternative sources, residents would manipulate pipes and taps as well as transport piped water to places where the system's pipes did not reach. On the other hand, it was also residents who had to reflect on the situatedness of pipes in order to assess the safety of water (see chapter five).

What are the benefits of infrastructuring vis-à-vis infrastructure? And what role does this play in the present text? Of course, it is not really about the two terms but rather about the specific approach and conceptual preferences these come to express. One might as well just redefine the notion of infrastructure – that is a matter of taste or style. This said, there are three points that render infrastructuring a productive idea regarding this study.

Firstly, while older approaches toward infrastructure did address the subject of the relation between infrastructure and power, the notion of infrastructuring, i.e. the trend it implies, pays much more attention to the small practical, possibly everyday details of the kinds of technopolitics wielded by such systems. Newer approaches tend to follow Harvey, Jensen and Morita's proposal to draw "attention to the silent, unnoticed work done by infrastructures" (Harvey, Jensen and Morita 2017: 3). A water meter, for instance, may carry a massive political charge and may turn into an arena of intense tension (von Schnitzler 2016). Or, toilets may become symbols of inequality and spark unrest (Robins 2014).

Secondly, and methodologically speaking in terms of doing ethnography, I would suggest speaking of infrastructuring since this is closer to the diverse and concrete engagements that the ethnographer witnesses while being in the field. Infrastructuring, as I deploy the notion here, indicates the complex and complicated process and arrangement of which the infrastructural system in its concrete form is the outcome.

Thirdly and most importantly, the notion of infrastructuring aligns well with my focus on problematization. Freetown's pipes were sites of infrastructural boundary work and negotiation. Guma's water workers had to place, connect, repair and safeguard the pipes of the system they represented. They had to do so under difficult conditions and with insufficient equipment. The workers often made remarks about this. They problematized their own work, the system they were supposed to maintain and the constant unauthorized tinkering of local plumbers and opportunist residents. In other words, problematization was omnipresent in their everyday work.

The state of the water system, in particular the pipes, was also problematized by residents. Some customers were angry about their connections being cut – by other residents or Guma itself (by mistake or because of unpaid water bills). Others would raise the issue of contaminated tap water, namely by pointing at the condition and situatedness of the Guma pipes (see chapter five). Finally, Guma's reputation also provoked criticism and forms of problematization. When speaking to residents about the water company, they would often indicate that 'the main problem' was not what people did to the system but that Guma was corrupt or incompetent; or both. This view was also used as legitimization for 'illegal' connections. It was coupled with the general perspective that Freetown was a lawless and chaotic place that punished those who did things the formal or official way. In other words, the state the pipes of the water system were in served as a justification for opportunism and ulterior activities. Problematization was tied to practices of different kinds.

Everyone in the city was very aware of the precarious life of pipes, their exposed situatedness. It was impossible not to see the leaks on the lines, the dirt surrounding them, the opportunist moments of fetching water where there was no tap. Though, it was also a fact that water did flow through most of the pipes. Not always and not in reliably safe ways, but the system worked. Plenty of work on the ramified and nested system of pipes, valves, and cross-connections (as well as diverse other locations such as offices or the treatment works) was necessary for this.

Taking these things into account, pipes were not just sites of practical engagement but of problematization, too. I have said that infrastructuring places emphasis on negotiation. Problematizations of the life of pipes and the larger concerns these indexed were a form of negotiation. They were expressions of claims to truth and made explicit contradiction. My notion of problematization is pragmatist in the sense I focus on articulations of connections, difference and contradiction. Different kinds of large-scale issues came to the fore in the smaller acts of problematizations concerning the precarious everyday life of pipes. Large-scale concerns were about belonging, power relations and citizenship. This applied, most of all, to slum communities such as Susan's Bay, which will figure as the ethnographic location of the next chapter, and where I engage more with problematizations of residents.

In the next section, I will take a closer look at the work necessary to sustain the system. I am inclined to refer to this work as a type of boundary work. This was a drawing and reproduction of lines that constituted the water system as exactly that: A coherent and relatively stable, functioning system. This boundary work and problematization went

hand-in-hand: Both were especially prominent in the everyday work of Guma's staff going out into the field. The company's water workers had to adapt and improvise on a daily basis. They had to navigate the precarious situatedness or life of (their) pipes and find a way to sustain the function of the overall system.

4.2. Laying Pipes, Banging Pipes, Tossing Pipes – Improvisation and Working Under Difficult Conditions

This section addresses the concrete, everyday making of Freetown's water system in terms of its pipes. I present a substantial amount of ethnographic material which illustrates the challenges Guma staff had to face when working on the system in the field and how they formulated these as problems. So, while the previous part engaged with the life and situatedness of pipes and general thoughts on infrastructure, I will now turn more extensively to manual work and the kinds of problematization tied to it. The section aims to show what precarious working conditions meant in concrete terms. I will furthermore elaborate on forms of improvisation under precarious conditions. The key phrase in this context is "engineering without design" as my interlocutor Foday put it: How to make do with insufficient means and in an environment that poses several challenges and constraints.

(09.02.18)

This day Foday had a big truck at his disposal. With it he wanted to transport pipes to one of the big construction sites. There, a new street was being built which meant that Guma had to cooperate with the company constructing the actual street and the gutters at the side. Almost all the workers came with us, crowding the large cargo area of the truck. Speaking about the state of affairs at the construction site, Foday said that one was at phase two now. That was to say, now they had to lay the pipes. Somewhere along the highway we made a short stop to pick up some fifty pipes, sub-mains. The construction site itself was bustling when we arrived. A variety of vehicles and people moved here and there. The street to be built was quite long. The area's red earth was so dominant here that I did not really feel like we were still in the city. At some spots people could be seen breaking parts from the large boulders the construction site had produced. Foday explained that these people would collect the smaller pieces of stone and sell them on the other side of the peninsula, around Waterloo. On that side this type of rock was not to be found but was needed for the construction of house basements. Foday, meanwhile, was not as much concerned about the appropriation of the rocks but about pipe theft. He told me that some of 'his' pipes had been stolen after he had stored them overnight in a little courtyard. The

thieves would usually quickly sell them to welders or other metalworkers in the area or cut, paint, and then sell them for different purposes to residents. As soon as the pipes had been laid out and connected, Foday assured me, they would not be easily stolen anymore.

By now, the truck had found its destination and the workers jumped down and dispersed. Four men got busy handling the pipes. Two on top of the truck's cargo area and two down on the ground to receive the pipes. I knew that the pipes were very heavy, maybe around 150 kilograms. Accordingly, I was quite shocked when the workers decided to just drop the pipes on the ground. Hitting the ground, they gave loud metallic roars. Some of them did not just fall and stayed at their place but bounced in uncontrolled ways. The situation became particularly volatile when one pipe fell on another and made a chaotic jump. Twice, one of the workers, standing on the pipes still on the truck, almost fell down as the remaining pipes started to roll. Communication between the four men also did not quite work out. Sometimes the tossing men would drop the next pipe too early, namely while the other two were still dealing with the former pipe. They had to draw aside quickly. Foday came in telling them to be careful but his urge did not seem to have a lasting impact.

Just a week earlier, we had spoken about safety measures and equipment and Foday had defined it as a pressing issue at Guma, in Freetown more generally. Workers did not have any safety gear at all: No proper boots, glasses, helmets, overalls, and no gloves whatsoever. This was an obvious problem since handling heavy pipes or valves could easily produce contusions. Somewhat fittingly, Foday and I had attended to a workshop on precisely this subject just a couple of days before. The event had been held by SMEC, a "global engineering, management and development consultancy."[25] The instructor had demanded several things from the workers (for some reason he was very obsessed with the dangers of okada[26] riding (motorcycle taxis)) but among them was adequate clothing and gear. Ironically, the workers themselves – those doing the dangerous tasks – were not present at the workshop as it had been exclusively for senior staff – those who were not directly involved in hard, manual work. Furthermore, the whole event had appeared to me rather cynical as the workers did not receive these items from the company and buying these from their own money was too expensive for most of them. Also, SMEC did not leave the employees of Station West with any equipment but mere advice. When I approached one of the senior workers, asking him about this contradictory event, he told me that these organizations only very rarely hand out tools or clothing. So, the workers I was

[25] https://www.smec.com/who-we-are/about-us (last access 08.12.2020).
[26] Motorcycle taxis with a reputation of being dangerous, since the riders went fast and took risks.

observing now and who were handling heavy stuff on an everyday basis were more or less stuck with what they had: Most of them wore flipflops, shorts, and T-shirts.

The handling of pipes that I witnessed while spending time with the water workers pointed at a constraint, namely at the issue of doing dangerous work with limited and, above all, improper tools. The laying and connection of the submains was potentially dangerous work because workers did not have adequate equipment – both in the sense of safety gear as well as tools. This was an important aspect of the daily infrastructural work, and something frequently addressed by the workers. As a kind of proof, some of the workers showed me scars or bruised fingers. Workers did not have gloves, helmets or safety boots as was already mentioned in the vignette. The company did not hand these out and buying the gear privately was too costly. As far as I could see, workers had their own ways of coping with low wages and hard work. Apart from side jobs (at times working 'against' their own company), discipline at work was handled in a casual fashion, especially in terms of time and rhythm spent working. There was a relaxed atmosphere both in the field and at the station. Even though instructors or authorities such as the instructor from the workshop strictly prohibited it, workers got high at work or drank alcohol (they also used *okadas* at times to get from A to B).

Another kind of risk concerned interactions with residents. While access to safe tap water was a concern all over Freetown, communities which experienced severe water shortages or were simply not well-connected to the Guma system were particularly charged. Workers had a good sense of which places could involve trouble and some of them told me stories of how residents threw stones at them or attacked them head-on. Accordingly, every time when having to enter these communities, Guma staff had to evaluate the risk of conflict. This was however not a formal process but rather a kind of communication in-between regarding reputations of the respective communities and single individual households that could mean trouble. During the time of my fieldwork, I did not witness any physical confrontations, yet it was common that furious customers would come and argue with the water workers, when their connections had been cut or did not supply water for other reasons (or residents who were frustrated with water supply in the city in general).

Taking these things into account, Guma's field workers had to navigate difficult conditions posed by the city. I noticed that there was not just an openness of 'the system' to be found when tracing Freetown's pipes but also an openness in the work of the Guma staff. This was not necessarily a negative type of uncertainty. Rather, I

thought of it as a necessary flexibility. Improvisation, creativity and adaptability were key. Knowing the system was also part of this; not in the sense of knowing the structure of the system in absolute terms but rather in the sense of being familiar with regular interferences and the kind of organic being and becoming of the system in the city. These were aspects of working the water system that engineers and the other workers had to come to terms with.

Foday expressed several times how important it was for him to go out into the field. That way he would know about the acute state of the system. Furthermore, he underscored that he was an engineer and not a manager. He preferred going out into the field instead of staying at the station for organizational purposes or regular workshops. After the SMEC workshop mentioned in the vignette, he was quite frustrated because participating in the event had kept him away from his "real" work. There were plenty of practical issues calling for his attention. Accompanying the engineer and his team on his trips into urban Freetown, I got an impression of the kind of creativity and improvisation that was necessary to accomplish the different tasks. Foday knew the system well in practical terms. He navigated the city like a wirewalker of infrastructuring, so to speak.

Speaking of knowing the system in practical and social terms, consider the ways a water or electricity system is visualized and referred to. As Andrew Barry writes, "(o)ne of the commonest representations of infrastructure is a map of a network. In this image, an infrastructure is a set of connections and nodes that makes the movement of people, information and materials possible. It is the base through which things flow." (Barry 2017: 195f.) One should add to this depiction something that Barry did not make explicit when mentioning the representational life of infrastructure: Such maps usually do not make explicit the infrastructure's environment. The technical maps I came across did not include categories or parameters for characterising or typologizing environmental characteristics. This was something the engineer or other water professionals had to add by drawing on their experience in the field. For example, before going out, it was important to know certain things about the community where work was to be done. Important information concerned important persons in the community, earlier confrontations or materials and craftsmen that could be drawn on in situ. In addition, the engineer in charge had to be up to date regarding

recent (dis)connections and pressure issues in that area[27]. Talking to Foday I noticed that the infrastructure's environment was woven into the representations en passant and often implicitly.

In a way, engineer Foday and his colleagues were bricoleurs. They adapted to situations and conditions and were creative in using features of the environment. The concept of bricolage was made famous by anthropologist Claude Lévi-Strauss. Considering the concrete work on water lines in Freetown, it is interesting playing with Lévi-Strauss's notion because it highlights the specific challenges and skills involved. Here is how Lévi-Strauss started the conceptualization of the term: "And in our own time the 'bricoleur' is still someone who works with his hands and uses devious means compared to those of a craftsman." (Lévi-Strauss 1966: 16f.). The word "devious" appears particularly fitting regarding the work with pipes I witnessed since Guma staff often used materials that seemed rather coarse in the context of a technical, infrastructural composition. Guma's water workers often used materials and techniques which might appear 'inappropriate:' Boulders to support pipes, metal rods used raw or being converted into custom-made instruments, plastic bags to shield or mark or as means to position sealing rings, wooden planks to sit on while working, old wire picked up along the way. And, while doing so they usually expressed discontent about the lack of appropriate means such as proper sealing rings. By means of the "devious" they made the system work nevertheless. Foday and his team were extraordinarily good at finding such unintended means as may become clear from the following fieldwork observation.

(24.11.17)

They continued the laying of sub-main pipes, three- and four-inch pipes. The blue ones, Foday told me, were from China and of substandard; the black ones from Germany and of best quality. That made me think about quality narratives of the late 19th century and how persistent respective stereotypes may prove to be. "Made in Germany." The workers, meanwhile, had started digging the ditches for the pipes to be placed in. I learned that, working with ductile iron pipes, one did not actually have to make these ditches perfectly straight because these pipes could be placed slightly flexibly due to the rounded joints. So, when putting them together one can create small curves. The older galvanized pipes, in contrast, proved to be much more inflexible when connected. Laying the pipes, the workers used gaskets and lubricant.

[27] Antina von Schnitzler has noted something similar when writing about water metering in South Africa: "Here, a particular form of local knowledge–of residents' habits, consumption practices, and intrahousehold relations–was of central epistemological value (…)." (von Schnitzler 2014: 343).

Everything went at a quick pace. I was struck, though, about the method of connecting the pipes with each other: To couple them properly the workers used another pipe to knock them into each other. They were banging the pipes. The rhythm was: Twice "come!" and then once "Eh, stop!". Brief reminders to watch their fingers. Then, if necessary, another one or two knocks.

After they had laid some fifteen pipes a river was to be crossed. It was a small stream with a tiny bridge leading across. Around ten spaghetti pipes were already carrying water across the stream in a surprisingly tidy fashion. Residents had tied them to the main transmission line which went across next to the bridge. However, for the sub-mains Foday did not want to use the main but the bridge. The problem was that they could not just place the pipes on the bridge where people and sometimes small vehicles passed. "Some drivers are crazy!" one of the workers remarked when I asked where or how they wanted to position the pipes. There was some reflection and discussion. Foday smiled at me, saying that what he was doing here was "engineering without design." That was a pretty powerful way of putting it. After ten minutes of consideration, they came to the decision of leading the pipes across the river by attaching them to the side of the bridge. That is, in the outer walls of the bridge – made of stone nota bene – there were three holes that were now supposed to offer a way of holding the heavy pipes. The workers positioned the first pipe and fixed it to the bridge with steel wire. I was baffled. Three instances of wire were expected to hold the weight of, say, two and a half pipes? Foday seemed confident that they would persist. After the connection across the river was done two workers took another look at the wired pipes at the bridge and briefly exchanged estimations. One was unstressed, saying it would work out fine. The other was less optimistic and merely commented: "This one is going to cause trouble." Then they returned to discussing politics. Elections were near.

Foday and his team had to be versatile, being able to use what was at hand. As I already pointed out, the people I joined as they worked on Freetown's water infrastructure were forced to tweak their own and other materials. They furthermore had to manipulate the environment of pipes in a way that promised the best protection of the system. This did not only apply to the positioning of pipes but also to a range of other objects and activities. Valves, for example, had to be protected from local plumbers by *all means*. Usually these were environmental means: Using all kinds of things such as rocks, plants, furniture lying about or simply garbage to cover up and hide their precious valves. Often, this had the appeal of proper camouflage – urban infrastructural camouflage. Apart from such improvisations to get the job done and to keep the systems' boundaries relatively safe, workers also improvised seats which made waiting for the pickup less inconvenient. And, there was a lot of waiting since

most days there was only one car to pick up the workers and bring them to their next job. Often, small groups of workers were scattered across different parts of Western Freetown.

In his characterization of the bricoleur Lévi-Strauss continues in the following way:

> The 'bricoleur' is adept at performing a large number of diverse tasks; but, unlike the engineer, he does not subordinate each of them to the availability of raw materials and tools conceived and procured for the purpose of the project. His universe of instruments is closed and the rules of his game are always to make do with 'whatever is at hand', that is to say with a set of tools and materials which is always finite and is also heterogeneous because what it contains bears no relation to the current project, or indeed to any particular project, but is the contingent result of all the occasions there have been to renew or enrich the stock or to maintain it with the remains of previous constructions or destructions. (Lévi-Strauss 1966: 17)

It is obvious that the distinction between engineering and bricolage does not work in the case of this study – and I would doubt whether it does work in any context of infrastructural engineering. The "universe" of the engineers working for Guma was "closed" since they could not rely on the fabrication of specific tools and means for their tasks. I propose to abandon the rigid distinction and reuse the notion of bricolage, instead, as an analytic means to capture the tension between the abstract expectations regarding an infrastructure and the concrete conditions of exposure resulting from the infrastructure's environmental situatedness. Foday and his colleagues were expected to operationalize the water system on a daily basis. He was responsible for technically maintaining and managing the Guma system on the ground. In concrete terms, this meant supervising repair work or the laying of pipes. He was supposed to execute the plans and work orders. The 'hard reality' of his work was that the tools his team could use were limited, sometimes broken and that the environment of the system he was in charge of was challenging in various ways. Taking into account this tension, bricolage would appear as a lively form of infrastructuring. One should also note that the kind of improvisation Guma's staff members conducted on a daily basis was of a routinized type. Routinized improvisation may seem an oxymoron but as such it may well express the practice and condition of bricolage as a form of infrastructuring.

Figure 4.2.: Spaghetti connections on a sub-main (photo taken by Lorenz Gosch)

Figure 4.3.: Putting the drill to work: Making a connection on a sub-main (photo taken by Lorenz Gosch)

Wrapping things up at this point, I tie the notion of bricolage to that of infrastructuring, which I have already tied to problematization. The fact that bricolage and the specific kind of skillset, which was concomitant with it, were such an essential and crucial part of (re)making Freetown's water infrastructure on an everyday basis, was formulated as a general problem. Foday's remark that his work could be characterized as "engineering without design" did not come out soberly but there was considerable embitterment in it. While he told me that he did enjoy the kind of creativity that was required of him in his everyday work, he also pointed out that he was frustrated with the impossibility of urban planning in this city, people's ignorance and opportunism and the self-centeredness of Guma's management board.

While Guma's water workers and engineers were sympathetic with residents' frustration and engagement with the supply of tap water, they also expressed discontent regarding the degree of hostility shown by many members of the communities they were working in. Their endeavours to sustain the water system with its boundaries, its pressure regime, its extent – all of this was a way of mediating the dynamics of Freetown's water system as its vulnerable pipes were situated in the urban environment. Infrastructuring, as I have used the notion here, is a way of conceptually capturing the fuzzy and charged condition of the constant becoming of the infrastructural arrangement.

4.3. Unmaking the System

This section does two things: On the one hand, it shows Guma's conflict or friction with other actors tinkering with "their system." On the other hand, it represents the transition to the next chapter, namely by shifting the focus toward the unauthorized and often nonprofessional actors engaging with and problematizing the water system. Thus, this part sheds light on the concrete unmaking of the water system; or rather unauthorized and informal alterations of the infrastructural arrangement. In my usage of the notion, this counts as an aspect of infrastructuring, too. As I have mentioned earlier, infrastructures draw in all kinds of actors including those who are not officially supposed to engage with these systems. Freetown's water system was vibrant in this sense. Whether this applied to infrastructural components figuring as parts of the urban landscape or to decisive strategies to appropriate the tap water – a plethora of acts contributed to a dynamic which was problematized from different angles.

At the Guma Valley Water Company, "illegal" connections were a constant concern. All over the city local plumbers and ordinary residents attempted to 'hack' into the system. Plumbers such as Momoh Sise, whom I met in a community located at Aberdeen Creek in Freetown's West, had a range of skills and materials at their disposal. In contrast to Guma, they did not have easy access to high quality PVC pipes. According to Momoh, local plumbers usually laid cheaper PVC pipes. These were okay, though, since they were easy to connect to each other. He explained that one had to melt two pipes together, using "anything that produces heat." Becoming a plumber was not so easy, he pointed out. He had learned his profession mainly by doing and only with a little bit of guidance from a more experienced plumber. Most of the plumbers were inclined to work at night because it was safer. Less attention meant less confrontation with Guma or with residents who felt that more unauthorized connections would have an impact on their own connection due to changes in water pressure. Momoh himself was more willing to take certain risks. He worked both at night and during daytime. One just had to watch out a little for those Guma people, he told me.

While local plumbers made use of similar means as Guma, non-professionals, i.e. normal residents, engaged with the city's pipes in a less organized fashion. The way I experienced it, the most common method consisted merely of severing PVC pipes with blades or large stones to produce a spot to fetch water ad hoc. Accordingly, they did not usually target submains. Not only was it hard to penetrate the metal but there was also considerable pressure on these lines, depending on the rhythm of the water system – the reason for why the valves played a core role. The opportunist cutting of pipes often led to fierce confrontations among community members, some of whom had authorized connections and wanted to preserve these – a matter that Guma was actually responsible for. Instances of pipe cutting did not always take the form of reclusive hit-and-run actions. At times, residents involved in the act appeared fairly confident and even 'managed' water distribution at the produced leak site. That is to say, after having severed the PVC pipes people would just leave it the way it was or tie it up at the utmost. In a way, they had inflicted a bleeding wound on the water network.

During one of our field trips, I asked Foday directly about his thoughts on 'illegal' connections and the cutting of PVC pipes. He responded: "They tamper with our system!" and elaborated on the problem that Guma could just not keep up with the ongoing engagements at the boundaries of the water system. The main problem, as it

was defined by engineers such as Foday, was the wild sprawl of unauthorized interactions with the system's pipes. The situation had turned into what Antina von Schnitzler describes as a "seemingly endless cycle of innovation and subversion" (von Schnitzler 2013: 688). Guma was continuously working on countering these acts which remained hidden most of the time. Yet, monitoring was almost impossible. To a certain degree, this was due to the fact that the system was hardly readable in terms of large-scale measuring. Guma was incapable of detecting smaller changes of pressure. The general approach was to make access as difficult as possible. As described earlier, this involved covering pipes and valves with earth, debris or waste. Foday had also come up with the idea of placing shortened pipe segments on top of the most important valves. To open or close them one needed an extended wrench. One day, I joined Foday on a visit to a nearby welder: He had produced a custom-made wrench cut out perfectly for this job. It was about a meter long. Here is an impression of how such protective measures figured in everyday work procedures:

(10.10.17)

The main job in this community concerned a surprisingly tidy row of connections on one of the smaller sub-mains which ran parallel to the main. Some of the connections leaked and had to be repaired. The whole spot was open and accessible. The workers closed the valve and cut the end part of the pipe that was to be reconnected. Before, the leaking connection was briefly examined. To cut the pipe they used an "axorblade," a blade that reminded me of a large, though flexible razorblade. The 'fresh' end of the pipe was wrapped with tape so that it would be sealed more effectively, then they connected it to the hub (they had tried it before without tape and it had still leaked). After the repair works the workers covered the spot with earth. The burying could not be too deep or firm as this would make later works on the hub difficult. Sheku, a pipe fitter and the employee leading this group, explained to me that the motif of this was, on the one hand, to protect the pipe and its connections from environmental hazards, especially increased factors of corrosion. On the other hand, they wanted to make the access as arduous as possible for the local plumbers who would turn up when Guma was not there.

I joined Sheku strolling down into the community located at the highway going South along the peninsula. We traced the sub-main leading into the settlement. Every now and then PVC pipes were to be seen running toward the line. Sheku pointed out, though, that most of these connections had been done legally. As we turned around a corner, we found a man in flagranti cutting one of the PVC pipes. He, too, had one of the typical blades used to do this kind of work.

When Sheku approached him somewhat crossly the man denied only half-seriously and hastily disappeared. We took a close look at the cut section and Sheku commented on the use and foolishness of such quick solutions to tap water. Usually, he said, people would fold the cut part and fix it with rubber bands or cable ties, to save water he said chuckling. This way, many households – legally connected – lost their connection over and over again and – as paying customers – made furious calls at Guma's customer service.

As we returned to the highway where the workers had already completed the 'cover-up' we were approached by a man from the community. He was quite angry and complained that he did not receive any water. In fact, he indicated that he had not gotten a connection even though he had already started making payments. I was surprised to see that Sheku did not check by making a quick phone call at the customer service. Instead, he just instructed the workers to re-open the connection hub and told the man to go and get his pipe. And, indeed, after some ten minutes the man reappeared through a large gutter holding a PVC pipe he had already labelled with a black plastic bag.

This ethnographic story revolves considerably around the theme of visibility and accessibility. Not only did Guma's workers find themselves in a kind of competition with local plumbers and residents targeting different lines. Connections also had to be marked in order to designate the owner, as was already indicated in an earlier ethnographic description. I was baffled by this delegating of responsibility. For, if Guma's employees did not take the responsibility for this labelling process, how would they be able to pinpoint unauthorized connections in the tangle of spaghetti pipes? One afternoon, I asked Madonna, another engineer at Guma's Station West, about this. She said that most of the time they knew which connections were authorized and which were not; at the more prominent spots or hubs (Figure 4.2.), that was. However, she also admitted that there was a lot going on that remained unaccounted for. It was difficult keeping track of the constant changes. The pipes were just "too exposed," she lamented. Thus, in the company's endeavour to preserve the system, Guma ran against a somewhat amorphous mass of actors.

At the same time, the company had a particular reputation across Freetown. Frustration about poor service and reliability as well as rumours concerning corruption among Guma personnel had an impact on residents' willingness to pay their bills or 'respect' the system. The issue took shape already inside the company. As I noted above, workers were regularly unsatisfied with their salaries. I was told that normal workers were paid around five hundred thousand Leones (around 50 Euros) a month, provisions excluded. In the face of relatively low wages, some of them turned

into 'local plumbers' when off duty (sometimes even during their shifts) and worked against their own company. Also, liabilities toward relatives or close community members sometimes outweighed any accountability with respect to the company. It was difficult speaking with the workers about these 'side jobs' since they feared to lose their employment. However, when speaking about "helping out" friends or family, the attitude would commonly be casual and sober. The workers would state that, as a matter of course, they cared about their closest social environment. Water, after all, produced its own constraints and claims to solidarity. In addition, workers suspected the company's management board of filling their own wallets. During the weekly plenum at Station West – every Monday morning – senior staff members and the station manager appealed to the present workers, asking them not to engage in corrupt activities. In the past decade, a bonus system had been established. Though, the employees I talked to said that it did not really play a role anymore. It had become obsolete. For the most part, the plenum sessions were to discipline and motivate workers, apart from gathering information and producing something of an overall picture.

However, the main person "tampering with the system" was to be found outside of Guma. The company's bad reputation and water pricing drove the willingness to organize water by other means, namely as a motivation and justification. For many, the problem concerning water supply was to be found in the company which was supposed to organize that very supply. According to these accounts, Guma was the problem, with its lack of means, integrity, and efficiency. During my stay, I came across a number of resentments about the company as an organization. People described Guma as being utterly corrupt and incompetent. Many residents complained about sudden shutdowns of water supply without further warning. Taps ran dry during times of service – most communities received water on three, sometimes four days a week. Residents referred, furthermore, to how long it took to get a household connection or how long it would take until connections would be repaired if these had been cut or broken down. The general impression was that Guma was extremely slow while demanding timely payment.

In the course of my fieldwork in Thompson Bay (see also chapter six) I met a man named Robert S. Kamara (called RSK). He was quite an authority in the community due to his efforts in social work through the local Islamic Union. Asking him about whether there were problems the community had to deal with, he stated that it was not so much access to water but to health facilities. However, after he had mentioned

the water topic, he quickly turned to the Guma Valley Water Company and all the different issues people had with them. Here is an excerpt of my fieldnotes from a conversation I had with him.

(12.02.2018)

Robert's attitude toward Guma was of mixed feelings. On the one hand, he made clear that he himself and most of those living in the community trusted the Guma water (hence the tap water) – in contrast to many residents of Susan's Bay community. Most people in the community got their water from the taps. But on the other hand, he expressed strong suspicion. The company was thoroughly corrupt and its bureaucracy supported that. For example, he said, sometimes Guma permits a connection and later on some Guma people show up calling that very connection illegal, hence cutting it or at least filing a report. Furthermore, more sensitization had to be done as well as improvements to Guma's service quality: "Because there are times when they just shut the taps like that … for a week or so you don't have any water. They don't give any notification. Even us (now), since Thursday we do not have water here. So, we have to manage." The day of the interview was a Monday (12th of February 2018). "There is nothing you can do." They went to alternative sources then. The shutting of lines was indeed a constant matter of concern around the districts that I visited. Guma's Facebook profile was littered with little notifications about repair or maintenance works and hence delayed water supply. So, possibly there were notifications in some instances but the overall issue of being cut off for several days was clearly something that angered customers.

Robert's main issue, though, concerned a certain contradiction in the way Guma acted: "Once you go to Guma and apply for a tap it will take months or even a year and after that they will start bringing bills for you. If you don't pay at the required time, they just cut you off like that." This would certainly hint at an effectiveness in cost-recovery regarding Guma's performance as a company. I am unable to tell whether this was a general reality on the ground. But the statement tells a lot about the kind of reputation Guma had acquired over the years. Robert himself paid around twenty thousand Leones for his tap in the backyard. Residents from the area came and got water there, without paying, he assured. This was relatively rare since many tap owners had started charging people for water. To make sure they did pay, it had become a custom protecting one's tap with a lock. The protection of water infrastructural elements, hence, did expand to non-Guma spheres.

With this account, I would like to mark a transition to the next two chapters which will shift perspectives away from the Guma Valley Water Company and toward those of local residents. The statements of Robert RSK made clear that, often, residents had

reasons not to pay their bills or hire a local plumber such as Momoh Sise. Guma was a highly controversial player in Freetown. The company received considerable criticism and resentment from both inside and outside. Organizing water supply in Freetown was extremely multi-layered and involved a lot of problematization.

4.4. Summary

In this chapter, pipes figured as sites of intense practical engagement and negotiation. I used the notion of infrastructuring to emphasize the dynamic and precarious life of pipes in Freetown. Drawing on my ethnographic material, I have shown concrete forms of exposure the different kinds of pipes experienced. The water workers and engineers, whom I accompanied on their field trips, were supposed to maintain and manage this most vulnerable part of Freetown's water infrastructure. Pipes embodied the system's boundary. As such they were meant to be monitored and protected by the Guma Valley Water Company. Yet, there were leaks and "illegal" connections all over town. In their everyday work, Guma's field workers had to deal with difficult conditions both in terms of the pipes' environment as well as their own equipment. Accessibility was a major concern. The water lines – especially the smaller PVC connections – were easily accessible and water supply was a huge concern across Freetown. Many people in the city were unhappy with Guma for different reasons: Frustrated about not being connected to the system or simply not wanting to pay for water or pay this particular company.

Guma's workers found themselves in a difficult spot. For, apart from the overall context of water scarcity and opportunism, neither did the company's field staff have adequate safety gear, nor were they equipped with proper tools to do their work. Workers expressed discontent about putting their bodies on the line while being paid too little. In the end, not few of them turned into "local plumbers" after or even during work and made those unauthorized connections, which they were supposed to detect and cut while on duty. There was, furthermore, a constant competition between Guma workers and local plumbers and residents who appropriated pipes or valves in order to get water.

This said, Freetown's pipes were not only sites of engagement and negotiation but also of problematization. On the one hand, they led precarious lives. Each type of pipe was engaged in different ways. Larger metal pipes were exposed to traffic, corrosion and selective activities of local plumbers. Spaghetti connections were relatively fragile and

often subject to spontaneous cutting. When they were in bad condition or in the wrong place, the city's pipes themselves were problematized. On the other hand, they were used to index larger concerns which shaped life in Freetown more generally. Pipes embodied the water infrastructure. They were the most visible part of the system; and the most vulnerable. What was inside them had existential importance. In this sense, water produced different kinds of pressure. At the core, problematizations of the life of pipes in Freetown were often about the right to water as well as the right to the city. Who had access to water?

The term infrastructuring, as I used it here, captures the diffuse while highly charged process and condition that constituted Freetown's water system. In the next chapter, my main focus will be on the consequences of the precarious life of pipes in Freetown. There, I will no longer speak about the exposure of pipes but the exposure of human beings to different kinds of water. Residents of Susan's Bay experienced dangerous water flows, that, in part, resulted from the particular situatedness of pipes.

5. Receiving the City: On Exposure and Problematic Water Flows

A water flow is a material relation: the stream runs through an area and connects places with each other. There is a distinct relation between the location upstream and that downstream. What is there to be said about such relation? Here I am interested in the *receiving condition* of the location downstream. 'Down' there, the water flow may be of very constitutional nature, namely in the sense of drastically shaping living conditions. At a general level, water has considerable influence on what it means to inhabit a specific place. Not only is it a vital necessity but water is also a powerful agent in forming environments and shaping lifeworlds. Among other things, this capacity is due to what comes with water. As I have pointed out earlier, water is a particularly interactive substance. Above all, it is highly effective at resolving matter, at mobilizing things. Often, it carries these things elsewhere: downstream. Among the things carried along may be debris, pathogens, waste, or sewage. The locations downstream may suffer under this influx. Freetown was highly productive of such undesired matter as well as of relations of exposure and suffering.

In this chapter, I engage with two problematic water flows, one of storm water and the other of tap water. While of different nature, both kinds of water flows were affected by or charged with Freetown's urban 'excretions' – debris, pathogens, waste, sewage. As such, these water flows produced specific experiences of exposure and raised different kinds of issues. Susan's Bay, a community of around fifteen thousand people, was one of Freetown's central locations where these water flows and their hazardous consequences came together. The community was located next to Freetown's central market area. It found itself at the very border to the sea and was, in large parts, built on sea water (see chapter six). Susan's Bay was the first place I conducted fieldwork in when I arrived in the city in September 2017. Over the next months, I visited the place on a regular basis, with an average rhythm of two to three times a week. In most of my conversations with residents, mainly on water and health issues, I came across descriptions and explanations that pointed at how residents of Susan's Bay found themselves being exposed; exposed to the full impact of wild storm water; exposed to tap water that was charged with uncertainty in the sense of posing serious health threats. The term itself – "exposure" – was usually not used explicitly. It serves here as a means to assemble different descriptions, experiences and problematizations within a single frame. This said, the core question of this chapter is: What did exposure mean for the life in this community? I approach exposure here as a form of problematization.

How did residents identify the two different types of water as an issue and what (practical) responses did they come up with on an everyday basis?

During my stay in the city, Susan's Bay appeared on the news quite regularly. It was commonly referred to as an exemplary slum community and a place of chaos and disaster. Around the time of my fieldwork as well as three years later, two massive fires (2017 and 2021) devastated the community. When in August 2017, heavy rains caused a mudslide that killed one-thousand people, Susan's Bay experienced severe flooding. The place also had the reputation of being a crime hotspot. Youth gangs – "cliques" – were often mentioned as an issue, especially so during the elections: young men got high on Tramadol (painkiller) which led to disinhibition and excessive abusive and violent behaviour. Images of babies lying next to gutters filled with sewage circulated in the media and on the internet. And, when the Ebola Virus Disease hit Freetown, Susan's Bay was categorically labelled as a hotspot of contagion. More than other places in the city, this community embodied the whole range of problems, from lack of sanitary facilities and access to safe drinking water to (domestic) violence, extreme poverty and risk of flooding. In short, Susan's Bay was framed as an intense and thoroughly problematic place. Problematizations from outside and inside often matched, although those formulated by residents of Susan's Bay were often more specific and richer in nuances. Descriptions of the experience and condition of being exposed to dangerous water flows was among the most pressing topics. Emphasis was placed, above all, on the condition of having to bear the burden of Freetown's excretions, namely by being at the end of the water line and the end of Nicol Creek.

The chapter title "Receiving the City" describes the condition of being unilaterally connected to this facet of the urban metabolism[28]. The verb "receiving" does not indicate a relation that has been arranged by the receptor. Rather, as I conceive of it here, it signals *exposure* to water flows and provides a productive way to frame exposure in a way that resonates with the experiences of the many residents I talked to. 'Exposure' usually signifies being or coming in contact with a possibly dangerous substance while not being able to change the situation at its roots.[29] In this sense, the matters of concern – regular flooding and unsafe water – were a given. This givenness was rooted in complex histories of urban growth, inequality, and neglect. That said,

[28] For a critical discussion of the concept of urban metabolism see Gandy 2004. I use the term here because it resonates with my usage of "urban excretions."

[29] For more reflections on the term see Roberts 2017, Adriana Petryna's "Life Exposed" (2003) also provides an interesting perspective which is, however, more focused on the concept of biological citizenship.

moving elsewhere was not an appealing option for most people in Susan's Bay for various reasons. Being located or having access to the market nearby (for trading or criminal activities) or the docks (boats leave for Port Loko, further inland); living within one's social network; relatively cheap rent; access to educational facilities (often also evening schools) – these were among the motifs mentioned most frequently when I asked people why they did not move elsewhere. When in 2015 after days of heavy flooding some residents were evacuated and relocated to another area further outside the city centre, authorities realized that the majority quickly returned to the place deemed dangerous.[30] This behaviour was and is often characterised as irrational, which has become a standard label when debasing slum dwellers. The communities were also classified as being disaster-prone – a label that I will reflect on in chapter six.

After some introductory notes the chapter proceeds the following way: Firstly, I take a look at problematizations of piped water stemming from the Guma water system. Being (at) the end-node of one of the city's main pipe sequences, residents of Susan's Bay faced tap water that had travelled through large parts of the city and which was hence saturated with all kinds of matter. Secondly, I focus on the powerful flows of storm water coming down the Nicol River (also Nicol's Creek). The Nicol was a narrow stream which reached the sea by running in-between the communities of Susan's Bay and Mabella. During the dry season, the stream was barely existent as a water flow. Instead, there was a gigantic mass of garbage in the riverbed. During the rainy season, however, the Nicol turned into a steady and strong current. Especially the first proper rains rendered the river a violent force. With high regularity, the community was flooded by the water masses, sometimes resulting in casualties. I noticed that rivers in Freetown, alongside gutters (the difference was often blurred), played an infrastructural role. Streams such as the Nicol served as a kind of substitutional sewage and waste-disposal 'system.' As I will show, the waste accumulating in these channels played an important role in the flooding of communities such as Susan's Bay.

In the process, my focus is on two things: on the one hand, I will discuss local problematizations of the above-mentioned water flows and the condition(s) of exposure. The water problems articulated by community members of Susan's Bay revolved around destruction and contamination, and they were linked to questions of responsibility, (in)justice, and neglect. On the other hand, I will speak about the practical ways of coping with these conditions and the situations that arose from them.

[30] This involved mainly the community of Kroo Bay, which has strong similarities to Susan's Bay.

This involved techniques of measuring and treating water to minimize the risk of infection. It was also about ways of knowing water under conditions of uncertainty. Residents had a range of ways to respond to the problematic water flows, whether this was about countering the impact of flood waters or finding alternative sources of drinkable water.

Figure 5.1.: View on Susan's Bay (photo taken by Lorenz Gosch)

Something that was also involved in the problematizations of the two water flows was an explicit indexicality. Residents would point upstream when being asked about the origin of the tap water problems. This is interesting considering that Guma engineer Joe, whom I met at the treatment works, had implied that the 'real problems' with the city's tap water were to be found downstream. Both problematizations (or hints) made a point. When combining the two indexical gestures, then the 'location' of water problems – concerning both storm water as well as tap water – was a diffuse condition and space somewhere in-between; which meant furthermore that responsibility was also distributed in a diffuse way. This diffuse and difficult situation was fraught with consequences and it appeared to render methods of resolution futile. There was no single entity – an institutional or political body for instance – that one could pinpoint

as the sole locus of responsibility. The water connections indexed in the acts of problematizations spanned across the city and thus opened up a larger context of causal connections. This awareness concerning 'the larger picture' is important. In the previous chapter, I have spoken at length about the life of pipes. Their precarious situatedness shaped problematizations further downstream. Residents of Susan's Bay and other communities at the end of the lines were highly aware of these conditions and the ways they themselves had to bear the consequences. This was the case with tap water. The same degree of awareness and sensibility applied to the flows of rainwater. This kind of water raised different kinds of problems. Yet, it was not seldomly linked to affairs concerning tap water. The flows of rainwater were also extremely connective in and about the city.

Regarding the flows of rainwater, the general situation was the following: During the rainy season and well into the dry season, water figured as a key distributing force all over the city. That is to say, water dispersed diverse substances across town, carrying them from one spot to another, generally toward the sea. When it rained heavily, storm waters turned into an all-embracing means of transportation. As shown in the vignette presented in the introduction of this dissertation, such flows gained considerable power while traveling through Freetown's vertical landscapes. They built up enough momentum to sweep along large masses of urban excretions. In addition, these streams often consorted with the water moving through pipes. As I have outlined in the previous chapter, pipes led precarious lives in Freetown. The water system was blotched with leaks. The water running through leaky pipes was exposed to the urban environment. People at the end of the line had to bear the consequences.

In Freetown, it made a substantial difference whether one was situated somewhere upstream or downstream. Living upstream – both concerning rainwater flows as well as piped water – was not necessarily better. For example, some more elevated communities were forced to organize water pumps in order to receive water through the Guma system. Also, those living in the hilly areas of town faced erosion risks. However, the further one lived downstream, the more matter came down. When asking the question "What does it mean to live in a place like Freetown?" one would be well advised to take into account the city's water flows. For, these had considerable power in shaping living conditions. Water flows and the ways they distributed the city's 'undesired' remains were a public concern in Freetown. As mentioned above, water figured as a powerful spatial condition and many of the city's residents were not happy about the uncontrolled form of it. Neither did Freetown have a sewage system,

nor did the city possess an extensive and well-composed system for waste disposal. The latter occurred as a patchwork of different actors, including companies and civil initiatives. The former was no less diffuse. There was considerable variation involved, ranging from the use of septic tanks and collection services to open defecation and flying toilets. The (non)disposal of urban excretions was a constant subject of discussion in the city, often framed in terms of contamination or flooding.

Before diving into the ethnographic material, I would like to introduce Timothy Conteh (Figure 5.2.). This is important in terms of methodology because this chapter relies heavily on my interviews with him. He was a resident of Susan's Bay and my key interlocutor in Susan's Bay. His accounts of life (with problematic waters) in the community embody my main working material for this chapter, which means that it is mostly narrative-based. Samuel and I met Timothy during our very first visit to the community of Susan's Bay. Kindly, though in a determined fashion, he convinced us that it would be better if he became our guide, regarding safety. He knew the community well and was a good storyteller in the sense of narrating the challenges of life in Susan's Bay. In particular, he had a sharp sense for describing water problematics. In his descriptions, he placed emphasis on the details of the practical engagements with water: knowing or defining, measuring, filtering, steering, keeping out or avoiding.

The following interview excerpts, as the main working material, form a type of *trail* for my approach toward problematizations of exposure to dangerous water flows; a trail to open up problematization for scrutiny[31]. It is important to be aware of what such an interview can do and what it cannot do. I did not encounter congruent, linear narratives in Susan's Bay. Problematizations were not homogeneous. Timothy's way of putting things was not necessarily and not always representative of the community as a whole. How could it? Much of what he said and described were common places in Susan's Bay – especially the image of the pipes in the gutter (see further below) which fed into the more general feeling of exposure. However, often there were differences, for instance when it came to the evaluation of risk regarding tap water, or when discussing the question who was to blame.

Hence, the point of these interviews is not to produce one coherent representative account of problematic water flows in Susan's Bay. Rather, along the lines of Timothy's narrative I engage with the details, the nuances and indexicalities raised by

[31] For another approach on doing ethnography 'through' an individual, see Biehl 2013.

problematizations of the two flows. The aim is to bring out complexity and interlacement. What did exposure mean in this context? How did residents articulate the baleful water connections and what emphasis did they give them? Feelings of being exposed to the city and being left with it, was a commonly shared everyday experience in Susan's Bay and those communities with a similar relational location. While there was considerable disagreement regarding specific points, there was a decisive unity concerning the matter of having to endure the burdens of the city and its excretions.

To contrast or contextualize Timothy's characterisations, my own observations as well as accounts of other residents will show that in this community of some fifteen thousand beings, there was heterogeneity and contradiction, varying in degree and depending on the topic. Timothy was one of the more 'established' residents in the community which means that he had a specific position and also role within the community. When we met him, he was thirty-five years old and had three children. Until recently, he had worked as a film shower and had had a little shop with a TV and a range of DVDs and video games. However, in March 2017 he had lost most of his belongings to thieves during a massive fire in the community. Since then, his wife earned most of their living, while Timothy volunteered a lot. On many days, one could find him, for instance, at the community's health ward. During Ebola, he had become a community sensitizer and mobilizer. Ever since, he tried to offer voluntary work for NGOs popping up regularly at the horizon. Once he said: "Most of us don't have good jobs … us the young people in the community. Unless we do voluntizing (volunteering), work with the NGOs: GOAL, CONCERN, Save the Children. We do some sensitization. That is the way we are living. We are the volunteers in our community." Taking this into account, not only did we have insightful and pleasant conversations with Timothy, he also had considerable experience working with humanitarian actors. In a way, he had appropriated, more than others whom I met, their particular style of framing and formulating problems.

Figure 5.2.: Timothy Conte Jr. (photo taken by Lorenz Gosch)

5.1. Tap Water

Here is a short portrait of Susan's Bay: Formerly a beach area, hence also the lowest point of the city, Susan's Bay had emerged as a highly congested, "banked" community since the late 1990s. To enter the community, one had to descend via one of the long and steep stone stairs. From the top of these, Susan's Bay appeared as a homogeneous and tame block of ribbed tin roofs in warm brownish colours. Inside, the community appeared as a crisscross of narrow corridors. Women and men squatting on the ground prepared food, peeling oranges or frying things like plantains, to sell around the market area later that day. During the day there was not too much going on as most people, I was told, were out "hustling." Around the centre of the community, close to the chief's house, there was a little shop, a cinema (little stall showing and selling films), a tiny police post, the naval office for the boats going in and out, and a community hall in which "some British" organized events. Toward the sea there were the wharf for the boats heading to Conakry and Port Loko (a city further inland). There were bakers, carpenters, an ice cream factory, a club which was also a brothel, youth organizations, toilet facilities of varying condition and complicated state of belonging. Put short, Susan's Bay in itself was very lively in social and economic terms. While it looked simple from above, 'inside' there was an intense hustle and bustle going on, which was deeply connected to the market. The community was quite a busy place and to a certain degree inextricable for outsiders.

I came to know Susan's Bay also as a place of memory and nested historical pathways. There was a spot at the South-East tip of the community where one crossed Nicol River underneath an old railway bridge that had been constructed in the late 19th century, in colonial times. Silently, it loomed over the stream embodying Sierra Leone's history of colonialist resource extraction. Underneath the bridge, I spoke to Ebola survivors working as cleaners at a toilet house established by the German NGO Cap Anamur. It had been their bodily immunity to the virus that had made them 'eligible' for this position. And, while the epidemic had come to an end eventually, they had kept their jobs. Just a stone's throw away, at Sawmill where water emerged straight from the rock, I heard stories from the war. Such as: quietly rushing to Sawmill to fetch water instead of going to the nearest tap because the tap would take too long to fill the jerrycan – RUF fighters might have caught and killed one. Or stories of "Ebola bodies" floating in the Guma Dam, spreading the deadly virus through the tap water (which meant that Sawmill was the safer option). Such stories could be heard in other places in Freetown, too. However, it is important to mention them here because they

frequently provided a frame or initial momentum for talks revolving around matters concerning water.

Regarding tap water, there was a material constellation that was an especially common point of reference: during my first visits to the community, I quickly came across the *pipe in the gutter*, both by sight as well as through conversations. In the previous chapter, I have written extensively about the life of Freetown's pipes, their environmental conditions and the ways different actors interacted with them. In this section, I will engage with a specific type of pipe situatedness that played an important role in the problematization of tap water all over Freetown. The photo below (Figure 5.3.) shows a concrete case of the pipe-in-the-gutter constellation. As a figure of problematization, it revolved around the coming-together of drinking water and contaminated water or sewage. The photo was taken inside the community of Susan's Bay. It shows a gutter filled with a blend of waste and sewage. A blue PVC pipe runs right through this very blend. This was one of the few pipes carrying water from the Guma network into the community. That is to say, a submain at the border to the community – in the market area – had been tapped and an access been established. The PVC pipe in the photo was actually not one single pipe but consisted of many which had been fused together. It was a fairly long connection of, say, three to four hundred meters. The disturbing situatedness of the pipe seen in this photo was a familiar reference point and figure of speech in the community and in Freetown more generally. Referring to pipes running through gutters meant indicating an 'obvious' problem.

During my stays in Susan's Bay, most people I talked to about the water situation would sooner or later deploy this figure of problematization. I suggest that the image of the pipe in the gutter served as a condensed problematization. Apart from raising concerns of uncertainty and contamination, it also entailed an indexicality that made explicit flow directions and the unequal distribution of risk. It pointed at one's location within the city's landscape of water flows.

At what point did one have access to the city's tap water? In the act of problematization, the dichotomy of the "up there" and the "down here" was invoked on a regular basis. Residents of Susan's Bay pointed upstream when formulating the problem.

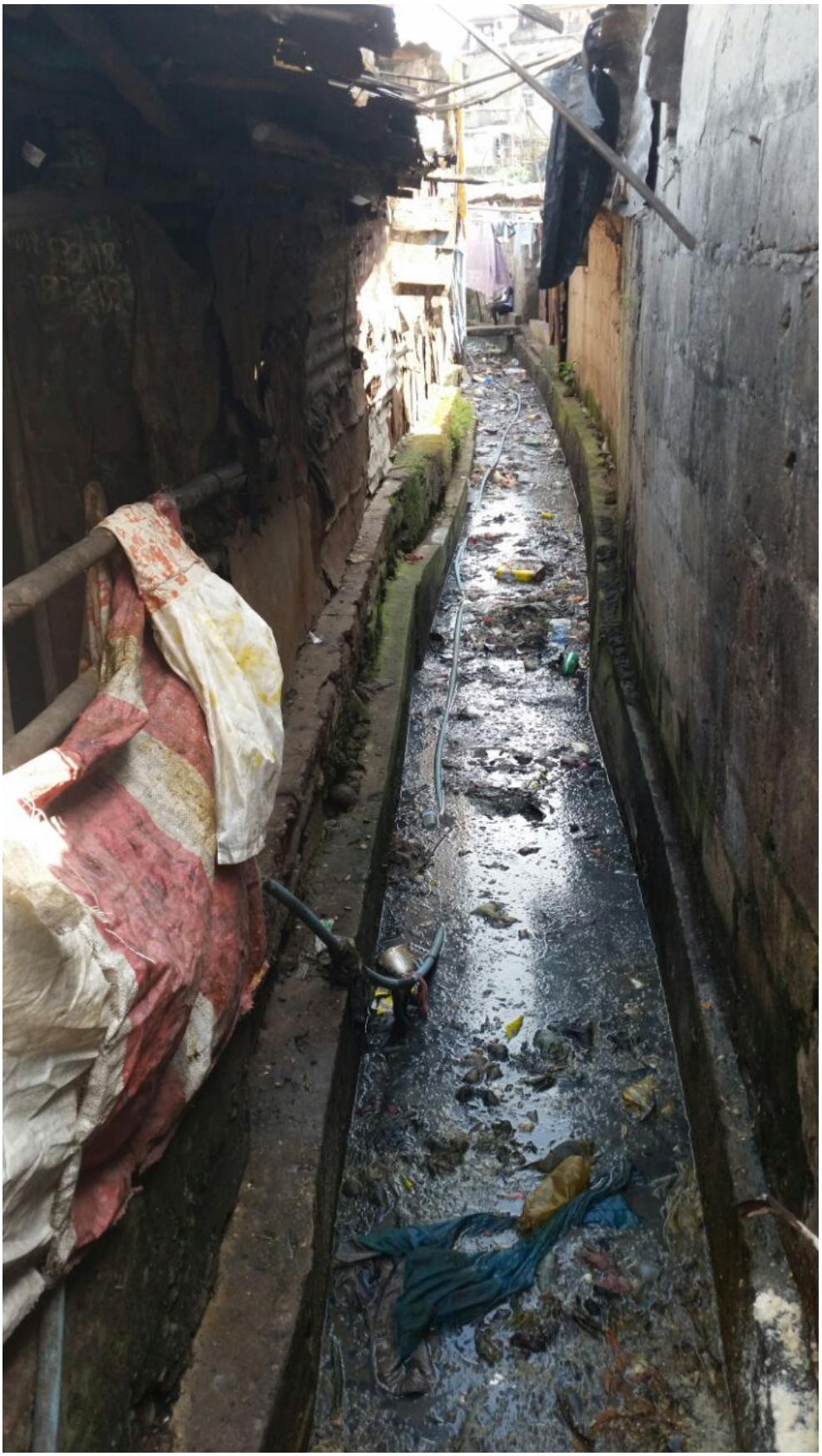

Figure 5.3.: Pipe in the gutter (photo taken by Lorenz Gosch)

This section deals with uncertainty concerning water quality, ways of measuring, and alternative water sources. In a way, it is both an extension of the previous chapter which dealt with the life of pipes in Freetown as well as a shift of focus, namely away from the Guma workers laying and working these pipes toward those people who had to bear the consequences of this precarious situatedness of water lines. If pipes were leaky at one point, this meant that people further down the line were exposed to the risk of contaminated water. The general topic of the following conversation with Timothy was that of water supply in the community. Via its connections to the Guma system, Susan's Bay received tap water on Mondays, Wednesdays, and Fridays. During the dry season this supply rhythm was less reliable. Sometimes there was water only once or twice a week. In the course of the interview, I turned to the question whether the tap water was safe and what kind of water Timothy and his family used for drinking. The context was that Freetown's water flows carried dirt and pathogens toward the sea. Before reaching it, however, these often ended up in human bodies. Speaking about these things with Timothy, the "metabolic relations between the body and the city" (Gandy 2004: 373) became an explicit concern.

(03.10.2017)

T[32]*: Unless you buy Grafton pure water (The company Grafton Water sold water sachets and had a very good reputation across the city). Most of the time that is what my family drinks. Not everyone in the community does so – actually few people (either cannot afford or do not care about hygiene); pipes run through gutters. You know about hygiene. Most of us know about hygiene. Because we think that most of the pipes, these tap pipes, will pass through the gutters. So, I think that kind of water is not pure."*

L: But some people do drink the tap water.

T: They drink the water from the tap.

L: And then they take it home, in the yellow rubber. (jerrycan). They drink it, they use it for body wash, for laundry …

T: Sometimes they use it for a week, three days, four days, they are using it.

L: So, the taps are still the main water source for people? But some buy extra water …

[32] T: Timothy, L: Lorenz (author), S: Samuel

T: Yes, well, (in general) we are buying water here (in Susan's Bay). You don't get it for free. We are buying water. But the tap water is the main source for water, yes.

L: So, what I saw, at the bar there was this huge pile of Grafton packs.

T: That's where you are buying them. There are shops down there who sell Grafton water from the factory. Some people go to the factory, make some arrangements for business down in the slum.

L: So, either people buy the water or they drink the water they get from the tap (which is also not for free).

T: Most of the people will drink the water from the tap. Sometimes when I don't have money, I use the tap water for drinking.

L: Okay. But the taps … there is no pipeline going directly into Susan's Bay, so you use those hoses, right? (there was a misunderstanding: the word "pipe" is used for both PVC connections and submains)

T: There is a middle pipe here. All of the taps down the slum have connections to this main pipe.

S: (explaining) What he is saying is that there is this main pipe from Guma, a big pipe, and that supplies the water. And, from this big pipe there are small rubber pipes connected to it. So, the pipe passes through this end.

L: But it does not go directly into the community.

S: Not directly. But it is up there and these small pipes are connected to it, going down into the slum. And, what he is saying is that these small pipes they pass through the gutters. And these gutters are full with dirt, toilet water.

T: Yes.

L: And sometimes these are perforated …

S: Perforated, sometimes they are cut off.

T: They are cut off and there is leakage.

S: This way, dirty water might have a way to get in. It goes in, you drink it. It can cause cholera, diseases.

T: … diarrhoea. So, that is the way we are living (a formula he uses often as a kind of concluding note). Only God will help us here.

L: But there is no kind of community mobilization or so?

T: No. Well, we are doing sensitization, WASH sensitization. We are doing it going house to house sensitizing people … children that when they want to eat that they wash their hands properly. When you come out of the toilet use soap and wash your hands. When you want to eat with your spoon, use water to wash your spoon before you eat. Clean your cups before you dig the cup in the water. Always cover your water. We are passing that sensitization almost every month.

After having started with the figure of the pipe in the gutter, our conversation touched upon a number of things. Timothy pointed at differences regarding water consumption. These concerned not only reflections on hygiene and bodily constitution but also on financial constraints. Water sachets in particular represented the tension that was involved here. These were little packs of plastic, containing up to half a litre, that one could buy all over town. The price for one such sachet ranged between 250 and 500 Leones (2,5 and 5 cents). They had the reputation of containing "pure" water, i.e. water that was free of dirt. Especially the brand "Grafton Water" was deemed safe and tasty. While these sachets symbolized safe drinking water and bodily care, they also embodied a core concern in the city. Clusters of empty water sachets clogged the gutters all over Freetown, having a severe impact on the steady and relatively regulated flows of storm water.

Regarding the consumption of packed water, Timothy mentioned later on that people started to buy the sachets more regularly during the Ebola epidemic. Among other things, he said that "during Ebola I was not using the Guma water because we were thinking there was a dead body in the dam." Ever since, he pointed out, his family and many other people drank Grafton water if possible. I noted that in the aftermath of the August 2017 mudslide there were similar fears concerning dead bodies contaminating the tap water. These moments intensified the general scepticism toward the water of the Guma system. As such, it was common practice that those who could afford it bought water sachets for drinking and used the tap water for laundry or washing. Many others, however, did use the tap water for drinking; either after filtering it or simply "sharp" form the tap.

Apart from the points on tap water consumption, Timothy also mentioned his work in community sensitization. Such sensitization did not merely aim at convincing people to drink safe water only. The various campaigns were also meant to induce a more general sense for "best hygiene practice." This included reflexive steps in relation to

the handling of cutlery and dishes. As I learned from Timothy, during the Ebola epidemic additional emphasis had been placed on this kind of hygienic reflexivity. As a result, many objects, such as banknotes or the handles of cups, had received special attention. Now, after the epidemic, I was frequently told that many people had "already" returned to habits or routines of less care. Others disagreed pointing out that one had "learned from the epidemic." Timothy himself said that the epidemic had indeed left certain traces, though, not as incisive as one would have expected.

Regarding my own fieldwork, it was borderline impossible to estimate whether Ebola had had lasting impacts on hygiene regimes in the city; whether it had left traces that I could identify. Neither had I been to the city before nor during the epidemic. But then, tracing such changes is rather challenging more generally. The aim is here not to determine possible traces of the Ebola epidemic. References to the epidemic were insightful nevertheless because they made differences regarding the evaluation of risk concerning tap water consumption more explicit. Residents of Susan's Bay evaluated these risks differently and they also deployed different practices of measuring and filtration.

Water played an important role within the logical arrangement of best hygiene practices – as propagated in sensitization initiatives. Not only was it crucial to drink safe water but water was also a vital means of producing clean bodies and environments. Accordingly, it was not surprising that there was considerable reflexion on water, in particular in regard to knowing it as an object. In the interview excerpt above, Timothy also alluded to the image outlined earlier, namely the pipe in the gutter. This figure of problematization played a key role in the reflexive process. It underscored both a radical uncertainty and experiences of exposure that were written into the kind of water that came out the taps. Timothy pointed out that there was a chance of contamination when PVC pipes ran through the gutters filled with sewage and waste. Timothy also repeated what I have mentioned in the previous chapter, namely that often PVC pipes (spaghetti connections) were cut in order to fetch water. This contributed to a possible exposure of water to pathogens and, in consequence, subjecting human bodies to disease.

That said, contamination as indicated with the pipe-in-the-gutter image was in fact complex: the risk of contamination depended on more conditions or factors than the situatedness of a damaged pipe in a dirty environment. The season also played a role since the gutters were usually filled during the rainy season only. This was part of the reason why, as I was told by a referent of the Ministry of Health and Sanitation,

surveillance activities regarding cholera and other diarrheal diseases intensified during the wet season. In the later months of the dry season, there were barely any fluids in the gutters which could have served as a transmitting medium. Furthermore, as a staff member of Guma explained, chances of contamination were low in times of high pressure. Pathogens could not easily enter the line while there was sufficient pressure on it. Yet, as in Freetown water supply was rationed, there were plenty of intervals of low pressure. Finally, whether contamination with pathogens took place or not depended on the respective levels of chlorine. As I have shown in chapter two, chlorination in the treatment process was not necessarily reliable. Also, Guma's engineers were aware of the fact that chlorine levels dropped *the further the water had travelled down the lines*.

Susan's Bay found itself at the end of the pipeline. Being aware of this position was a very basic aspect of life in this community. The water which emerged from the taps in the community had travelled all the way down from the Guma Dam through Freetown's Southwest as well as the whole city centre. Residents were highly aware of the state and situatedness of pipes, and the different ways these were engaged with. Accordingly, to state that the water had travelled far did not so much refer to geographical distance but to the intensity of engagement along the way: The tap water had passed through urban, i.e. socially and ecologically intense environments.

However, Timothy bemoaned that many people "still" – after years of sensitization – either did not know about the involved dangers or simply did not take it seriously. And, Timothy was not alone in saying this. At the community health ward, located just outside of Susan's Bay, the health workers did sensitization concerning the dangers of drinking unsafe water on a daily basis. Community Health Officer Anis Tamba explained that at the ward they observed many cases of diarrheal disease which affected small children particularly severely. In order to respond to this problem, they included sensitization, i.e. health education sessions in their regular consultation and vaccination hours for families with babies. One core means of explanation in these sensitization sessions were pictures from a specifically designed portfolio, which were shown while the babies were measured. These were illustrations of hygienic sequences of preparing and consuming food. Apart from 'good hygiene practice,' the staff members emphasized not to trust the tap water. They stressed how important it was for the parents to understand in "what kind of environment" they were living in. When I asked her questions about these sessions, Anis Tamba explained the matter in reference to the image of the pipes in the gutters.

Awareness was sometimes also delegated to material objects. During my walks through Susan's Bay and its adjacent communities, I came across water tanks that had been built by the so-called WASH consortium. According to my informants, the consortium had been established in the course of the 2012 cholera outbreak. The tanks had been supposed to supply the communities with safe drinking water. Though, when I came to Freetown in 2017, they were not operational anymore. While they still displayed the WASH lettering, they had been dismantled to a certain degree. In a way, they were ruins of a humanitarianism which presented a constant influence in these communities. Residents and volunteers such as Timothy were familiar with the different humanitarian organizations and their style of problematizing the water situation in Susan's Bay (and Freetown more generally). It is important to note that NGOs, health workers, and community mobilizers were constantly working on putting the water problematic on the community's everyday agenda.

Others, however, did not necessarily attach great importance to problematizing the tap water. This became most visible in regard to habits of water consumption. Most of the people would drink the water from the tap, Timothy said in the interview. He also made clear that most people knew about best hygiene practice, as it was promoted in the sensitization campaigns. I suggest that this was not necessarily a contradiction. That is to say, the act of drinking water that was possibly contaminated did not automatically exclude awareness of one's environment or one's location in the city's water system. As I have pointed out in the beginning, opinions on tap water differed. Only few of those I approached did not problematize the tap water at all. Yet, there were considerable differences regarding estimations of how severe the risk of contamination was. There were also different consumption practices which involved diverse techniques of measuring and filtering the water.

Taking this into account, in spite of the uncertainty that was attached to the tap water, residents had at their disposal a range of techniques of *knowing water*. For instance, the dynamic of chlorine levels in the piped water was an important aspect, not just in the perspective of water professionals but residents of Susan's Bay, too. Namely, the sense and tase of chlorine in the tap water was an important indicator used by residents to evaluate the water quality. In general, the sensual appraisal of water played a big role in everyday consumption. The following interview abstract is concerned with evaluations of water. Walking around and casually chatting with residents, I frequently encountered remarks that one could tell the water quality by one's senses. The taste and smell of water was particularly important. At one of the community taps,

I talked to a resident who raised fundamental questions: Was there any (residual) chlorine in it[33]? Could one smell it? What exactly did the water taste like? Furthermore, I was told that one should observe one's body's reaction after having been in contact with tap water. Several people, including my field assistant Samuel, complained about skin rashes which they associated with the tap water. The interview highlights what can be considered as the sensual production of water as an object.

(03.10.2017)

T: After Ebola, people started to know that ... to clean your environment is good. It will give you good condition, good health. And now, thank God, diarrhoea is (less widespread) … because first time we had too much diarrhoea in our community. But now we use that sensitization to say: "Let us buy the Grafton water. Buy it, it will help you. Use that tap water to wash your clothes and that's it. Buy Grafton water if you want good health." Because if you drink the tap water, you can feel it in your mouth. And now (with packed water) there is this difference.

L: How is it different?

S: The taste is different. It is salty somehow because the pipes are rusty.

T: Yes, and the pipes are passing through the gutters and that type of water, that gutter water, is entering. Sometimes they turn the water from that yellow rubber, you turn it, you leave it for three or four hours, you watch, you will see!

L: The dirt?

T: The dirt. So many times I have seen that dirt. That is why I am using that Grafton water.

(04.10.2017)

L: How do you know that water, for example when you get it from the tab or so … do you have certain indicators you use in order to judge whether the water is clean?

T: I am sure that we don't have pure tab water. Just fetch the water from the tab and put it for some minutes and you watch, down the bucket, you will see the kind of rubbish down in the water. So that is why most of the time I am not using tab water. When you want to get tab water you use that clean cloth (for rudimentary filtration).

[33] This is also more generally a key indicator when measuring a water system regarding safety. There is always a guiding value for how much residual chlorine should be left at a certain point in the network.

L: Ah, you use that for tab water too?

T: Yes. They do that with tab water too. And you will see, when you use that cloth, you will see the dirt.

L: And, what do you think is the reason for that?

T: It is a long distance from Guma (Dam). The pipes were passing through gutters. You will not feel any real taste of the water. Pure water, you will feel it, you will know that this is pure water.

Timothy referred to the visual appearance of the tap water, after letting it settle for a moment. Apart from that, there was a technique called shifting: A clean piece of cloth was used as a filter. One stretched the cloth across a second bucket and filled the tapped water through it. While these techniques, be it tasting or seeing, were not an equivalent to bacteriological testing, they nevertheless produced an object one could engage with, an object one could problematize. The techniques offered a means to articulate an issue, namely by revealing dirt as visual evidence for pollution. The sensual techniques also brought to the fore the body as a producer of truth. My interview with local plumber Sise Momoh (one of my interlocutors in Thompson Bay) took an unplanned twist when we shifted attention away from his or residents' bodies toward my own. Momoh said that he did indeed drink the tap water and found that it was perfectly fine. Always "sharp, sharp" form the tap, he laughed. As long as he did not taste any poto poto (a word for mud), it was alright for him. Yet, when I asked him whether he would offer me this water, he gave the following answer. No, he said, because us two did not have the same immune system. He pointed out that my immune system – that of a white ethnographer was simply too weak. In contrast to his body, mine was not used to the amount of strain resulting from drinking Freetown's tap water.

Thus, living in a place like Susan's Bay or – as Momoh – Thompson Bay did not only require a range of skills and knowledge concerning water. It was the body itself that had to be sufficiently resilient. Or, as Timothy framed the matter, one had to take better care of one's body than others. In fact, I encountered many people – mostly young men – who stressed that their immune system was so strong and durable that they would not get sick from drinking the tap water. This was a view that stood in stark contrast to the perspective of those working at the community health ward. There, the general opinion was that polluted tap water was the main reason for the numerous cases of diarrheal diseases. The focus was however mainly on small children as being

especially vulnerable (considering high child mortality rates). Medical personnel and volunteers tried to persuade people to consume safe drinking water, either by buying sachets, by filtering and boiling the tap water or, if these were not viable options, by using alternative sources.

Due of the uncertainty stamped onto Freetown's tap water as well as its relatively unreliable access due to the city-wide rationing patterns and shortages, many residents preferred to get their water elsewhere or differentiate purpose-wise (tap water for laundry and cooking, packed water for drinking). In Susan's Bay, if residents chose not to use the tap water for drinking and if packed water was too expensive, they had one major alternative source at their disposal: the Sawmill spring. This source of water was often framed explicitly as the best alternative to tap water; in the sense of price, quality, and above all availability. It was generally considered to be the most reliable and trustworthy source of water in the whole district. Even during a drought, so the common narrative, Sawmill would provide the communities with water. The spring was used by many people including market personnel. It was located along Nicol Creek, in-between Susan's Bay and Mabella community. As such, it was considered a shared privilege as well as responsibility. The water came straight out of the rock. In 1991, some residents had come together as a youth organization, the Israelite Development Organization, and had continuously built the foundation as well as the pipe through which the water was trussed. The water itself was used for both drinking and doing laundry. During the day, there were always people laundering their clothes. At the wall of the Timothy's house (just next to the spring), there was a large board announcing the rules of behaviour,[34] meant to resolve conflicts that would arise occasionally, when many people wanted to fetch water.

Gibrilla Settgie Dumbuya, an elder resident like Timothy and who had also been part of the first building initiatives of the IDO, told me that the water at Sawmill was safe to drink, even though it had a clay-like taste. An issue that came up quickly here was the question whether the alternative spring water was really that much better than Guma's tap water. Speaking to a German geohydrologist working for the NGO Don Bosco, I learned that the answer depended on whether the water came from underneath the granite layer or from above it. In the latter case, he would not consider it safe since then it would be exposed to superficial drains and leakages including faeces resulting from the (widespread) flying-toilet practice. To my knowledge, there

[34] "No stealing, no fighting, no abusive language, no quarrelling, no naked washing."

had not been any initiatives of taking samples from Sawmill in order to do bacteriological and other testing. My interlocutors emphasized that Sawmill water was safe and they based their conviction on long-term experience. The point here is not to evaluate truths or false beliefs but to produce material which shows the diverse reflections and decisions that people came up with when problematizing the tap water. Generally, I noticed a very positive connotation when people talked about this alternative to the tap water provided by the Guma Valley Water Company. However, Sawmill was often crowded and at the border to another community. This meant that one had to overcome some distance, depending on where one lived.

There was a second alternative to tap water, at least during the rainy season: "harvesting" rainwater. Since I have been talking about environmental awareness, it is interesting considering this kind of water. Following Timothy's narrative, rainwater was problematized in a very specific way during the Ebola epidemic:

(04.10.2017)

T: And most people were using rainwater. But since Ebola came most of us (laughing) stopped to use rainwater for drinking.

L: Why?

T: Because we have been using the rainwater for drinking. But since Ebola came, they stopped us, used sensitization to say that the water is no good for drinking because of the disease. The rats were moving around the ceiling of the pan bodies. The cats were moving around the ceilings. The bats were flying around the community and were shitting on the (sink) pipes … of the pan. We always said that the rainwater is the best water, it is from God. But they stopped us from that.

L: You were not allowed because they feared that the bat shit might infect you.

T: Yes, that it might infect us. That is why we stopped using it.

L: And some people were also afraid of using the tap water, right?

T: The tap water, yes, some people, me too! Only for laundry. But I did not use it for drinking.

L: You don't do it right now either, right?

T: Well, sometimes, when we we are shut off (referring to regular shortages and unreliable supply schedules)

L: During Ebola many believed that there were corpses somewhere around …

T: Yes. Somewhere around … but some used it still.

L: Did people really find bodies or was it more a kind of general suspicion?

T: A general suspicion, fear and suspicion. Now we started drinking it (again) – but when the rain started we were not using that. Only now since July, August … but April, June we do not have clear water. The rains washed away everything, the sink pan was cleared. So, we are drinking it now. It is from God, it is pure. (…) When we are using it, we are using a clean cloth and turn it. Let's say, we fetch the rainwater in this drinking rubber and we get another rubber, take clean clothes, put it on this empty rubber, we take that one, just turn it.

L: Ah, as a filter.

T: Yes, a filter. Then we get clean water.

L: You don't cook it (I meant as a form of disinfection)

T: No, we don't cook it. But we use it for cooking. We use it for boiling water, to put in rice, to drink tea. So, we did not have any infection … but during Ebola we were not using it. For cooking, nothing. We don't have any business with it.

Gibrilla told me under what circumstances he would "harvest" water from the roofs, too. He made explicit that it depended on the state of the roof. If it was too dirty one should not harvest there. Timothy's and Gibrilla's reflections on the frame conditions concerning the use of rainwater were interesting in two ways. On the one hand, Timothy once more raised the issue of the origin or source of water. In the case of rainwater, he said that it was "from God" which would indicate that it was safe in an absolute sense; in contrast to the tap water which was, at best, uncertain quality-wise. On the other hand, their reflections placed particular emphasis on Susan's Bay as a space shaped also by other species. Being aware of one's environment meant taking rats and bats as disease vectors into account. Rainwater, precipitating on the community's roof tops, did not get (in)to human bodies in its 'pure' form but it was charged with dirt and possibly with animal faeces. In a way, this was another form of exposure.

I have included these reflections on rainwater here to highlight the amount of deliberation that went into drinking water, from different angles. Talking to various people about water consumption, it became clear that this was an everyday and hence 'ordinary' though constant matter of concern. In order to get by, residents of Susan's

Bay had to navigate the conditions of a precarious and harmful environment which rendered the tap water problematic. The tap water Susan's Bay received by means of informal and to a certain degree "illegal" connections was problematized as being charged with different kinds of urban excretions.

So, when speaking about exposure as an experience and a problematization, the core issue was homogeneous: the tap water was possibly contaminated. Contamination could happen anywhere up the water lines, be it in Susan's Bay or further upstream. Uncertainty was written into the tap water. What was certain was that the dirt that entered the pipes somewhere along the way through the city, could end up in Susan's Bay. The pipe in the gutter was a key figure of problematization. But then, in terms of nuances, details and above all practical ways of dealing with the issue defined, there were considerable differences. These included, for example, different ways of measuring, knowing, filtering, treating or avoiding tap water. Many of these differences were articulated by Timothy himself, while explaining his own approach regarding the problematic tap water. Not everyone was able or willing to buy packed water. Some residents drank the tap water regularly, some shifted it before doing so, and others even boiled it, for instance, when they prepared powdered milk for their children.

For many residents, Sawmill was an obvious alternative to the tap water provided by the Guma system. Though, while the water was supposed to be safe to drink and accessible, this also meant time spent waiting since the Sawmill source was among the most popular in the whole district. In Freetown, alternative water sources were common. In many places around the city there were boreholes which, in turn, were problematized heavily by the city council and other authorities. These argued that the water fetched from these wells was contaminated by faeces and other harmful substances that percolated through the soil. The communities of Susan's Bay and Thompson Bay (see chapter six) had the luck of having a more natural and stable source at their disposal. As 'natural wells,' these sources could not be illegalized that easily (though, persecution was generally relatively weak and seldom).

In this section, I have provided substantial ethnographic observations and material, including parts of my interviews with Timothy Conteh. On basis of this material, I have shown that in Susan's Bay matters regarding tap water were highly complex, delicate and heterogeneous. Problematizations differed in various ways. Opinions and practical ways of engaging with tap water were heterogeneous. Often, difference was a matter of nuance or accentuation. There was plenty of problematization involving a

plethora of reflexive steps, indexicality, evaluation of risk and so forth. Such complexity often remains hidden when such communities are targeted in the course of initiatives, for example on the part of the WASH consortium. These complexities indicate the realities on the ground, especially after such initiatives have been introduced; when materials have run out and momentum which has been generated through sensitization fades away. Sometimes, though, tap water is simply not there, even for longer periods of time. I witnessed this several times in Susan's Bay. In those cases, community members were forced to use Sawmill water in any way. Problematization was then concerned with the absence rather than the quality of water.

I opened this chapter by writing about water flows as material relations and how the receiving part of such a relation may suffer from being exposed. In the next part, I will turn to another water flow, namely the Nicol, a small river running through Susan's Bay before entering the sea. For about half of the year, during the dry season, it was a stream of waste products, sewage and debris rather than of water. Yet, during the rainy season, the stream changed its character considerably and turned into a violent channel of storm water. I will now discuss the stream as a problematic water flow and the consequences it had for those living in Susan's Bay.

5.2. A Waste-Water Bond

The Nicol(s) – sometimes also referred to as Bambara Spring – was not very long. From Susan's Bay and the old railway bridge (towering above Sawmill), I traced it up to the hilly area around Fourah Bay College, South-East from the centre. Every year, with the beginning of the rainy season, it emerged anew as a result of the local drainage basin dynamics through which rainwater accumulated in relatively established channels. Before it reached the sea, the water flowed through a number of highly congested neighbourhoods; the last one being Susan's Bay and Mabella. With the first heavy rains, these communities received the full impact of an otherwise narrow and calm stream of water. Every year anew, Susan's Bay was hit and flooded by the masses of water, some years more seriously than others. Residents of Susan's Bay considered themselves as a "vulnerable community" and the Nicol an enduring threat. My conversations with Timothy helped me understand this threat and its practical consequences better.

(29.11.2017)

T: When the rain comes everything goes down. Any first and second rain, all the dirt from up (the city) enters the community, comes inside our homes, enters everywhere. We all just move up our things, our children (laughing) we put them up the ceiling. Every April or May, first and second rain. When the flood is coming, this is the president of America … Obama. When the flood is coming we are feeling the sense. (In Krio) When di wata de kam, na dirty (the water is turning dirtier, i.e. changing colour] "Oh, Obama is coming". Everyone is coming out. Most of the time it smells. At that time, by the bridge then … put them there: "stand by now."

L: You can smell when the …

T: Yes! We know that it is coming. Everybody will get up: "Obama de kam, Obama de kam!"

L: Why Obama?

T: That is the time Obama won the elections in America (laughing). Now, this year, we say Trump. "Trump is coming!"

L: So, the first day it causes a flood, but it also …

T: It enters into the community.

L: But it also flushes everything out …

T: Well, the first rain, it does not flush everything out. Everything stays here in the community. Blocked everywhere. The dirt from up … the dirt of the city comes in the community, overflowing into the community, into our rooms. Everywhere in our community.

L: How long does that take?

T: … so after the rain … unless we use manpower, start the cleaning. Three days to four days cleaning. Because all of this dirt does not have any way to go down the sea. The gutter, too, will be blocked. The dirt will be stuffed in the gutter until the second rain flushes it out.

L: The second rain flushes it out?

T: It flushes it out of the community. But still, it will enter into our community. Unless we start the cleaning. Three days, four days …

L: And you smell it then when heavy rains come?

T: Yes! When there is a heavy water coming from up you smell it.

L: What does it smell like?

T: Like different sense, different smell will come. When dirt will come down the gutter. That, when you see that brown, thick brown that is a bad sign.

L: When the water is brown …

T: Thick brown! Light brown is normal … but when it is a thick brown, when it is coming like that … bad sign. It will cause damage. That is going to cause a lot of disaster up the mountain, the other side of the city … we will know this type of water. We have studied that for a very long time.

The kind of exposure that I see in this was of a less constant nature than that regarding tap water. Timothy said that it was the dirt from 'above' that was dragged along by the water and carried into his community. In Freetown, rivers played an infrastructural role: since the city did not have a stable encompassing sewage and waste disposal system, many people across the city got rid of their residue by dumping it in the rivers. In this sense, Freetown's streams such as the Nicol represented what Nikhil Anand calls "river-sewers" (Anand 2017: 23). Anand generally points out that streams and rivers often serve as open drains, as "natural infrastructures" (ibid.: 129). The fact that these rivers in Freetown were given an infrastructural role by residents was problematized from different angles and at different levels though. They appeared more like substitutional arrangements rather than infrastructures that were defined by some form of service delivery and management. Yet, the rivers of the city took the excretions and the rain made them disappear.

This occurred with a certain rhythm. The rainy season in general held the risk of severe flooding events. Though, it was the first heavy rains in particular that posed a serious problem for the residents of Susan's Bay. However, it was not merely the storm water that caused damage and raised concerns. Rather, it was the combination of water with considerable momentum and masses of urban excretions that had accumulated in the riverbed throughout the dry season. I refer to this combination as waste-water bond.

For those at the end of the water flow, the infrastructural role or effect of rivers had grave consequences. In our conversation, Timothy pointed out that with or after the first heavy rains Susan's Bay was regularly flooded because the conglomerate of waste and debris caused blockages that held the water inside the community. However, community members had developed a range of countermeasures in order to prepare themselves for such events and to attenuate its effects. For example, he said that people sensed the coming danger, namely by paying attention to the smell of the Nicol's water as well as changes of colour. This was a kind of experience residents had acquired over

many years, he stated. So, in a way there was a well-rehearsed sensual perception involved. One might also call this experience a strong attentiveness towards the community's environment. It was linked to the knowledge of local climatic patterns, i.e. change of seasons with particular attention to the transitional phase, and the city's terrain profile. According to Timothy, having noticed the signs of flooding people were alerted and precautions were being taken: Valuable belongings and vulnerable people were placed in safe spots. Many houses had an extra step as a kind of permanent barrier, about thirty centimetres high. And, inside the houses there was often a relatively large board or shelf on which things could be stored. During the flooding situation and in its aftermath, residents attempted to keep the water out of their community as much as possible.

This did not always work out. Some years, when the rains were heavier or more enduring than 'average,' property was lost and people died. This was something that became clear in all of my conversations with residents. Thus, while Timothy was the only one to tell me about the reading or sensual perception of environmental signs, it was obvious that the Nicol and the water flows it represented were a general and serious concern in this community. There were considerable experiences regarding what to expect when the rainy season was approaching. Problematization was relatively concordant and homogeneous in the case of the Nicol and the waste-water bond it unleashed. Thus, in contrast to the previous part, this section is not so much about heterogeneity, i.e. different accentuations in acts of problematization and practical ways of dealing with the issue defined. Rather, it is more explicitly about the kind of relation embodied by the water flow. It is more directly about exposure to other parts of the city. Timothy's account is especially interesting because it raises concerns about who suffered the most and who was to blame. The waste-water bond thus takes us to the topic of inequality and the distribution of (ir)responsibility and impositions of the urban. By problematizing Nicol Creek, residents located themselves within the

Figure 5.4.: Nicol Creek during the dry season (photo taken by Lorenz Gosch)

spatial fabric of the city and its power dynamics in terms of burden and neglect. Timothy said that the dirt of the city came into the community. I think this formulation put the matter in a nutshell formulating it like this. When he asserted that the Freetown's urban excretions came down on them, he implied: we are forced to endure the dirt of those living – spatially as well as politico-economically – above us.

What was that dirt which residents of Susan's Bay were forced to endure? The picture above (Figure 5.4.) shows the Nicol during the dry season of 2018. At this time of the year, it was a stream of urban excretions rather than a water flow. There was water underneath, yet not enough to move away the mass. The stream consisted of all kinds of garbage: from leftovers and broken baskets to nappies and the notorious water sachets. Pigs looking for edibles were wandering on this stream. Thinking with or through objects or things offers a productive entry point in many ways; different variants of materialism. Consider, for example, Jane Bennett's reflections on "one large men's black plastic work glove(,) one dense mat of oak pollen(,) one unblemished dead rat(,) one white plastic bottle cap(,) one smooth stick of wood" (Bennett 2010: 4). Materialist approaches such as hers may open up powerful perspectives. In the case of Nicol Creek, however, the sheer mass of (urban) excretions made reflections on specific objects seem inadequate. The stuff I looked at when taking the picture above was unbearably vibrant. It was also blurry in terms of responsibility. Whose was all of this residual matter? And, who was responsible for it as it was now? The question concerning responsibility and culpability was complex since these were distributed in a highly diffuse way. This becomes especially clear when taking a look at the practical disposal of both sewage and waste in Freetown.

The NGO Concern presented the following evaluation of the conditions of waste distribution in Freetown, calling it a "waste crisis:"

> For Freetown, a significant factor in such disasters is the absence or low capacity of drainage systems – exacerbated by the accumulation of waste and poor city planning. In fact, only 21% of Freetown's waste is estimated to be properly collected and disposed of, leaving the rest – roughly 550 tons per day – to be indiscriminately burned or dumped in streets, waterways and illegal dumpsites.[35]

While the accuracy of the figures mentioned may be called into question, I found the general statement that more than two thirds of waste were not processed by an

[35] https://www.concern.net/news/sierra-leones-waste-and-flooding-crisis (last access 14.10.2020).

infrastructural system (defined as such) noteworthy. What remains unaddressed in the account is what exactly happened to that unprocessed 'rest,' thinking of Susan's Bay and the Nicol.

To get a better grip on this distribution theme, it makes sense taking a closer look at the ways waste disposal was organized in the city. Since the location of sewage and waste in Freetown's urban environment resembled or even convened, it makes sense considering these two kinds of excretions together.

Recognizing the relevance of the city's processing of waste and sewage disposal, I conducted an interview with Sore Kamara who worked as Assistant Environmental Officer at the City Council. The interview excerpt is sketch-like since Kamara did not want to be recorded but allowed me to take notes[36]. According to him the situation looked like this:

(31.10.207)

Waste disposal – household inspections – every household needs to transport waste to the nearest transit point (from where it is further transferred to one of the two Bumehs (dumpsite)); he states that this was a very effective measure to tackle the waste problem in the city; the people themselves need to pay for it: about 2000 Leones per bag; slums, meanwhile, prove to be difficult – little control (people simply dump their waste in the water); within these communities there are cleaning exercises/projects about three times a year; waste disposal on the streets/ in public space: especially the drinking packs have proven to be a huge problem; the disposal of waste in public (just throwing it somewhere) has been declared illegal; there have been "some arrests" (30 people in 2017); notification?; it seems, the approach chosen by the government is that of penalty and draconic ones indeed; prison or large fee (2x 250000); there is now a special court for these matter of environmental pollution; sanitation: about 40% of households do not have a toilet; open defecation is a crime; again: prison (6 months) or fee (or one after the other); another problem: large companies do not pay taxes in order to contribute to the solution of environmental problems – although they too produce waste; tensions between the city council (CC) and the federal government; Operation Clean Freetown: somewhat obscure what it is; "more of a declaration"; three month program; initiated directly by the Presidential Office; council supervising role here and finance in part; assistance by providing vehicles; Operation Clean Freetown does not include the gutters (only other parts of communities); the gutters/drainages are the responsibility of the Road Maintenance Agency; but they do not do

[36] I jotted down the information he gave us. I found this hasty form quite instructive. It almost appeared a little bit like a protocol.

their job properly (although one can see their little troops from time to time); apparently they pay private contractors (like youth groups) to do the job occasionally; then there is Masada: they are responsible for cleaning/waste disposal in Freetown – but apparently only at the superficial level; and they do not do their job properly (for instance, one cannot see them in the East, only in the West mainly); Masada, a private company, has the backup of the federal government – although they do not work properly; "We'd have the manpower, the will to take responsibility of the gutters." (City Council); And: "The Bumehs were all given to Masada but they were not showing any seriousness." – hence, Bumehs back to CC in 2017; institutional confusion; "The gutters have returned to their original state."; Sewage: every household with a toilet must have a septic tank; not all do have it; different kinds of pits in use; ground water problematic (especially since there seems to be a return to wells); and then there are those (many) who simply shit and throw that away in a plastic bag; the tanks are supposed to be emptied from time to time by private contractors – sometimes doing it "manually" (by hand with buckets) – mainly in the East; otherwise (in more better-off areas automatically, i.e. by machine); then to Bumehs.

Kamara raised a number of interesting points in the course of our conversation. Among other things he mentioned the shifting of responsibility for waste and sewage disposal to private households and individuals. He furthermore pointed at an institutional conflict over the cleaning of the gutters as well as the management of the dumpsites, the "bumehs." There appeared to be some kind of confusion or miscommunication concerning the task-related responsibilities. Comparing the account above with my own experiences, I found that the gutters somehow stuck out. They are also especially interesting here because many of them fed into the larger "river-sewers" such as the Nicol. During the time of my fieldwork, every now and then I witnessed small groups of boys or young men who had been hired[37] for cleaning some section of a gutter. One could see them arching their bodies into the gutters and pulling out chunks of soggy mass which was hauled up onto a little cart. Though, a lot of the time the gutters remained untouched. This was striking since, as most people pointed out, the gutters were the very places where most of the waste ended up and agglomerated. To a considerable degree this applied to sewage, too. But then, the gutters also played a major role in dealing with the tremendous amounts of storm water during the rains. While at times there were blockages in the gutters, the water flow resulting from the rains and the channelling was able to push through these large masses of excretions because of its extreme momentum, which was due to the vertical

[37] Unfortunately, I was not able to find out whether this was part of a larger employment program.

terrain profile of the area. Meanwhile, Masada's role as one of the core players in the arena of waste management was perceived by many people as a kind of running joke. Rumours had it – and the joke seemed to have reached the City Council – that Masada could never be seen in the East, the poorer part of the city. One could only spot Masada vehicles in Freetown's West with its better-of inhabitants (in some parts) and expat cultures. The joke pointed at the uneven distribution regarding capacities of waste removal in legal forms.

The disposal of sewage was similarly diffuse and piecemeal. The British colonial government had not established a sewage infrastructure in Freetown. To the date of my arrival, there was still none. Those who could afford it had septic tanks in which they stored the household's sewage until it got picked up by one of the city's sewage entrepreneurs. Though, as I was told by plumber Momoh Sise, in those areas close to some kind of waterbody or -course many of these tanks were secretly equipped with a little outlet which remained closed for most of the year. It was opened with the arrival of heavy rains as to release the sewage into the gutters and subsequently the sea. This appeared as one answer to the city council's move to make people dispose of their waste themselves. Others, who could not afford such tanks, used public (community) toilets, for which they usually had to pay, or small shacks to defecate and then removed their excrements in plastic bags, which commonly ended up in the river-sewers. It was a similar matter, not seldomly the same, with the disposal of waste products.

It appeared especially bizarre and shocking that people, who often could not afford to organize waste disposal the official and legal way, should be punished severely[38]. As far as I was told, the draconic persecution of open defecation remained a rare occasion and was mainly a symbolic act. It did support feelings of neglect and discrimination, however. In Susan's Bay, many people held a grudge not just against political elites (corruption) but more generally against the system of institutions administering life in Freetown in different regards, including the city council. However, as Timothy told me, city counsellor Madinatu Kamara who was responsible for Susan's Bay and the areas around it, was endowed with trust. She was considered "one of us" because she was originally from the community and appeared upright in her vow to change things for the better. So, when talking to residents about city politics and whether measures

[38] In some ways, the above-said fits with what Rosalind Fredericks (2018) has written about garbage citizenship in Dakar, Senegal. The main concern of her monography is to trace the ways that the burden of disposing of the city's waste masses was dumped on non-professionals, especially the urban poor.

were taken to improve living conditions – among other things concerning the risk of flooding – I observed that many would become angry and complain about being ignored or treated badly – they would make an exception for Kamara, though.

The question was whether or in what ways the delegating of responsibility combined with threats of persecution would 'work.' The general impression around Freetown was that, on the large scale, it simply did not. This diagnosis did not really depend on who I talked to. It was common sense. Yet, the reasons offered regarding why the disposal of waste and sewage did 'not work' differed: Either it was people's ignorance or the failure of government bodies (at local city-level as well as federal). In the end, people kept disposing of their water sachets and other trash in the gutters and most of it stayed where it was until being washed away. Also, as a taxi driver pointed out, even if the picking up of waste and sewage by private companies worked out fine, the dumpsites themselves were a huge issue. In fact, during the time of my fieldwork Freetown's two main "bumehs" (one in the East, one in the West) were a public concern which was debated in newspaper articles and on TV and radio shows. A variety of issues were associated with these bumehs. At the core was the critique of poor management leading to accidents such as collapsing piles of trash killing people, groundwater contamination through improper storage of toxic remains, overloading, and so forth.

Speaking generally, matters of waste and sewage disposal were utterly complicated and diffuse. This said, it is important to keep in mind what consequences this had and who suffered the most under this condition. Freetown's rather intense weather events intensified the already present relations of unequal distribution of the burden. One might also say that they just made it more explicit. Since waste management in the city did not effectively remove or relocate the bigger part of the city's waste and sewage, a more vague and less direct process distributed it. This is also why I find the urban metabolism metaphor fitting here. Speaking about Nicol River, it suggests itself framing it as a substitutional or secondary infrastructure. The fact, that the city's river-sewers had taken on this disposal role was an unplanned effect of Freetown's urban growth. I noticed furthermore, that there was no clear-cut distinction between (natural) stream courses and (artificial) gutter in Freetown. This was reflected in everyday language as well as by the mere practice of using these as sites of disposal – knowing that they emptied 'themselves' with the rains. This appears especially interesting when thinking back to chapter two where I engaged with the notion of "nature as infrastructure" (Carse 2012).

This was problematized by various actors across the city, yet most decisively by those who were affected most by the waste-water bond produced by the gutters and streams such as the Nicol. Elder residents of Susan's Bay asserted that this was a relatively recent development – maybe since the early or mid-2000s. In this sense, the hazardous combination of liquid and solid materials presented here would be an indicator of change. The city had changed, I was told. Plastics products had become ubiquitous and shaped the environment. In our conversation, Madinatu Kamara remarked that "Nicol Creek used to be clear. It used to be a free stream of water, even during the dry season. There used to be a dumpsite in Mabella where people disposed of their waste. With the end of the war people started using the rivers to dump their waste." In this context, she also pointed out that the slum dwellers of Susan's Bay changed their way of building. Instead of solid houses they built the familiar ribbed tin-roof shacks and went ever closer toward the stream. In this process, the river had become very narrow, she said.

Summing things up at this point, residents of Susan's Bay were highly aware of their location within the city's "waterscape" (Swyngedouw 1999) and of the dangerous conglomerate that accumulated throughout the city's gutters and river-sewers during the dry season. When, with the first heavy rains of the wet season, this waste-water bond came down on them, they deployed a range of preparations and countermeasures in order to reduce the damages caused by the storm waters. Due to the mass of urban excretions dragged along by the water, blockages were a regular thing to happen. Large parts of Susan's Bay were flooded, sometimes for several days. Hence, Susan's Bay was exposed to the relatively stable rhythm of waste-water flows. This condition was problematized as an instance of unequal distribution of burden caused by either neglect, ignorance or failed management; or all of them. Just as Freetown's urban excretions, responsibility for these was spread in a highly diffuse way. The fact that the situation was so tangled and blurry imped the formulation of effective, clear and shared problematizations.

5.3. Summary

Those living in Susan's Bay had to come to terms with receiving dirty water and destructive floods because they were at the end of the water flow. In this chapter, I have described these experiences as a form of exposure. Involved in this were two kinds of water flows – tap water and storm water. These flows carried along what I

have called Freetown's urban excretions: debris, waste, sewage, pathogens. As such they represented a sort of waste-water bond. And, they carried these excretions into Susan's Bay. Having been produced in and by a diffuse spatial composition, the excretions raised the question of who was responsible for these detrimental masses – both regarding who was to blame and who was to find a solution. Was it those producing the residue or was it the local government, i.e. Freetown's city council? Matters were highly intricate because the origin or cause of the situation was so utterly dispersive. The general impression was that those actors officially responsible for disposing of Freetown's garbage and sewage – mainly Masada and to a certain degree the city council – did not do their job properly. This impression was linked to a policy that aimed at shifting responsibility for excretions toward private households and individuals. On paper, people could be punished severely for open defecations or informal, i.e. unauthorized disposal of waste and sewerage. This policy affected, in particular, poor people who could not afford to pay one of the city's entrepreneurs. Residents of Susan's Bay, it seemed, simply had to bear the consequences of this diffuse situation or condition and endure the dangerous water flows that came down on them, each with its own rhythm and characteristics.

The aim of this chapter was to shed light on the constitution and concrete impacts of these water flows as well as the ways residents of Susan's Bay problematized them. Susan's Bay was a community which was pathologized from the outside on a regular basis, that is diagnosed with different kinds of problems. Water issues were among the most pressing issues mentioned, when NGOs and other organizations launched humanitarian initiatives. However, these water problems were not pre-existing. They were interpretations of the respective water flows, their origin or cause and their impacts. Residents of Susan's Bay formulated their own problematizations, had their own ways of dealing with these waters. Thus, when interpreting these conditions as forms of exposure, the question is what exposure meant in this context. Assembling different problematizations concerning the situation and conditions created by water in Susan's Bay, I have tried to address this question. The notion of the waste-water bond was helpful in capturing the complicated situation. The water problems that residents of Susan's Bay articulated were very much a relational affair. As such, it is crucial to see matters in this community as being affected by Freetown's general spatial composition.

The notion of the waste-water bond applied to both: tap water and storm water. But these raised different problematizations and practical responses. In other words, I have

looked at tap water and storm water separately in order to highlight different aspects and to make different points about problematization. One case was to emphasize the tension between homogeneity and heterogeneity regarding problematization, by showing the different nuances in the acts of defining the issue concerning tap water. This included different practical responses. The other case was meant to address the larger context of the water flow. How was the powerful stream of storm water that came down the Nicol constituted?

Firstly, I have taken a look at how tap water was problematized by residents of Susan's Bay; how they engaged with the water in different ways. The pipe in the gutter was a key figure of problematization: PVC hoses running through gutters filled a blend of sewage and other potentially harmful substances. Residents described how they engaged with tap water, mentioning forms of knowing or measuring water (by taste, smell, and visual appeal), of filtering or treating it (by shifting or boiling) and avoiding it (using packed water or alternative water sources such as Sawmill or rainwater). All of this indicates that there was considerable awareness and reflection concerning the quality (and quantity) of tap water. There were fine and stark differences in peoples' take on tap water. Some would drink it anyway, trusting their immune system. Others would consume packed water only, if this was financially an option.

Secondly, I engaged with the storm waters coming down Nicol Creek, especially after the first heavy rains around May or June. With the shift to the Nicol and problematizations of storm water flows, I also shifted attention to the diffuse spread of both urban excretions in the city and responsibility for it. Timothy spoke of "the dirt of the city" that came into his community. Sentiments of neglect and having to endure the pressure of the urban metabolism with its ongoing production of excretions were thought and expressed through an indexicality: residents of Susans's Bay would often point 'above' when speaking about water problems in their community. That is, the dirt that came with the water stemmed from the urban space upstream. Looking at things 'down here,' the problem was upstream.

6. The Production of Problematic Space

Freetown bled[39] into the sea. This was not only true in the general sense of currents of waste and sewage emanating from the city. In contrast to other coastal cities, the separating line between land and sea was not entirely clear. It was up for discussion, one might say. This was due to a practice called banking: Building into the sea through extension of grounds. The result of this push was habitable land to build on. This practice dated back to the 1990s, a period of time during which the city had experienced a high influx of war refugees coming from inland[40]. But ever since, it had also been a highly controversial form of producing space for living. It was labelled both dangerous and illegal[41]. Especially after the fatal mudslide and flooding events in August 2017, banked communities were depicted as being particularly at risk, with banking a practice to be shut down urgently. Together with hilly areas of the city, which were considered to be threatened by erosion, they were often referred to as "disaster-prone areas."

Though, what did this mean? Were there particular dangers stemming from banking as such? Or, was that perception mainly due to the fact that these communities were slums, located in menacing spots anyway? In this chapter, I engage with the ways banked communities and banking as such were problematized. The title "The Production of Problematic Space"[42] indicates that space, which was produced by means of banking, was turned into an issue from diverse angles, as I will show on the basis of my ethnographic material. Banking appeared highly ambiguous: It was both a technique of producing liveable space and something perceived by many as an embodiment of a dangerous and extreme form of urban sprawl. I will consider this ambiguity involved in perceptions and problematizations of banking. The aim is to capture what role banking played in this city. How was banking done as a practice and what were its characteristics and effects as a condition? And, in what ways was it connected to larger debates and issues such as urban growth or climate change? I will

[39] In fact, it is a technical image I am putting to use here: I am thinking of the 'backlight bleeding' effect/defect one might experience with monitors. The result of this are blurry spots which 'bleed' or flow into the normally displayed parts of the monitor.

[40] At a general level, Joe Alie writes that up to "one million Sierra Leoneans were displaced" (Alie 2016: 216) during the war – a massive figure when taking into account that the country's population in total is taken to be around six million.

[41] At times, the two were linked up and placed in a kind of causal relationship in the sense of: Certain things are prohibited precisely because they are dangerous. Though, obviously this did not necessarily have to be the case.

[42] In the style of Henri Lefebvre's famous "The Production of Space" (Lefebvre 1991).

suggest that there was a simultaneous invisibility and over-visibility of banking. That is, in regard to abstract or very general problematizations of urban sprawl, banking remained surprisingly implicit. On the other hand, at the (ground) level of specific communities and their reputations and issues, the matter was ubiquitous. Following this introduction, I will first look at the concrete practice, i.e. what banking was in practical terms, what steps it included, and what differences there were. After that, I will address problematizations of 'it.'

Regarding the framework of this study, banking is an interesting subject matter because – similar to some of the problematizations mentioned in the other chapters – it embodied and indexed larger concerns in the city, especially the limited quantity of affordable housing space. At the same time, banking was a very specific way of being and living in the city; living with and on water, so to speak. As such, banking and banked communities offer a telling perspective on the city of Freetown, not only as a context of problematization. When starting my fieldwork in Susan's Bay, I was quite baffled learning about residents who built into the sea, using waste or waste products as main construction materials. Yet, the idea of producing liveable space in the water or rather out of water appeared to me a fitting albeit disturbing way of navigating Freetown's tight and intense spatial condition. The matter was an excessive expression of the city's spatial composition, as it stressed negotiation and appropriation. However, as I learned later on, banking was not everywhere the same. There were different styles. In Thompson Bay, a community that I started to visit regularly in the second half of my stay, there were different conditions as well as practical techniques involved in building into the sea. This community was located at the border to Aberdeen Creek, a lagoon in Freetown's West. The Creek was connected to the sea and influenced heavily by tidal rhythms. While there were clear differences, as banked communities, Susan's Bay and Thompson Bay shared conditions of ambiguity and uncertainty. There was a certain precariousness involved which was linked to problematization.

In this way, I want to draw attention to conditions of instability, volatility, vulnerability, openness and over-visibility. This said, the aim is here to both carve out distinctive features of banked (slum) communities as well as learn about the city in the specific manner noted above. In a way, problematization was constitutive of both. Water played a key role in this. At a very general level, when banked communities were represented as being prone to disaster, this had to do with images of and assumptions about instability. Due to their being on water or in places where there

would or 'should' have been water, banking sites provoked the impression of being fragile. Banking materials, visibly peeling off into the water, were but one facet of this.

Water tends to defy stability in many ways. It can be highly destructive. I have already pointed out before, that this 'insight' was part of common experience in Freetown. I have also pointed out, though, that there were different kinds of water (flows), which shaped life and space in Freetown. Seawater and rainwater figured quite differently in Freetown. While the latter regularly turned into a daunting force during the rainy season, the former appeared – unless when speaking to fishermen or boatmen about shallows – as a relatively passive entity, a background even, which did not usually pose a threat. Franz Krause generalizes the difference between waters up when writing that seawater "figures quite differently in people's lives than the water in a river, and that again differently than the waters of a spring, canal, pump, well, pipe or reservoir." (Krause 2017a: 3).

In another text, Krause offers an interesting characterisation of deltas, which resonates well with the case of banking: "What is common to life in deltas, however, is a deep involvement with the movements of water. Deltas are characterised by an ever-changing interplay of land and water as a result of flooding, draining, drying and irrigating, sinking, silting, sedimentation, channelling, erosion, and reclamation. In short, delta life is amphibious." (Krause 2017b: 1). In banking, the movement and rhythm of water, both regular and irregular, played a crucial role. As a practice, banking depended on the tides, namely in regard to the time windows for the constructive steps of the procedure, especially so in Thompson Bay. The season also figured prominently because, with the rains, banking became more difficult.

While I would not go as far as to describe banking and banked communities as amphibious, it is worth taking note of certain similarities with deltas. In both cases the significant relationship at the bottom is that between seawater and land. While, unlike deltas, banked land remained dry (from seawater, that is) throughout the year, the sea nevertheless was very present. The land had to be maintained by reassembling or re-attaching materials. Also, a resident of Susan's Bay told me that one could hear the water beneath when bouncing heavily. While I could not confirm this assertion myself, it was clear that the sea was not excluded entirely by means of banking. It remained an important frame of reference. This was a critical point for those addressing banked communities from 'outside,' too; state bodies in particular. Problematization here revolved primarily around safety concerns, protection of the environment and illegal constructions. The fact that the boundary between land and sea was blurred by

banking, was something that caused irritation and fuzziness. Here, again, I suggest that it is worth taking a quick look at deltas. Atsuro Morita characterises these in the following way: "Because a delta is fundamentally an ambiguous place in between sea and land, its environment can be seen alternatively as an extension of the sea or as reclaimable land." (Morita 2016: 118). The way authors such as Krause or Morita define (life in) deltas is telling in regard to banking. For, their perspective offers a way of understanding why banking was perceived as something precarious, irresponsible and dangerous. Though, in contrast to deltas, banking was a very urban matter and, as such, it was connected to specifically urban concerns.

The irritation and fuzziness mentioned above stressed the radical ambiguity of banking. Authorities did not appear to follow a consistent and decisive path of action regarding the 'problem of banking.' Demarcation lines had been drawn in the past, in order to produce grounds of clarification. These lines had been crossed, however, and institutions such as the NPAA (National Protected Area Authority), which were in charge of managing protected areas and persecuting violations, seemed incapable of intervening at a grand scale. There were plenty of rumours, concerning the question why the banked communities were not cleared and demolished. But there were other forms of ambiguity too. This would apply, for instance, to the inability (or unwillingness) of those living on banked land to determine whether banking was actually dangerous or not, in particular in terms of stability. When asking this question, I noted the marking of difference between different communities and their style of banking, as I will elaborate further below. Yet, most of the time, the response I received was: "It depends." I think the image of "not quite firm land and not quite open water" (Krause 2017b: 1) is helpful when approaching banking. It suggests itself to tie ambiguity to problematization. Banking appeared radical and audacious. As such it provoked strong reactions, which sometimes expressed sympathy for the motives behind the practice, but often also anger and blame. It was not entirely clear whether banking was illegal in general or only so in protected areas. What was produced then in the process of banking was problematic space.

6.1. Banking Practice(s)

At the outset, it makes sense to look a bit into what this practice and condition called banking was. That is, what concrete practical steps it entailed and how it unfolded in the respective communities. Essentially, banking was a form of spatial appropriation

and the production of habitable space. It meant taking something from the realm of water and turning it into land, by means of labour and the use of (fit) materials. That is, different materials were filled up in a designated spot where land was to emerge.

As I have indicated above, the discussion taking place in this chapter is based on my fieldwork in Thompson Bay and Susan's Bay. Banking played a constitutive role in both communities. Yet, there were differences: Firstly, regarding the materials, techniques and environmental conditions that were involved. Secondly, the two sites differed in terms of proportion and relevance of banking, at the time of my field research. In Thompson Bay (and most of the neighbouring communities along the East side of the Creek) banking was practiced on a regular basis. I encountered several young men who earned most of their living by collecting materials and participating in this practice. It was a very common (economic) activity. Elder community members told me that residents had been banking here for decades. However, the proportion of banked land was fairly little. The community had pushed about one hundred meters into the Creek.

Susan's Bay, in contrast, was far bigger in extent and density. Also, here, large parts of the community were built on banked land. At the same time, the line between artificial and 'real' land was hard to see and banking as a condition barely noticeable. Only at the margins, where one could see the ragged boundary, the banked condition became evident. However, at the time of my stay, there was not much banking going on anymore, in terms of active building. In Susan's Bay banking was thus rather a condition than an ongoing process. Some told me that this was because the water was too deep at this point. Others said that the elder authorities were against further banking and intervened time and again. Here and there, I came across some of the cage structures, where material for banking was concentrated. But they were few. This did now, however, mean that banking did not play a constitutive role in this community. Apart from the remaining active sites, problematization of this condition played a significant role in how the community was perceived and framed. Assumptions about instability contributed to the more general image of Susan's Bay as a pool of maladies. This was also due to the kind of matter on which Susan's Bay was built.

The main materials being used in the banking process were a blend of sand and poto poto (mud extracted from the lagoon) – in the case of Thompson Bay (Figure 6.1.) – and waste – in the case of Susan's Bay (Figure 6.2.). As I have described in the previous chapter, Susan's Bay received considerable masses of waste products through Nicol Creek. Parts of this mass were recycled in the process of banking. In a literal sense,

residents of the community lived on a (floating) pile of rubbish, which supported above-mentioned perceptions as being a place of dirt and disease. Thompson Bay, in contrast, was built on a more earthy basement. The sand-mud-blend was banked up either in large plastic bags or lose(ly). In both communities, matter was accumulated, often so (in particular in Susan's Bay) by means of a wooden scaffolding.

In all of this, the tides played an important role – similar to deltas. At a very general level, falling and rising tide determined when the unlading of the material could take place. This applied especially to Susan's Bay where, during high tide, the water was much deeper than in Thompson Bay. That is, Aberdeen Creek, into which Thompson Bay grew, was not very deep. Even during the peak of rising tide, it was still possible to stand in the water in most places of the lagoon, especially so at its margins where the banking took place. However, here the tides played an additional role, as they defined the times when one could go out into the Creek to extract poto poto or, more valuable but scarce, sand.

The procedure of extracting poto poto looked like this: During low tide, people walked out into the Creek with shovels, empty bags, and a long stick or pole. At a spot, where the poto poto was of good quality (in terms of consistency), they collected the mud and filled it into the bags, which they then piled up. The heap was marked with the stick and everyone returned to the community. During high tide, people went back out, this time by boat, to transport the poto poto. They steered toward 'their' marking (of which there were, sometimes, plenty), one person dropped into the water and heaved up the bags. The other person placed the bags inside the boat, so that it would carry as many as possible without capsizing. Having done so, they shipped the bags either directly to a banking site or stored them somewhere in order for the poto poto to dry. Most of the time, I was told, it was the first option.

Reasons for why people banked varied. Some merely wanted to move to where their relatives lived, some wanted to be close to the socio-economic heart of the city, and some did out of necessity; sometimes these motives were intertwined. Freetown was a fast-growing place. In many parts of the city, prices for living space had risen painfully. Banking offered a way of claiming (relatively) affordable land in a favourable location, that is, close to the city centre. Susan's Bay was located directly next to the main market areas around the East of the city centre. There were hence

Figure 6.1.: View of Thompson Bay (photo taken by Lorenz Gosch)

Figure 6.2.: View of Susan's Bay (photo taken by Lorenz Gosch)

plenty of opportunities to 'hustle.' Thompson Bay was also not far from these areas (about fifteen to thirty minutes by public transport, depending on the traffic).

Albeit commonly labelled a slum community,[43] Thompson Bay also attracted people who did have considerable financial and social means. These means were important. For, apart from the expenses for the actual building, one had to get a permission from the community chief as well as from the households at whose border one wished to build (the neighbours in spe). During one of our walks through the community, Samuel and I came across a huge banking site. We learned that a local entrepreneur wanted to build a big hotel there. We were told that the materials used here were of higher quality, including cement. In order to keep out the water permanently, a solid barrier was established. I was surprised, when learning that the entrepreneur had acquired legal permission for his undertaking. This was confirmed by an official of the NPAA. Those I talked to about this large banking site, told me that the person had sufficient means to bribe the officials, who were responsible for handing out permits,

[43] A brief reflexion on the term 'slum.' This is especially reasonable since there is a connection between the disaster-prone area and the slum. Often, slum communities are located in places that are, in one way or another, hazardous. The notion as such is controversial and there is a debate on whether to use it or not in academic texts. Controversy is due to two main reasons. On the one hand, the notion produces a simple object inhabited by passive victims. In the course of this 'victimization,' those very human beings living in the respective communities appear bare of any agency. On the other hand, as Liza Weinstein (Weinstein 2014) points out, the term is regularly used by state bodies to criminalize respective communities and to practice slum clearance (see also Anand 2012: 491f.). Used this way, the term 'slum' would then be a means of marginalization. Freetown did have a history in slum criminalization and clearance, even though this did not happen as often and intensively as in other contexts. Especially the year 2015 was often remembered as a period of time, in which the government demolished many buildings. Fear of eviction was certainly present, although, depending on the political atmosphere at the respective moment, residents developed a certain degree of security through corruption routines. In Thompson Bay, for example, I was told in a nonchalant manner, that one merely had to tip "them" some money and "they" would leave them in peace for some time. However, in a similar fashion as Weinstein did in her work, I prefer to retain the term in my work, for two reasons. Firstly, I find the common alternative, namely to use "more neutral names" (Weinstein 2014: 8), problematic, in the sense that they might lead to trivialization. Secondly and more importantly, in Freetown the notion figured as both emic and etic classification. Both Susan's Bay and Thompson Bay were considered slums, one more so than the other. While in Susan's Bay I encountered a suffering narrative and a kind of self-consciousness as living in a slum on a daily basis, residents of Thompson Bay did not usually embrace that category. The community was labelled a slum from the outside, though. Meanwhile, Susan's Bay also served as a reference point for many residents of Thompson Bay, namely as the "real slum," which represented poor quality of social life. I came across stories about community members of Susan's Bay coming to Thompson Bay and its neighbouring communities at night, to steal boats. The notion was also used for the purpose of critique. For instance, I would often hear the phrase that "the whole city is a slum" when the speaking person – say, in a radio or TV show – wanted to make a claim about more general conditions and problems in the city, such as a dilapidated water infrastructure. In interpreting all of this, it is crucial to recognise that the notion of slum is not as much a scientific category as a political one (ibid.: 9).

or that he was well connected. In general, banking in Aberdeen Creek was deemed illegal because the lagoon was classified as a protected area. It was also, as I witnessed one day, described as a disaster-prone area. In the following part I will provide a vignette featuring this moment of problematization.

6.2. On Disaster-Prone Areas and Problematizations of Banking

(23rd of January 2018)

We reached the border to the lagoon. There were three men on a simple dug out, busy handling poto poto, a kind of mud which they collected in the lagoon during low tide. The mud had already been filled into bags. Now they threw them off-board onto a spot where there was to be new land for construction. Some of the bags were in quite a bad shape, exhibiting holes. Every now and then, we heard a deeper splash; that was when one of the bags had not been tossed far enough and had landed in deeper water. At this spot, the water was about hip-deep during high tide. We watched them for a while. The men didn't seem to care much about our presence. Next to us piles, of empty bags were waiting to be put to use. It was a little bit boring. Then, something happened.

At the tiny bay on the other side, a formally-dressed man appeared and started to shout at the three men working at the banking site. He told them to stop. Then he disappeared and, after a short moment of awkward silence, reappeared right where Samuel and I were standing. There were others as well. There was a bit of shouting back and forth. The men on the boat did react to his presence and demand but in a very vague manner. They remained fairly passive and kept handling the bags of poto poto. It was mainly the official and his colleague driving the situation. The formally-dressed man got a bit upset shouting „Eh, una stop dis!" He hopped over to the banking site and started piercing some of the bags which were already laid out to serve as a fundament. Somewhere he picked up a long stick. Neither the bags nor the men banking really reacted in an explicit way. There was no real effect. The bags were in bad condition anyway.

The officials – they represented the National Protected Area Authority (NPAA) – were visibly irritated but seemed slightly destitute in this situation. They damaged some of the bags and kicked some of the mud that had been laid out for a bit. I wondered why the men in the canoe did not react more aggressively. Later on, Samuel explained to me that they had merely been paid to do the job – that is, to load and unload a determined quantity of bags – and did not necessarily care about what happened with the banking site. The NPAA man in charge started explaining or declaring why they should not bank here. He seemed to be addressing no one in

particular, talking more or less to the lagoon. He conveyed that this (banking) was illegal because this was a disaster-prone area. He went on explaining the bag-damaging, stating that one merely wanted to save lives. If they, i.e. the people from the community, would not finally stop at this place (measured against a general progression into the lagoon), he would come back with police and the military and destroy all illegal structures. He stressed his point once more: "Nating hapin from here, nating!"

There was only a small audience to listen to his declaration. Apart from the white researcher and his field assistant there was a group of children and two or three adults, one of whom tried to talk to the NPAA guy and calm him down. Another community member somehow complied and started pushing away the empty bags. It was a strange situation. The NPAA man jumped across the water to another pile of bags and pierced some more, trying to break out bigger chunks of the half-solidified mass. Then he returned to firm land and threw some bags into the water. The three men on the boat, meanwhile, had unloaded their cargo and, without saying a word, just paddled out into the lagoon again, probably to pick up some more.

The NPAA man was apparently unsure concerning my role in this. In a discreet fashion he approached me asking what I was doing here "actually." I responded very briefly, stating that I was a researcher and here to do fieldwork. I had the impression that the shortness of my answer made him even more uncomfortable. In a quieter tone, he repeated his explanation of why he and his colleagues had come here and damaged the banking site. While it did seem to me like some sort of vindication, I became curious about this category of the disaster-prone area. I asked what he meant by that. He argued that one wanted to protect the people living here and that areas like these could be flooded easily. I asked whether banking was actually illegal, whether there was a concrete legal foundation one could refer to. He said yes but returned to his talk about disaster-prone areas.

The moment captured in this vignette took place in January 2018, dry season, pre-election time. Apart from getting a lively demonstration of banking and the mobilization of the 'disaster-prone area' as a category, I also learned about demarcation lines in Thompson Bay that day – a topic already mentioned in chapter two. We collected the cell phone number of the NPAA officer we met that day, Tejan Ky Sankoh, and called him later during my fieldwork, to ask for a meeting. This meeting took place in April, when I was researching the notion of the disaster-prone area more explicitly. During the interview, Sankoh told Samuel and me that they had destroyed the banking site "out of frustration." According to him, the NPAA deployed its teams to "control the slum communities" at the border to the sea – most of them banked communities. This took place in changing intervals, like waves, with a

frequency of a couple of months. Sankoh expressed his frustration about the ignorance of residents of these banked communities. He blamed them for being ignorant about prohibition, ignorant about nature and ignorant about disaster, which, as he repeated, was more likely to happen in these communities than elsewhere.

In the interview, I wondered aloud if the underlying motivation of the NPAA's engagement was really environmental conservation, or, rather, illegal encroachment into such protected areas. Put differently: Were they primarily fighting environmental pollution or crime? My differentiation came to nothing, as Sankoh merely gave me the answer that, yes, one wanted to protect nature ("mangroves and fish"), but that, in the end, people should not bank because they were living in disaster-prone areas. Which they did not do. They kept banking. The frustration concerning the presumed ignorance, expressed by Sankoh, was something that I noted frequently in conversations with institutional staff. However, although they did have the mandate and authority to destroy banked sites, as well as arrest those involved in banking, he said, they usually tried to work by discouraging people. Also, he went on, the government actually granted these banked communities a kind of buffer zone of fifty meters into the sea.

Sankoh's explanations did not provide me with much clarity, regarding the case of banking in the city. It did not become entirely clear whether banking was generally illegal, or, whether this applied only to protected areas. The motives for condemning banking seemed to alternate: Species conservation, protection of the environment, safety concerns, curtailing an urban sprawl that was linked to ignorance, fighting lawlessness. The disaster-prone area figured as a kind of envelope to problematize the practice and condition of banking. It allowed to mark both an empathetic as well as resolute stance.

Banking was also a difficult matter to be taken on by authorities, since (recent) residents tended to present them with accomplished facts. Monitoring could only take place sporadically. Then, there was the question concerning corruption. According to residents, officials could easily be bought. This diffuse general situation was at least one reason for why authorities did not crack down banking and banked communities. There were also rumours that politicians did not want to lose votes – noting that it was still pre-election time. Yet, the relatively diplomatic way of treating banking could have also simply been the approach chosen by the local and federal government.

"Every time we tell them to stop banking, but they just keep doing it." These were the words of one city counsellor[44] in Freetown, when I asked him about the banking situation in Susan's Bay. We were sitting in a large meeting room, with windows facing the sea side. Westwards, I could see the tip of Susan's Bay protruding into the sea. What exactly was the problem about banking was not spelled out in a concrete fashion. The response I received was that it was dangerous; and that I should take a look at these communities myself (which I had done already). "You will see!" he said in a gesture of obviousness.

While, when made explicit, problematization of banking was often fierce, it was noteworthy that often, especially in official statements, the actual banking remained implicit. Instances, where both banking as a practice and a condition were addressed explicitly, were exceptions. This applied to problematizations from the realm of public and global health as well; possibly even more so, since many of these actors operated by means of abstract schemes, which could be applied to a concrete (local) context. In addition, when typing in the words "banking" and "Freetown" in a search engine, there were about no results addressing this topic more closely. This was quite interesting, considering the number of sources addressing the city's slum communities in a more general fashion. Many of these were banked communities. There was, for example, an abundance of NGO websites speaking at length about living conditions in communities such as Susan's Bay. Or, take, for example, an article reporting about UNDP Country Director Mukerjee's statement concerning the importance of protecting Aberdeen Creek: "Mr. Mukerjee expressed concern over the rapid destruction of the Creek as a result of mangrove deforestation, encroachment and illegal construction."[45] Neither here nor anywhere else could one find a specific reference to banking in the text. It was not made explicit that the noted "illegal construction" took place *inside* the Creek.

Taking these aspects into account, I noticed a simultaneous invisibility and over-visibility or overemphasis of banking. Banking as a condition was very much present in the problematization of communities such as Susan's Bay and Thompson Bay. Often, though, in an implicit fashion, so that I had to drill down, to bring to the fore the banking aspect of the problematization. The above-quoted frustrated statement voiced by a councillor appeared all the sallower, when considering that banking had been taking place in Freetown ever since the civil war. As I was told by another

[44] Anonymized.
[45] https://sierraexpressmedia.com/?p=73919 (last access 19.05.2020).

councillor, banking (was) turned into an issue since the mid-2000s, mainly so in the slum communities around the city centre, which were the most congested and fluctuating. Thus, in a way banking was an established matter and problematizations of it very much embedded in larger concerns and debates.

The context in which banking was problematized was about concerns regarding Freetown's urban sprawl, which many perceived as being out of control. Criticism around Freetown often aimed at "poor urban planning" and management. Watching the TV channel AYV (African Young Voices) several times a week[46], I noted this very often. After the August 2017 mudslide and flooding events, questions were voiced, why the government had allowed people to build on the hillside of Sugar Loaf Mountain (where the mudslide had taken place), and what was going wrong with urban planning in general. There were also speculations about whether some institutions had actually known about the risk. In short, the government was accused of not preventing 'its' citizens from building in disaster-prone areas. Take, for instance, a statement of Julius Spencer (formerly Minister of Information): "I have heard some reports which claim that most of the buildings in these disaster prone areas were constructed illegally. But as far as I am concerned, even if that is true, that does not exonerate the government from blame, because those building [sic!] in these disaster prone areas should have been stopped."[47] A statement such as this appears particularly interesting, when thinking back to the vignette presented above. NPAA official Sankoh had emphasized that people should stop banking because they were in a disaster-prone area. What did it mean, when officials or critics spoke of disaster-prone areas? What was there to learn about Freetown, when the NPAA official declared that the respective part of Thompson Bay was one such area?

It makes sense to reflect on the 'disaster-prone area' as a category more broadly. In other words, what did this notion do? Apart from being a politico-ecological labelling device, the notion was also a means of designing a future of a particular kind. An otherwise given openness (or contingency) was narrowed, squeezed by the shaping figure of disaster. In his conceptualization of engagements with different forms of the future, Anderson speaks of a "problematization of the future" (Anderson 2010). When thinking about the disaster-prone area – as a category, which may be deployed –

[46] At Guma's Station West, where I worked with water workers, the TV was on most of the time. So, during the times of waiting I watched a lot of AYV programmes.
[47] https://www.thesierraleonetelegraph.com/freetown-floods-disaster-father-of-the-nation-and-crocodile-tears/ (last access 20.06.2020).

Anderson's formulation seems fitting. The question, however, was whether the use of this category was based on empirical values. By this I mean, primarily, the assessment of risk based on and produced by scientific and technical standards. That said, neither at the city council nor at the NPAA I could get reliable data on this matter. Officials would point out that it was obvious, that slum communities such as Susan's Bay were disaster-prone, especially in regard to flooding. I did not come across 'hard evidence' anywhere. Rather, there was projection. This is, where another kind of empirical value comes in, namely past experiences made by residents.

There had been experiences of disaster of various scales. Flooding could be seen as being relatively repetitive. Yet, this applied to specific areas of the city. It also contrasted with or at least differed from accounts of residents of the so-called disaster-prone areas. Residents of Thompson Bay would usually point out, that their own community did not experience flooding events as heavy as those in other parts of the city, for instance Susan's Bay. In Susan's Bay, in turn, I was told that, yes, one suffered regularly from severe flooding, but that this was not due to the banking condition. Rather, this was the result of those flows of storm water coming down the Nicol, as discussed in chapter five. In general, while sometimes banking sites did collapse (partially) at the very outskirts of communities, where there was the most exposure to the dissipating effects of marine water, I did not come across depictions of banking as being seriously dangerous anywhere in the two communities, I conducted research in. Labels as being prone to disaster were seen here either as overdramatic or as a way to stigmatize, if not criminalize, Freetown's slum dwellers (not necessarily poor). Some residents did, however, agree on that banking should no longer be practiced, because it had become "too much." Interdiction from this perspective made sense.

Taking into account both the absence of 'hard statistics' as well as residents' different experiences, it seems as if the category of the disaster-prone area was not necessarily the result of intense scrutiny or analysis. It appeared rather vague. Further above, I have suggested that the notion figured as an envelope of problematization. In regard to banking, this appeared to be one of the notion's modes of operation. While, when applied to the hilly areas of the city, the notion was to point at the concrete and more or less acute erosion risk, in relation to Thompson Bay and other banked communities, it added a certain emphasis or dramaticism to more general problematizations. It was a vague method to raise an *issue* in an overall context that was highly sensible to or aware of precarious environmental settings. In a way, it was an expression of a

desperate endeavour to limit an urban growth that appeared out of control and which produced situations which cost lives and damage.

In the previous parts I have mentioned different types of water. Considering the disaster-prone area and the ways it explicated specific future designs, it is worthwhile pointing out that this future was written into water. The August 2017 mudslide and flooding events had certainly opened up an intense frame for problematizing the city's future though rainwater. This frame connected Freetown and its precipitation patterns to larger concerns about climate change, deforestation and urban growth. By being tied to these larger concerns, too, problematizations of banking were indirectly connected to the forest-water bond depicted in chapter two, as well as the waste-water bond I have discussed in chapter five.

Within the context of the problematizations of urban growth, banking figured as a particularly wild form of urban sprawl. Obsolete demarcation lines appeared as witnesses of this process. Almost furiously another NPAA officer showed me the point where the line had been in Thompson Bay. It was in the middle of buildings, many of which looked as if they were already some years old. The community had grown significantly beyond the small post which was supposed to mark the point after which there was to be no more banking. "They just do it. They just build. Most of them, they don't care about permission" the officer explained. Taking into account the unclarity or indecisiveness on the side of the authorities as well as the implicitness in more general acts of problematization, I suggest that banking was a highly fuzzy subject matter. One could assume that the legal and political fuzziness resulted from a kind of ontological fuzziness: Similar to deltas, banked land was neither sea nor real land. It appeared to be somewhat in-between. Relating this to my ethnographic material, I suggest that banking provoked images of instability, which could be tied to the notion of the disaster-prone area.

6.3. Shifting Perspectives

The ethnographic description presented above has a second part. After the incident at the banking site, Samuel and I went back to "Understick," the main community place to hang out and intermingle. There, we had an interesting conversation with an elder community member of Thompson Bay, which adds some 'flesh' to my discussion of banking. This section is about the shifting of perspectives on the risks of banking. That

is, I engage with the account of a resident of Thompson Bay, in order to highlight the differences and nuances that were involved in problematizations of the matter.

There were a couple of people sitting around, chatting, smoking weed, and drinking. Young and old. Among them was also a more elderly woman who sold drinks and seemed to be kind of 'in charge.' We told her about what we had seen and asked her about her opinion. She said that she herself had banked in the past, her house being located at the very line beyond which there should have officially (at the time) been no more banking. I asked myself why banking might have been limited to a certain point or line. Was it because the water would be too deep at a certain point so that foundations might dissipate too quickly? That would certainly render banking a possibly dangerous practice. Or was it because one wanted to preserve the lagoon? Or was it simply because the government wanted to stop people from building wherever they wanted?

Be that as it may, the woman suggested that the proscription was reasonable, although, she continued, one could not keep people from banking further; simply for the reason that land was not only scarce in Freetown but also expensive. Many people could not afford to live elsewhere in the city. I asked her if she thought that Thompson Bay was a disaster-prone area. She negated that pointing out that the community did not have problems with severe flooding. Even in August 2017, she said, during the heaviest rains, there had only been minor damages in the community; in contrast to the "real slums" around the city centre, notably Kroo Bay and Susan's Bay. From the side of the lagoon itself, she added, there was never a real threat. Another, younger woman joined in after she hears the name Susan's Bay. She picked up the topic of banking again and argued that there was "good banking" and "bad banking" (Figures 6.3. and 6.4.). *Those people in Susan's Bay, she claimed, did not know how to bank properly, how to bank safely. The older woman added to this that if one wanted to bank properly one had to use combined materials, not only poto poto; cement for instance. (Something that was not done by everyone in Thompson Bay)*

She then shifted to the situation we had described. She said that the usual procedure would be that one bribed those NPAA men with about three or four hundred-thousand Leones (about 30-40 Euros). *After that the NPAA would leave them in peace for a couple of months. I told her that these NPAA men had caused a bit of damage, indicating that they were maybe more committed than others who would just take the bribe. She then wanted to take a look at the damage. Together we went to the community-lagoon border. We saw the NPAA men again, further away now at another tiny bay of another sub-community, and again damaging some of the sprouting banking sites. But the woman merely shrugged her shoulders and instead of*

commenting the issue at hand returned to "bad banking," namely by stating that poorly banked land could collapse under high water pressure.

So, bad banking it was. It was true that banking materials were different in Susan's Bay. Most of the mass accumulated for creating land was waste (Figure 6.4.). Timothy Conteh, my key interlocutor in the community, told us that residents in Susan's Bay actually recycled their own waste in the process. The community received large masses of waste, as described in the previous chapter. Whether the material used for banking was 'theirs' was hence only relevant in regard to the allocation of blame. Asked whether they would consider their own community as being prone to disaster, people in Susan's Bay produced an image which involved the question of responsibility more explicitly. As I said above, all of those I talked to shared the view that the community was prone to flooding. Yet, their problematization emphasized their relation to the more elevated rest of the city.

The elder woman in Thompson Bay, who told us about the conditions of banking, rejected the label disaster-prone area, namely by stating that the community did not regularly experience any flooding. She also pointed out – placing the problem elsewhere – that Freetown offered too little space for living while being expensive. She did, however, indicate that banking as such could be dangerous, that is, when practiced poorly. Also, she made use of a common point of reference for all kinds of issues: Susan's Bay. At the same time, in her depictions of how to pay off officials, there was something jaded. Clearly, her critical stance toward the NPAA labelling and 'harassment' also conveyed a certain frustration about the arbitrariness of authorities.

Meanwhile, the story about the supposed "bad banking" of those living in Susan's Bay took an ironic twist. Distinctions between good and bad forms of banking were about technique and materials used. Banking sites in Susan's Bay were seen as being especially vulnerable, because they consisted of waste materials which was not as cohesive (in the sense of sticking together) as the blend of sand and mud extracted from Aberdeen Creek. Susan's Bay was also perceived as 'the real slum,' associated with dirt, crime and disease. The community's reputation dyed the way banking was seen. However, when asking Thompson Bay resident Marah about the large banking site, where an entrepreneur wanted to build a hotel, he told me that, in contrast to what many in the community thought or expected, he did not use "high quality materials" only. In fact, he said, large parts of the site were filled up with waste that the entrepreneur had organized elsewhere; because using cement, sand and poto poto was

Figure 6.3.: Bad banking in Susan's Bay? (photo taken by Lorenz Gosch)

Figure 6.4.: Good banking in Thompson Bay? (photo taken by Lorenz Gosch)

too expensive. In this sense, banking at this somewhat 'prestigious' site in Thompson Bay, was done in a way that resembled banking in Susan's Bay. Whether this 'insight' was true or not, I could not tell. It gave the whole vagueness that filled the air around banking another twist. There were different ways of banking, also within the respective communities. The practice itself was highly charged anyway.

My discussion of the material presented in this section has placed emphasis on the kinds of difference and nuance involved in banking. The word banking as well as the notion of the disaster-prone area were suggestive of homogeneity. They simplified something that, in reality, was highly heterogeneous and charged with various actors, motives, techniques and perception. There was also considerable contradiction both within as well as between the communities of Thompson Bay and Susan's Bay.

6.4. Summary

In this chapter, I engaged with banking both as a practice and a condition in the communities of Thompson Bay and Susan's Bay. Banking was an interesting subject matter because it appeared representative of Freetown's urban growth, which had gotten out of control. The aim was to bring to the fore the different degrees of vagueness and heterogeneity involved in banking. On the one hand, this contributed to the problematization of 'it,' as it produced a fuzzy object that appeared chaotic. As such banking could be used as an object to project on ignorance, urban sprawl and other larger concerns. On the other hand, the vagueness resulted in a complicated situation which was hard to navigate for the authorities in charge, in particular the NPAA. Often these found themselves confronted with *faits accomplis*. Banking had pushed communities far beyond old demarcation lines and had rendered these obsolete. It was also widely recognized that field officers could be bought. The situation was quite tangled. In terms of visibility and (public) attention, banking was very much a local concern. That is, it remained implicit in official accounts of issues in the slum communities of the city and it was invisible in problematizations of foreign actors. Yet at the ground level(s), banking was very much present; for some a way to live in a Freetown that had become expensive and limited space-wise; for others a massive problem and embodiment of ignorance and a particularly wild form of urban sprawl.

In the first section, I have addressed the question what banking was in practical terms. That is to say, I have shed light on it as a practice: How it was done, what materials

were used and how it involved the environment (such as tides). In Thompson Bay, the main materials were taken from Aberdeen Creek. Residents went out to extract poto poto and sand which they transported by boat to the respective banking sites. In this community, banking was a common practice and way of earning a living. In Susan's Bay, banking was done by accumulating waste products in scaffoldings which had been established at the designated spot in the water. My interlocutor Timothy had referred to the use of garbage for building as a form of recycling. In both communities, banking necessarily involved paying attention to the sea. On the one hand, the tidal rhythm was a key condition regarding the times when one could fill up the banking site. This was particularly important in Thompson Bay since water levels inside the Creek varied heavily with the tides. On the other hand, it was important to have an eye on the dissipating effects of the seawater both in terms of pressure and movement as well as the physical effects of salt.

I have also engaged with banking as a condition: What role did it play in the two communities, what was its recent state. In Susan's Bay active banking was relatively scarce. Over about two decades, the community had already grown far into the sea, and the water at the periphery was quite deep during high tide. Also, established residents and the chief were generally against banking any further – which did not mean that it did not take place. In Thompson Bay banking was much more an active process. All along the Creek, there were fresh banking sites and during low tide one could see several people walking in the lagoon to collect and mark poto poto, which they would pick up when the water had come back.

In the second part of this chapter, I have taken a look at problematizations of banking. The initial material for my discussion was a moment during my fieldwork in Thompson Bay, which I have described in a vignette taken from my fieldnotes. During this moment, a staff member of the NPAA confronted three workers at a banking site, arguing that they should stop because this was a disaster-prone area. This was the kind of confrontation that happened every once in a while, as such quite ordinary. However, the moment made me curious in regard to how banking was framed as an issue. The matter was generally problematized by referring to a range of concerns. The three main concerns were (1) about the destruction of the environment through banking, including the threatening of species (mangroves, fish, birds), (2) about a crime similar to "land grabbing" and the encroachment of protected areas, and (3) about the construction of houses in so-called disaster-prone areas which implied that these were especially exposed and vulnerable to flooding.

I have paid particular attention to the notion of the disaster-prone area because it was summoned up in the situation described in the vignette. Taking into account the (interpretive) context of banking, I have suggested that the notion served as a kind of envelope of problematization. It was not dependent on being empirically based or having a solid foundation. In the beginning, I have compared banking with life in deltas in order to emphasize the vague character of it and the way banked land was somewhat in-between. Neither was the kind of land generated in the process still water nor was it real soil. Banking clearly provoked impressions of instability and thus, vulnerability. As such, it made sense to declare banking a dangerous practice, even if specific banked communities did not experience any trouble with collapsing land or the like (at a scale interpreted as 'serious'). I have also pointed out that residents of banked land generally did not confirm the statement that it was disaster-prone – although, I did observe that elder or more established residents did agree with a ban on banking (while acknowledging that there was a reason for why people did still bank). The notion of the disaster-prone area enabled representatives of the NPAA to condemn banking through an empathetic but resolute position. At the same time, this form of problematization could easily be combined (hence "envelope") with other concerns and larger problematizations, as pointed out above. Banked communities were built on water. As such they appeared materially unstable. They were, however, further destabilized and rendered precarious through problematization and the spectres of persecution and clearance.

The third section fulfilled the role of adding further complexity to the matter. On basis of my ethnographic material, I have pointed out that there was considerable difference as well as accentuation involved in perceptions and problematizations of banking. In the vignette, I have described how residents of Thompson Bay distinguished between bad banking – use of inadequate material and poor skill – and proper forms of it. An elder resident referred to Susan's Bay, in order to underline where this kind of "bad banking" could be found. Banking, both as a condition and a practice, was highly charged. In some ways, it seemed to serve as a projected area to speak about larger issues. This, in turn, meant that looking at problematizations of banking was an interesting entry point regarding such larger debates and issuefications.

7. Conclusion

There was something of a joke in Freetown. When, in October 2017, I went down to the docks in Aberdeen to wait for a friend coming from Lungi International Airport, I overheard a conversation between two men. They were joking about foreigners who arrived in the city carrying umbrellas to protect them from the rains. Not for long and these foreigners then came to know how naïve they had been. They had underestimated the sheer amounts of wet that, in eruptive moments, soaked the streets and human bodies during the rainy season. I also brought an umbrella when entering Freetown's rainy season for the first time. This particularly small specimen of an umbrella never made it out of my suitcase, so astounded was I given the powerful rains and the currents these created all over Freetown. What useless and ridiculous item to bring. This was one of the first things I learned when coming to Freetown.

The city was soaked

This dissertation began with an ethnographic snippet about a taxi ride through Freetown during a heavy downpour and ends with one about the futility of the umbrella in this water-defined city. Both snippets point at something important regarding the genesis of the present text: they point at the 'insight' that water is not everywhere and not always the same. This is due to the locally-specific connections water is enmeshed in and through which it may develop different effects. This becomes particularly evident and dramatic when speaking of water problems. These are situations and conditions shaped by water connections which are the cause of many concerns and which hence involve the definition of causal relations – what caused the problem? Freetown was soaked during the rainy season and in ways that caused trouble on a regular basis. Due to the steep vertical terrain profile and the absence of a drainage system capable of managing the masses of storm water the city was often flooded and severe damage occurred. Seven months of fieldwork, at some point the rainy season came to an end but still I kept learning things about water: Freetown was soaked with water problems and other issues throughout the year.

There was a general sense of urgency and necessity in the city. As I have pointed out before, referring to urban space and life in Freetown in terms of problems was a highly prevalent mode of thinking and framing this place. The city was saturated with problems – poverty, disease, lack of access to safe drinking water, domestic violence and so forth. A plethora of actors in the city engaged in the formulation of issues on a

daily basis; and the image of Freetown as a melting pot of problems was fairly visible and perceptible, that is, in the form of sensitization posters and phrases on walls or cars. In this sense, the focus on problems was not something that I projected onto Freetown. Rather, it was something that I observed while living in this city.

At the beginning of this dissertation, I was concerned with the question of how one can conceptualize cities. I then explained why I chose to approach the city of Freetown through its water problems. These played a big role in Freetown's everyday life, in various ways. To be accurate, my focus was on the life and composition of *water issues as the main subject matter* of my study. I developed a pragmatist perspective on the constitution of issues in this city and how these revealed diverse processes of negotiation taking place in Freetown. That is, I made two basic shifts to advance my argument: (1) from water (as such) to water connections, and (2) from problem to problematization.

Shifting

Methodologically, I traced the flow of water in Freetown to observe the social reality of the conditions and situations concerning water connections. There was no water 'as such,' doing this and that. Water produced its effects in the context of its connections, for instance by linking low pressure regimes with porous pipes, bacteria and human bodies. I have suggested that thinking Freetown in terms of water connections is a fruitful undertaking. I traced the pipelines and arroyos downstream as these were some of the many constitutive veins of the city's infrastructural body and helped me to unearth diverse bundles of water connections. The most explicit example of this was the forest-water bond, assembling and linking acts of land grabbing to deforestation, the (im)permeability and integrity of infrastructure, water quality and quantity as well as the future of Freetown. The focus on water connections offered a perspective regarding the various interrelations with their frequent disruption and other issues composing urban life in Freetown. The diverse water connections also provided the reflective space for problematizations as they were articulations of a wide "spectrum of concerns" as Noortje Marres would call it (Marres 2014: 263).

Problematization is the act of defining a problem. I conceive of water problems not as something given as such but, rather, as the result of interpretation. The point is that, depending on who one asks about a specific problem, the answers will differ. Sometimes slightly so, sometimes drastically. That is to say, a problem does not only

'consist' of "this is the problem." Problematization also involves the drawing of connections of different kinds. This includes explanations and assumptions regarding the following: (1) What caused it? (2) Who is accountable, as in: who is to blame for causing it? And (3) who is responsible, as in: who needs to find a solution and fix it? (4) Who is affected (the most) by this and how severe is it? Taking this into account, while there might be agreement regarding the question "what's the problem?" in the basic first instance, disagreement may pop up when asking more precisely. Problems, seen in this light, are interesting because there is so much contained "in them." They are interpretive bundles. In the course of my fieldwork, I have researched various such bundles involving Freetown's waters.

Why problematization? As I hope to have shown, this approach offered a way of diving deep into the fuzzy negotiations that were taking place in Freetown, a city which was charged with a general sense of urgency and necessity. Interpretive frameworks used to problematize a particular issue in a particular place and context are drawn from broader public debates. Problematizations therefore offer themselves as useful objects for the ethnographic study of the ways in which particular issues are negotiated by relating them to broader issues that transcend the particular place. For this reason, I chose problematization as the conceptual linchpin of this text. This focus enabled me to assemble a range of problematizations articulated by different actors with different stakes regarding the matter of concern. The chapters attended to different water problems – as acts of interpretation – and nets of connections they touched upon across Freetown.

What I have tried to show is that some acts of problematization succeed in linking particular local issues to more general ones discussed across the city. These problematizations thereby orchestrate larger publics, such as debates on urban planning or waste management. One way of enlarging the different local and particular problematizations, that I portrayed in my chapters, was by adapting them to more general issues and topics. For example, responsibility – and irresponsibility in particular – as well as accountability was a common theme in many problematizations. Who was to blame and who was supposed to solve issues? This applied to concerns about urban sprawl, land grabbing as much as to dysfunction, the state of the city's water pipes, waste disposal in gutters or the legitimacy of banking.

Considering contradicting problematizations, they obviously need a certain common ground to contradict each other. There was, for example, general agreement on that Freetown's water infrastructure, operated by Guma Valley Water Company, was in a

bad state and that leakage and the insufficient and unequal access to safe drinking water were a condition that caused disease and death and that this should be changed. However, when looking more closely into this, things became more and more complicated, intertwined and charged with interpretations invoking feelings of frustration, neglect and worries. In other words, when diving deeper into problematization, difference, nuances and contradiction came to the fore. One key element in the problematization of the water system were the system's pipes. In tracing how water was brought into and through the city, how it disappeared through invisible pipe leaks, how it visibly gushed out of washouts that disrupted traffic, and how it spilled out of freshly drilled pipe holes, I witnessed different kinds of problematization along the water routes – from concerns about pipe cutting to fears about contamination in the gutters. But I also saw that some issues remained relatively unproblematized until something else happened to trigger their problematization, such as the mass of water sachets accumulating in the gutters of the city which contributed to the flooding of communities such as Susan's Bay during the early rainy season.

Final thoughts

By attending to problematization it is possible to refute stereotypes about African infrastructures, African urban life or simply "Africa" as such. By focusing on concrete acts of problematization and hence providing a thicket of perspectives, I have tried to render simplistic accounts futile. I have furthermore kept my study as small and narrow as possible, trying to write only about Freetown, except for references to other anthropologists working on similar issues, also from other regions. For my own case, Freetown's water problems, I proposed to consider a shift from AbdouMaliq Simone's description of African cities as "works in progress" (Simone 2004: 1) to conceiving them more specifically as *problematizations in progress*. There was a lot of work in progress like tinkering, salvaging, bricolage, hustling, and improvising around water issues. Yet, my main focus was less on how these practices worked and more on how they were problematized as well as how these problematizations were negotiated. Many of the problematizations touched on existential issues. The focus on problematization offered a glimpse of how irregular water supplies, coupled with diffuse responsibilities, translate into concrete suffering for those who may not be able to choose the circumstances in which they live.

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Eidesstattliche Erklärungen

Eidesstattliche Erklärung

Hiermit versichere ich, dass ich die Dissertation selbständig verfasst habe und keine anderen als die angegebenen Quellen und Hilfsmittel benutzt habe.

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Hiermit versichere ich, dass gegen mich keine Vorstrafen vorliegen und keine laufenden Ermittlungs-, Straf- oder Disziplinarverfahren anhängig sind.

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Hiermit versichere ich, dass ich noch keine vergeblichen Promotionsversuche unternommen habe und diese Dissertation in der gegenwärtigen bzw. in einer anderen Fassung an keiner anderen Fakultät vorgelegt habe.

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