Title

Navigating the Waters of Flood Mitigation in Jakarta: Promoting and Contesting Expert Knowledges

Permalink

https://escholarship.org/uc/item/46v8x9h2

Author

Colven, Emma Louise

Publication Date

2018

Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA

Los Angeles

Navigating the Waters of Flood Mitigation in Jakarta: Promoting and Contesting Expert

Knowledges

A dissertation submitted in partial satisfaction

of the requirements for the degree Doctor of Philosophy

in Geography

by

Emma Louise Colven

2018

ABSTRACT OF THE DISSERTATION

Navigating the Waters of Flood Mitigation in Jakarta: Promoting and Contesting Expert

Knowledges

by

Emma Louise Colven

Doctor of Philosophy in Geography University of California, Los Angeles, 2018

Professor Helga M. Leitner, Co- Chair

Professor Eric Stewart Sheppard, Co-Chair

While urban adaptation projects are designed to protect urban residents, their differentiated impacts on communities warrant critical scholarly attention. This dissertation contributes to deepening our understanding of why particular forms of adaptation prevail over others in different contexts and the implications for social and environmental justice by examining the planning, promotion and contestation of Jakarta's planned Great Garuda Sea Wall (GGSW) project. Drawing on a critical discourse analysis of the project master plan and supporting engineering and financial reports and documents, press releases, policy documents and legislation, and news articles from local and national sources, as well as 60 in-depth interviews with consultants, bureaucrats and activists conducted during

seven months of cumulative fieldwork in Jakarta and the Netherlands, I examine how different environmental imaginaries, situates forms of expertise, and discourses are mobilized by consultants, bureaucrats, and activists in debates concerning flood mitigation. Chapter 2 examines how the GGSW project retains its allure as the optimal solution for Jakarta, despite failing to address what is understood to be a primary cause of flooding: land subsidence. Drawing on the theoretical insights of science and technology studies, urban political ecology, and postcolonial urban theory, I contribute to understandings of the political and economic forces that drive large infrastructure projects. While Chapter Two illustrates the broader structural processes driving the project forward, Chapter Three documents the processes of articulation between Dutch consultants and Indonesian bureaucrats. I interrogate both the disruptive and productive elements of friction, as Dutch consultants seek to realize the GGSW project in Jakarta. Examining the GGSW project as a liminal project that constitutes neither a success nor a failure, I advance theoretical understandings of policy immobility and failure. Chapter 4 examines the contentious politics of flood mitigation in Jakarta more broadly through an analysis of the environmentalism of Forum Kampung Kota, a network of activists, architects and academics. By tracing its changing tactics, from one centered on appeals to social and environmental justice to what I call 'insurgent expertise', this chapter enriches understandings of localized and differently positioned forms of environmental politics.

The dissertation of Emma Louise Colven is approved.

Judith A. Carney

Ursula K. Heise

Helga M. Leitner, Committee Co-Chair

Eric Stewart Sheppard, Committee Co-Chair

University of California, Los Angeles

2018

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS

ASF-ID	*Architects San Frontiers-Indonesia*
BAPPENAS	*Badan Perencanaan Pembangunan Nasional*/Indonesian Ministry of National Development Planning
BBSWCC	*Balai Besar Wilayah Sungai Ciliwung-Cisadane*/Ciliwung-Cisadane River Basin Authority
CRN	Ciliwung River Normalization
DDA	Dutch Delta Approach
DKI Jakarta	*Daerah Kota Istimewa*/Special City Region of Jakarta.
FKK	Forum Kampung Kota
GGSW	Great Garuda Sea Wall
JCDS	Jakarta Coastal Defense Strategy
JRMK	*Jaringan Rakyat Miskin Kota*/Urban Poor Network
JUFMP	Jakarta Urgent Flood Mitigation Project
LBHJ	*Lembaga Bantuan Hukum Jakarta*/Jakarta Legal Aid Institute
KIARA	*Koalisi Rakyat Untuk Keadilan Perikanan*/The People's Coalition for Fisheries Justice
KNTI	*Kesatuan Nelayan Tradisional Indonesia*/Indonesian Traditional Fishermen Union
LBHJ	*Lembaga Bantuan Hukum Jakarta*/Jakarta Legal Aid Institute
Menko	Indonesian Ministry of Coordinating Economic Affairs
NCICD	National Capital Integrated Coastal Development
Perpres	*Peraturan Presiden*/Presidential Regulation

PU   *Pekerjaan Umum*/Indonesian Ministry of Public Works

UPC   Urban Poor Consortium

VOC   *Vereenigde Oost-Indische Compagnie*/Dutch East India Company

ACKNOWLEDGMENTS

Emma Louise Colven

Education

M.A.	Cities, King's College London	2013
B.A. (Hons)	Geography, University College London	2012

Publications

2018   Leitner, H., S. Webber, E. Sheppard, and **E. Colven**. "Globalizing Urban Resilience" *Urban Geography.*

2017   Colven, E. "Understanding the Allure of Big Infrastructure: Jakarta's Great Garuda Sea Wall Project." *Water Alternatives* 10(2) 250 – 264.

2017   Leitner, H., **Colven, E**. & E. Sheppard. "Ecological Security for Whom? The Politics of Flood Alleviation and Urban Environmental Justice in Jakarta, Indonesia" in Ursula K. Heise, Jon Christensen & Michelle Niemann (Eds.) *The Routledge Companion to the Environmental Humanities.* (pp. 194 – 205). New York: Routledge.

Grants, Awards and Fellowships

2017   UCLA Department of Geography Teaching Assistant Award

2017   UCLA Dissertation Year Fellowship

2015   UCLA International Institute Research Fellowship

2015   UCLA Graduate Division Graduate Summer Research Mentorship

2014   UCLA Department of Geography Helin Research Travel Grant

2014	Urban Humanities Initiative & The Andrew W. Mellon Foundation Student Research Grant, UCLA	

Teaching

2017	Instructor of Record.	UCLA Department of Geography
2017	Teaching Fellow.	UCLA Department of Geography
2016	Teaching Associate.	UCLA Department of Geography
2014 – 5	Teaching Assistant.	UCLA Department of Geography

Chapter One. Introduction

In February 2007, Jakarta and its residents suffered the greatest flood event in three centuries (Brinkman & Hartmann, n.d.). An estimated 40% of the city was flooded[1], with floodwaters reaching depths of up to four meters. 80 lost their lives and some 340,000 people were displaced across the greater metropolitan region (Dartmouth Flood Observatory, n.d.). This proved a pivotal moment: the Indonesian government requested the assistance of the Dutch government with regards to understanding the causes of flooding and "non-structural" issues relating to water management and governance. This culminated in the master plan for the Great Garuda Sea Wall (GGSW) project[2] in 2014, designed by a consortium of Dutch firms under contract with the Government of the Netherlands in collaboration with several Indonesian ministries and the provincial government of DKI (*Daerah Kota Istimewa*/Special City Region) Jakarta. Touted as one of the world's most ambitious flood defense projects (Stedman, 2014), the master plan proposes construction of a giant sea wall to enclose Jakarta Bay, creating an offshore retention lake with hydraulic pumping stations to maintain a low water level. One thousand, two hundred and fifty hectares of land will be reclaimed from Jakarta Bay in the shape of the *Garuda*, a mythical bird and Indonesia's national symbol.

The downscaling of environmental governance in recent decades has put cities at the forefront of efforts to respond to environmental change, as key sites for developing and implementing climate adaptation strategies (While, Jonas, & Gibbs, 2010). Designed to ensure the material and ecological

---

[1] Estimates of the percentage of the city that was inundated range from 40% to 75% (Dartmouth Flood Observatory, n.d.).

[2] The GGSW project is officially referred to as the National Capital Integrated Coastal Development project or NCICD.

reproduction of cities, adaptation projects take various forms. The GGSW project is exemplary of a prevailing form of urban adaptation: 'integrated' mega-projects incorporating private capital investment that emphasize technological solutions to environmental problems, such as South Korea's Saemangeum Sea Wall (completed in 2010) and China's Tianjin-Binhai "eco-city" project (Chang, Leitner, & Sheppard, 2016). These large-scale technological interventions, over which the specter of twentieth century developmentalism looms, deploy technology and engineering infrastructure in order to control nature and put it in its 'proper place'. By contrast, other strategies are beginning to reimagine the relationship between humankind and our environment. These efforts reflect an "ecological turn" (Disco, 2002), which has generated solutions to environmental challenges that attempt to plan *with* nature, rather than against it. Exemplary of this are "floodable designs" in Rotterdam – buildings and public spaces designed to accommodate floodwaters – and the Dutch program of making 'room for the river' (*Ruimte voor de Rivier*) – moving dykes farther back from rivers to accommodate higher levels of water. Other imagined solutions include designs for "living breakwaters" in New York City to protect Staten Island from sea-level rise – rock walls that dissipate wave energy and provide a habitat for finfish, shellfish, and lobsters, embracing ocean waters while increasing public awareness of risk (Rebuild by Design, 2015), and permeable and flexible designs such as artificial reefs built using oysters or recycled-glass (Bergdoll, 2011).

Where do ideas about adaptation originate from, how do they circulate, and why do they gain traction? Whose urban environmental imaginaries and expertise become hegemonic, and whose are silenced? For whom is adaption planned? This dissertation takes up these questions in Jakarta, Indonesia using the planned "Great Garuda Sea Wall" (GGSW) project as a lens through which to examine the politics of urban adaptation. Though an extensive literature has documented issues of distributional justice relating to water infrastructure, particularly in cities of the global South (Arabindoo, 2017; Kooy &

Bakker, 2008; Monstadt & Schramm, 2017; Ranganathan, 2015), comparatively few studies to date have examined questions of procedural and distributional justice[3] in relation to urban adaptation projects. While ostensibly designed to protect urban residents, the differentiated impacts such projects have on individuals and communities warrant critical scholarly attention. This dissertation contributes to deepening our understanding of why particular forms of adaptation prevail over others in different geographic contexts by examining the planning, promotion and contestation of this major flood defense project in Jakarta, and the ways in which differently situated forms of expertise are enrolled in these processes.

More broadly, this dissertation contributes to emergent scholarship under the rubric of situated urban political ecology, which interrogates questions of environmental politics and environmental justice in post-colony cities[4]. This literature is informed by recent debates in urban studies concerning the 'southern turn' that emerged in the early 2000s as postcolonial critiques of mainstream urban theory gained traction: these critics have argued that urban theory largely drawn from empirical observations of cities in the global North may possess only limited analytical currency in other geographical contexts (Robinson, 2006; Roy, 2011a; Sheppard, Leitner, & Maringanti, 2013). Postcolonial approaches thus take Southern cities as empirical and theoretical starting points, rather than testbeds for northern theory. Taking up these theoretical insights, situated urban political ecology aims to "[create] the

---

[3] Distributional justice refers to equitable distribution of environmental threats/hazards across and within different communities. Procedural justice refers to the inclusion of communities in decision-making processes related to their environments.

[4] Following Leitner and Sheppard (2018), I use the term 'post-colony' to specifically refer to Jakarta's history of European and Japanese occupation, the effects of which reverberate today.

possibility for a broader range of urban experiences to inform theory on how urban environments are shaped, politicized and contested" (Lawhon, Ernstson, & Silver, 2014, p. 498). In this spirit, my intention to is take Jakarta as more than a field site; it is a location from which to theorize and generate new insights into urban adaptation and environmental justice.

Socio-ecological transformations in Jakarta

Flooding in Jakarta is by no means a new phenomenon – the first flood event on record occurred in 1621 – and the city's vulnerability to flooding has been long known. However, the frequency and extent of flooding have greatly increased in recent years, so much so that the Indonesian government has considered relocating the capital. Jakarta experienced major flood events in 1996, 2002, 2007, 2012 and 2013. As a socio-ecological process, flooding in Jakarta is caused by interactions between the city's biophysical characteristics and socio-political processes. As a low-lying delta city traversed by 13 rivers, Jakarta is vulnerable to flooding both from heavy rains and from the sea. These factors have been compounded by a recent history of urban planning in the twentieth and twenty-first centuries, which has tended to privilege development and capital accumulation over the city's environment and residents. Research has shown that large amounts of green space have been converted in recent decades for the construction of shopping malls, apartment buildings, and villas (Rukmana, 2015) increasing the percentage of non-porous surfaces and increasing the rate of runoff into the city's canals, the capacity of which has already been reduced by sedimentation and trash due to a lack of sanitation and waste disposal systems. Piped water infrastructure is concentrated in the wealthier area of Central Jakarta, reflecting both legacies of colonial era development and contemporary socio-spatial inequalities. Less than 60% of Jakarta's 10 million residents are connected to piped water supply (*Badan Regulator Penyediaan Air Minum* 2015 as cited in Furlong & Kooy, 2017, p. 895). The city gets an estimated two-thirds of its water consumption from groundwater (Furlong & Kooy, 2017). This has

contributed to enormous rates of land subsidence (as high as 20 cm a year in some northern locations), earning Jakarta international recognition as one of the world's fastest sinking cities. As a result of the altered topography of the city, the rivers struggle to discharge to the Java Sea. This has necessitated the construction of polder systems and pumping stations upon which the city now relies.

The planned GGSW project is situated within a long history of socio-ecological transformations in Jakarta since its beginnings as a fifteenth century port for the Javanese kingdom of Padjajaran (its Sunda Kelapa harbor still exists today). In 1619, Dutch Governor-General Jan Pieterszoon occupied Jakarta, renaming it Batavia and reconstructing it as a European city with a castle, city walls and a system of canals (Silver, 2007). Throughout the Dutch colonial period, Jakarta operated as the headquarters and administrative center of the Dutch East Indies Company (*Vereenigde Oost-Indische Compagnie*/VOC). To alleviate flooding, the Dutch constructed a network of canals modeled on Dutch cities. Yet these canals never resolved the city's drainage and flooding issues (Abeyasekere, 1987). In fact, sugarcane cultivation in Batavia's hinterlands and the clearance of forests affected the ecological balance of the region and contributed to soil erosion and silting of the rivers (Blussé, 1986). The polluted rivers stagnated in the canals, resulting in widespread outbreaks of malaria and cholera, which killed 240 Europeans in 1864 alone (Blussé, 1986). The city subsequently lost its reputation as the 'Queen of the East', quickly becoming known as the 'Graveyard of the East'. Faced with deteriorating conditions, Dutch settlers abandoned the coast and fled to *Weltevreden*, located on higher ground. Once the administrative center of Dutch colonialism, by the eighteenth century North Jakarta (*Jakarta Utara)* had been abandoned to the remaining Chinese and Indonesians residents.
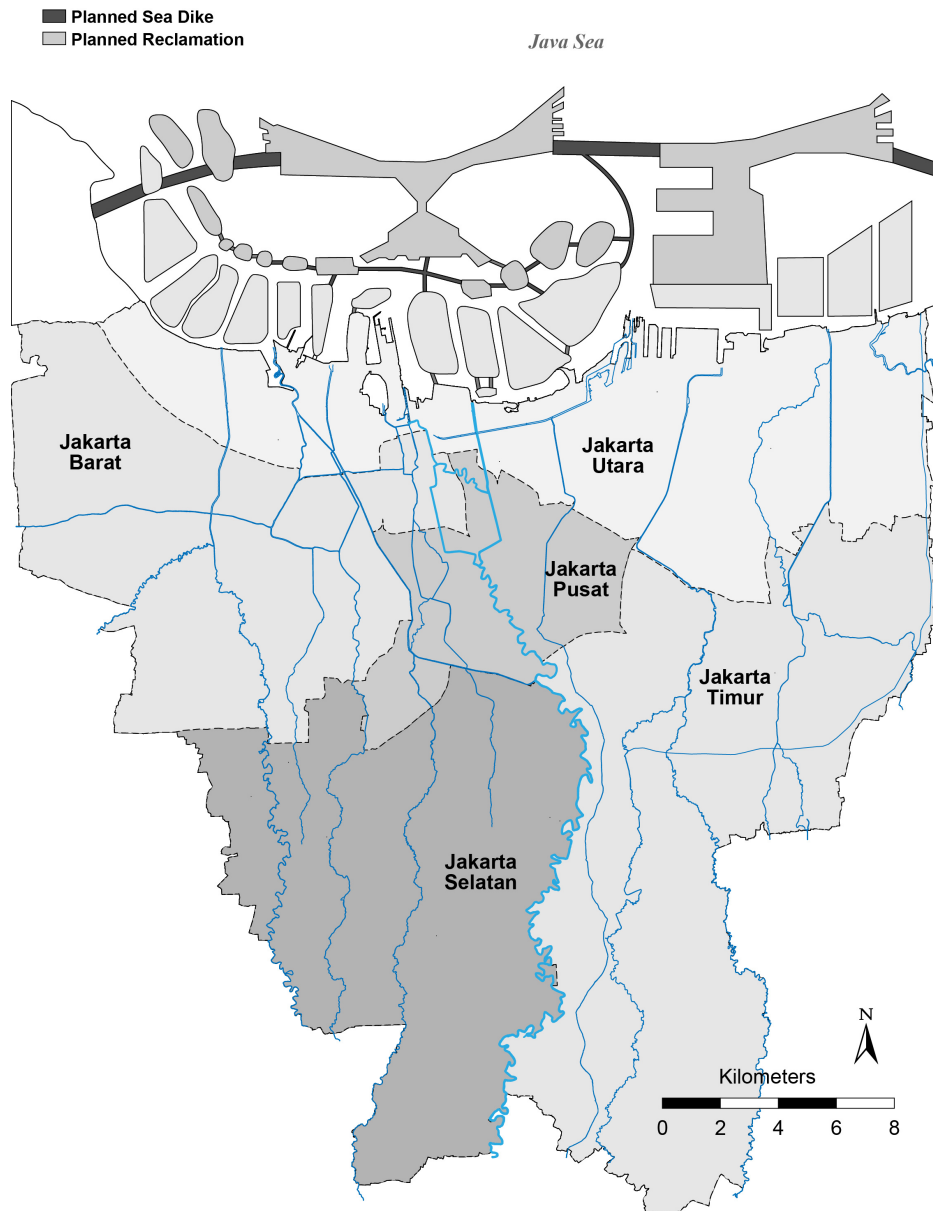
Figure 1. Map of DKI Jakarta. Credit: Matt Zebrowski.

For centuries after the Dutch fled, North Jakarta (see Figure 1) continued to operate as the city's neglected 'backyard' (Kusno, 2011, p. 515), home to marginalized and persecuted Chinese migrants, industry, fishing communities and the urban poor. Yet Jakarta's coast and bay took on a renewed symbolic significance toward the end of President Suharto's New Order (1966 – 1998), when it was reimagined as the center point for a modern and distinctly Indonesian capital city. Rather than turning

its back on the Java Sea, Jakarta would embrace its coastline. Ambitious plans were drawn up for several thousand hectares of reclaimed land in the bay of Jakarta; Jakarta would be reborn in the image of the nation. This vision was pursued by then-Governor Sutiyoso (1997 – 2007) but plans were stalled by the 1997 Asian financial crisis (*krismon*) and derailed by the subsequent political crisis culminating in the fall of Suharto in 1998. Plans for a new waterfront city have only recently been revived (discussed further in Chapters 2 and 3).

As the economic and administrative heartland of Indonesia, Jakarta's population has nearly doubled in recent decades, from under 5 million in 1971 to more than 9 million in 2010, to become Southeast Asia's most populous city. Since the crisis, urban development and sprawl have intensified, driven by the developmentalist aspirations of a post-Independence government, a rising and prosperous middle class, and the ambitions of powerful property developers. This has also contributed to increasing inequality and Jakarta is simultaneously marked by economic growth, luxury property developments and world-class shopping malls, as well as impoverishment and ecological degradation. Flooding and flood mitigation are intimately bound up with these socio-ecological transformations. The loss of green space due to urban development and urbanization have contributed to worsened flooding. At the same time, rapid rates of land subsidence exacerbate the threat of flooding from the sea, as well as the effects of flooding during high precipitation events. While urban development and the ecological balance of Jakarta have long conflicted, the GGSW project aims to transform the 'threats' posed by flooding into 'opportunities' for economic growth by combining urban development with flood mitigation infrastructure.

Methodological Strategies

Using the GGSW project as a lens, this dissertation examines how different environmental imaginaries, expertise, and discourses are mobilized by consultants, bureaucrats, and activists in

7

debates concerning flood mitigation in order to understand why some flood mitigation projects are chosen over others and the implications for social and environmental justice. Collectively, the empirical chapters comprising this dissertation address the following questions:

1. How do the localized politico-economic landscape and translocal networks of expertise contribute to the dominance of technological infrastructure solutions to flooding?
2. What urban and environmental imaginaries and forms of environmentalism are mobilized by differently positioned actors?
3. How are these mobilized to promote or contest technological approaches to flooding?

This research deploys a multi-sited and multi-method research design. After an initial 4-week preliminary research trip to Jakarta in 2014, I conducted approximately seven months of research over several field visits between 2015 and 2017. The majority of this fieldwork was in Jakarta, supplemented by several side-trips to Bandung to conduct interviews. I also spent three weeks in December 2015 in the Netherlands, conducting interviews with consultants and Dutch government staff in Delft, The Hague, Rotterdam, and Utrecht. Multi-sited research challenges the notion of the field site as a bounded entity, instead drawing on the relational theorizations of space (Massey, 2005) and cities (Robinson 2006). This supports a shift in the focus of analysis away from the bounded site, and towards the study of people, connections, relationships, processes and flows (Falzon, 2009). Drawing on these approaches, I conceptualized the field site as a network (Burrell, 2009) of different nodes – including the offices of consultancy firms, flood gates, sea walls and other infrastructure sites, conference spaces, canteens, workshops, and government buildings – rather than a bounded geographical location.

In order to contextualize the GGSW project and follow its emergence, and to trace debates concerning flood mitigation in Jakarta, I also gathered data in the form of primary and secondary documentary

sources including: the project master plan and supporting engineering and financial reports and documents, press releases, policy documents and legislation, PowerPoint presentations, institutional memos, news articles from local and national sources (such as The Jakarta Post, Kompas and Tempo), as well as international media (The Asian Correspondent, The Guardian, the New York Times and Reuters), reports produced by non-profits and community organizations, and online blog posts. I also collected visual materials, such as artistic renderings of the project and promotional videos. Documents were primarily in English, although some key publications such as policy documents and news articles were translated from Indonesian and Dutch.

I conducted 60 semi-structured interviews with 54 individuals across three participant groups: (i) consultants, architects and engineers from Dutch firms that developed the master plan; (ii) government officials and staff of provincial and national government ministries in Indonesia and the Netherlands, including the Indonesian ministries of Public Works (PU), National Development Planning (BAPPENAS), and Coordinating Economic Affairs (Menko), and the Dutch Ministry of Infrastructure and Environment; and (iii) activists, community architects and staff of Jakarta-based NGOs and community organizations. Interviews were designed to elucidate the urban and environmental imaginaries that individuals from different participant groups evoked in narrating their understandings of flooding and their support for/criticisms of the GGSW project. Interviews with groups (i) and (ii) sought to ascertain the factors propelling the project forward, and to understand the challenges relating to implementation. Interviews with group (iii) were designed to understand the alternatives these informants promoted, and the situated knowledge and environmentalisms underpinning them. Interviews were carried out in English, were recorded where consent was given, and transcribed. The fact that all interviews were carried out in English reflects the kinds of informants that this dissertation centers on: high-level officials, highly educated bureaucrats, and middle-class activists for whom a command of the English language is the norm rather than the exception. While

occasionally inviting curiosity ("Why do you want to research Jakarta?"), my positionality as a British researcher from an American university was somewhat advantageous in that I am neither Indonesian nor Dutch. For both proponents and critics of the GGSW project, I was considered a curious outsider with little personal stake in ongoing debates. Combined with my age, gender, and lack of training as an engineer, this meant that many informants (particularly engineers) often assumed "a teaching role" (Latour & Woolgar, 1979, p. 19). This enabled me to ask relatively direct questions about the reasoning underpinning the project.

All textual sources and interview transcripts were read closely several times and coded by hand. Select documents were additionally coded using *Atlas-ti*. While manual coding provides a "literal perspective not always possible on a computer screen" (Saldana, 2009, p. 22), the selective use of *Atlas-ti* allowed for a more in-depth, high level analysis which was more useful for identifying recurrent themes and patterns across data. I engaged in both 'open coding', coding without pre-established codes seeking to generate as many codes as possible in an effort to remain open to analytical possibilities, and 'theoretical coding', using codes derived from the theoretical framework. This was a cyclical and iterative process. Interviews and documents were read and re-read, and coded and re-coded. As the development of the dissertation and the analysis for each chapter progressed, codes were added, elaborated, refined and dropped throughout this process (Emerson, Fretz, & Shaw, 1995).

Intermittent observations of workshops, public seminars, conferences, and presentations was undertaken in Jakarta throughout the research where possible. During preliminary research in 2014, I visited the GGSW project office in Menteng, Jakarta. While small, it was a functional office frequented by staff. When I returned to conduct my fieldwork in 2015, the office had closed, reflecting how progress on the project had stalled. The ad-hoc nature of decision-making around the project meant

that conducting participant observation of institutional spaces was difficult. I gained access to occasional workshops and meetings, but this was on an irregular basis; institutional meetings concerning the project were held relatively infrequently, and often cancelled or rescheduled at the last minute. Additionally, though discussions in such meetings were mainly conducted in English, individuals would occasionally switch to using Dutch or Indonesian, which I was unable to follow. Opportunities for participant observation were therefore sparse, making this an unreliable method of data collection. Nevertheless, intermittent observations of implementation meetings, attended by consultants and provincial and national government officials, thus provided insight into how the GGSW project was narrated by different actors, their various concerns and priorities, and the nature of decision-making processes. Being in the room also gave me greater access to informants. Observations at workshops and conferences also elucidated the discursive tools and practices through which consultants presented and narrated the project to various local and extra-local audiences, supported by the mobilization of data (including flooding and land subsidence models and projections) and representations (such as artistic renderings of the sea wall project). I also gained insights into broader debates around flood mitigation, enabling me to examine the interactions and dynamics between actors, and the ways in which they responded to, understood and/or contested the project. For example, in October 2015, I attended *The Ciliwung River Project Symposium,* which was organized by researchers from the Future Cities Lab-Singapore and faciliated by the Urban Laboratory at Universitas Tarumanagara. The event was intended to bring stakeholders in Jakarta together to discuss river management and solutions to flooding. There, I was able to observe articulated (and unarticulated) disagreements over appropriate and possible solutions, as well as the interactions occurring between consultants, individuals from NGOs and community organizations, and government officials. Additionally, these observations provided points of discussion in interviews.

Methodological Reflections

The limitations of liminality

Since a primary aim of the dissertation was to study both localized and extra-local networks of knowledge and power and their material and political effects in Jakarta, I had intended to use a method of "studying through" (McCann & Ward, 2012), which aims to "[trace] the ways in which power creates webs and relations *between* actors, institutions, and discourses across time and space" (p. 46) in order to understand the processes through which policies mutate as they travel to localized contexts. This method also entails the technique of "following", which extends to the people who mobilize policies, the places that "attach" to policies, and the policies themselves. Upon arrival in Jakarta, this method provided insight into a curious paradox. Both in interviews and in public forums, consultants who promoted the GGSW project as the solution to Jakarta's flooding also told me that it might not be necessary to close Jakarta Bay if land subsidence could be stopped. This paradox and the politico-economic forces that sustain it are examined in Chapter 2.

However, methods of following presume that policies are visible and traceable. Since the GGSW project was not actually being implemented at the time of my research, I had difficulty in 'following' anything. While it was relatively easy to map out the consultants involved in the project on the Dutch side, it was difficult to ascertain who within the government was knowledgeable about the project. Much of my time in Jakarta in 2015 was therefore spent trying to discern who the key actors were. Many interviews, while productive in other ways, were less informative than I had hoped regarding the planning and status of the project. It became apparent that some government staff had little interest in the project. For many, the GGSW project represented a far-off possibility, and other projects or programs took greater precedence in their everyday work.

For me, these methodological challenges were empirical lessons. While the policy mobilities literature tends to emphasize the efficacy through which policy ideas travel, therefore placing emphasis methodologically on traceable policy presences, the difficulties I encountered during fieldwork elucidated the uneasy nature of this project of exporting and circulating universalized forms of expertise. These insights informed Chapter 3, which examines the disruptions experienced as Dutch consultancy firms sought to 'export' their expertise to Jakarta. The difficulties I experienced in locating and interviewing knowledgeable Indonesian government staff at least partly reflected the reality that few Indonesian staff were assigned to a project whose implementation had not been decided. These methodological challenges pointed me to critiques of 'following the policy' (Jacobs, 2012), namely that it encourages following presence at the expense of absence, gaps, disruptions and disconnections.

Producing knowledge for whom?

As a researcher interested in urban environmental politics, I am committed to the principles of social and environmental justice. Yet faced with the question of for whom my research is for, I am not sure I would be satisfied with my own answer. Upon reflection, my dissertation research was only able to partially speak to my ethico-political commitments. My research was partly driven by a desire to elucidate the uneven impacts of flood mitigation (and adaptation more broadly). In line with much research on environmental justice, I initially envisioned the project as one that would make the communities of North Jakarta central to my analysis. For example, I had considered conducting focus group discussions with residents in North Jakarta, to understand their perceptions of flooding, the threat of eviction, and the city's attempts to mitigate flooding.[5] Yet given the political and highly sensitive nature of evictions in Jakarta (combined with constraints posed by my limited working

---

[5] For an ethnographic study of the impact of flooding and flood risk on poor communities in Jakarta see Roanne van Voorst's (2016) *Natural Hazards, Risk and Vulnerability: floods and slum life in Indonesia.*

knowledge of the Indonesian language and the restricted time I had to embed myself in Jakarta), I concluded that it would be neither ethical nor responsible to enter these communities as a fleeting outsider, potentially exacerbating their concerns about a project that might not even be implemented. I therefore decided to restrict myself to those groups in Jakarta who make claims to the status of 'expert' (defined in a narrow sense). My intention was neither to silence North Jakarta residents nor to have other actors speak for them. Instead, this dissertation foregrounds these 'experts' at the expense of the communities who stand to lose the most from state interventions into flooding that result in evictions. Nonetheless, examining the work of these activists and their networks is particularly important in the Indonesian context. The advent of the *Reformasi* (Reformation) period (1998 to present) saw the democratization of Indonesian politics and the growth of civil society. Social movements and civil society organizations[6], once inhibited by strict state control of public space, the press and the Internet (Lim, 2008), flourished. Demonstrations could take place without violent repression by the state (Lee, 2007). Despite these developments and Jakarta's history of street protests and demonstrations[7] (Lim, 2008; Padawangi, 2013), civil society is still relatively weak (Hellman & van Voorst, 2018). At the same time, while processes of democratization and decentralization have yet to mature into the participation of the public in spatial planning and decision-making, grassroots efforts to develop "alternative development" plans (Padawangi, 2018) play an important role in facilitating state-civil society interactions and working towards achieving a more democratic Jakarta. Examining the work of these middle-class activists is therefore significant for understanding the breadth of actors involved in social activism and grassroots movements in Jakarta, a topic taken up in Chapter 4.

---

[6] Civil society organizations were prohibited during Suharto's New Order.

[7] The Temporary People's Consultative Assembly Decree (TAP MPRS) 25/1966 banning the practice and teaching of communism and the Communist Party is, however, still in effect.

Jakarta is saturated by researchers, many from European and North American institutions. By now some non-profits and community organizations are thus understandably wary of scholars who engage in extractive practices of data collection, giving little back to communities. In 2015, one of my informants asked if I would be interested in contributing to a symposium being organized to showcase research on flooding, evictions, and communities in Jakarta. While interested and certainly attracted to the idea that my research would potentially find a material and tangible impact beyond academia, I awkwardly declined. While disappointed in myself about my apprehension, I did not want to jeopardize my access to consultants and government officials. I expected these individuals might not be as forthcoming with me should I align myself so publicly with activists that criticize state interventions into flooding. In 2018, I was contacted by an artist working in residence at the Rujak Center for Urban Studies who requested permission to translate my published article (Chapter 2) into Indonesian, as part of their work on land reclamation, the GGSW project, and the role of aesthetics in shaping desirable urban futures. It was encouraging to see others finding utility in my research. My ethico-political commitments have been developed in the process of undertaking the dissertation research. As I move forward, I intend to re-orientate my future research to ensure it better serves a long-term project of producing knowledge *for* Jakarta and its residents.

Summary of Chapters

Each of the three empirical chapters comprising this dissertation explores the mobilities and politics of expertise, by examining the promotion, circulation, and contestation of the particular form of 'expert' knowledge embodied by Dutch consultants in Jakarta. Chapter 2 examines how the GGSW project retains its allure as the optimal solution for Jakarta, despite failing to address what is understood to be a primary cause of flooding: land subsidence. Drawing on the theoretical insights of

science and technology studies, urban political ecology, and postcolonial urban theory, I contribute to understandings of the political and economic forces that drive large infrastructure projects. Chapter 3 puts recent literature in policy mobilities on 'failure' into conversation with studies of disruptions to globalization. Mobilizing Anna Tsing's (2005) concept of friction, I interrogate both the disruptive and productive elements of friction, as Dutch consultants seek to operationalize the Dutch Delta Approach through the GGSW project in Jakarta. Examining the GGSW project as a liminal project that constitutes neither a success nor a failure, I seek to advance theoretical understandings of policy immobility. Chapter 4 steps away from the GGSW project, to discuss the contentious politics of flood mitigation in Jakarta more broadly. I analyze the environmentalism of *Forum Kampung Kota*, a network of middle class activists, architects and academics. By tracing its changing tactics, from one centered on appeals to social and environmental justice to what I call 'insurgent expertise', this chapter enriches our understandings of localized and differently positioned forms of environmental politics.

Chapter Two. Understanding the Allure of the Great Garuda Sea Wall Project

Introduction

Historically and geographically, the construction of large-scale water infrastructure projects has been a central component in the production of 'modern' industrial society. The twentieth century saw the emergence of the so-called 'hydraulic age', characterized by "state-led centralized approaches mobilizing large-scale technologies" (March, 2015, p. 232) in order to manage water. This included the proliferation of large-scale, modernist infrastructure projects, such as the Hoover Dam in the US and the Zuiderzee Works in the Netherlands. Such large-scale, technological water infrastructure projects have operated as "symbols of modernisation, development, and state power" (Webber et al., 2015, p. 11; Wittfogel, 1957). Scholars have observed the steady decline of this paradigm at the turn of the twenty-first century, and its replacement with demand-side technologies and water management strategies such as leakage reduction and metering systems, aimed at achieving increased efficiency and reduced water usage. This shift has largely been attributed to the increasingly central role of the private sector within water management, as well as growing resistance to the economic, social, and environmental costs of large-scale projects (Gleick, 2000; Guy & Marvin, 1996; March, 2015).

In recent decades a broader 'ecological turn' (Disco, 2002) in engineering has rolled out across Western Europe and North America specifically with regard to flood mitigation. This has imagined and promoted attempts to plan with nature, rather than control it, and demonstrated a shift away from an institutional reliance on hydraulic engineering and traditionally 'hard' infrastructure, and toward increased experimentation with 'softer' flood mitigation techniques. Such strategies include the utilization and restoration of mangrove forests to protect coastlines against storm surges and tidal flooding (Spalding, McIvor, Tonneijck, Tol, & van Eijk, 2014), buildings designed to accommodate floodwaters (Koellner, 2016), and the Dutch program of making 'room for the river' – moving dykes

farther back from rivers to accommodate higher levels of water (Ruimte voor de Rivier, 2016). Therefore, while the Dutch have gained worldwide recognition for their expertise and ability to "[keep] the water out" (Bijker, 2007, p. 120), there is a trend in Dutch water management "in which the water is in fact being given room" (Metz & van den Heuvel, 2012, p. 9).

However, a recent wave of concrete-heavy, capital-intensive water infrastructure projects – such as China's North-South Transfer project, the largest water transfer project ever constructed (Crow-Miller, 2015), South Korea's Saemangeum, the 33-kilometre (km) sea wall, the longest human-made dyke constructed in the world (Ja-young, 2017), and London's £270 million desalination plant (Loftus & March, 2016) – suggests that we may be witnessing a return to big infrastructure within water management. Understanding this shift, and the forces driving it, is of growing interest to scholars researching water politics around the world (Loftus & March, 2015, 2016). Heavily reliant on hydrological engineering expertise, hard infrastructure, and private capital, Jakarta's planned Great Garuda Sea Wall (GGSW) project might appear to reflect this observed return towards big infrastructure, but in Jakarta big infrastructure never left. The design of the GGSW project is underpinned by the same modernist impulses that characterized water infrastructure projects of the twentieth century – to display humankind's control over unruly nature, and to 'modernize' Jakarta. With an estimated cost of USD40 billion (Koch, 2015), the master plan proposes the strengthening of the existing sea wall (referred to as Stage A) followed by construction of a western and eastern offshore sea wall to close Jakarta Bay (referred to as Stages B and C) and protect the city from flooding. The closure of the bay will create a giant offshore retention lake, supported by pumping stations that will keep the water level low enough to facilitate the discharge of Jakarta's rivers into the sea. The project is "more than just a dike" (van den Boomen & Jones, 2014, p. 13): a new waterfront city will be constructed on more than 1000 ha of reclaimed land in the shape of the *Garuda*, a mythical bird and Indonesia's national symbol.

The project was designed by a consortium of Dutch firms in coordination with the provincial government of Jakarta and several national government ministries: the Coordinating Ministry of Economic Affairs (Menko), Ministry of National Development Planning (BAPPENAS), and the Ministry of Public Works (PU). The master plan for the GGSW project, funded by the Government of the Netherlands, emerges from "long-term cooperation between the governments of Indonesia and the Netherlands in the field of water management" (NCICD Consortium 2014a, p. 13). While Dutch expertise has travelled to a range of sites worldwide, Jakarta is distinguished as a former outpost of the VOC and an ex-colony. The project thus reflects a longer history of Dutch interventions in Indonesia. But how can we understand the implementation of big infrastructure in response to flooding in Jakarta? Loftus and March (2016) have argued that understanding the trend towards big infrastructure projects requires attention to the "financial and political networks" that underpin them (p. 4). Examining London's Thames Water Desalination Plan, they argue that the private utility company Thames Water has presented desalination as the obvious solution to London's water shortage problem by increasing drinking water supply for the city's residents. Yet, a "more profound motivation seems to be the need for new infrastructural forms within which to ensure speculative gains" (Loftus & March, 2015, p. 174). Therefore, they argue that the construction of the plant needs to be situated within a broader prioritization of large infrastructure projects at the expense of "more mundane strategies of demand management and leakage reduction" (Loftus & March, 2016, p. 2).

Building on this, I will argue that the GGSW project retains its allure in Jakarta because of a geographically and historically contingent "techno-political network" (Sneddon, 2015, p. 13) that brings together political-economic interests, mobile forms of expertise, and flows of capital. I use the term allure to capture how the Indonesian state remains orientated towards plans for large infrastructure projects, despite the challenges of realizing them. Thinking the (re)turn to big infrastructure through Jakarta provides a means to examine the techno-political networks driving the

19

construction of concrete-heavy, capital-intensive infrastructure projects from the vantage point of a postcolonial mega-city. In Jakarta, colonial histories and postcolonial relations between Jakarta and the Netherlands have crucially shaped the techno-political network driving the GGSW project. Such insights contribute to challenging the long- standing bias of urban studies, which has traditionally constructed theory largely from empirical research in Northern cities (Robinson, 2006; Roy, 2015).

This chapter is organized into three parts. First, I summarize my theoretical framework drawing on science and technology studies, urban political ecology, and postcolonial urban theory in order to explain the allure of the GGSW project in Jakarta. Second, I demonstrate that, while the project is presented as the preferable way to protect the city from the threat of flooding, it is not necessarily understood to constitute the most direct way to address the causes of flooding. This raises the question of why this particular project is being pursued over alternative flood mitigation strategies. Third, in seeking to answer this question, I illustrate how the GGSW project emerges from a techno-political network produced through the interconnections of political and economic interests, world-class city discourses, technical expertise, and colonial and postcolonial relations that contribute to the allure of the project, driving it forward.

My analysis draws on critical discourse analysis of the project master plan, relevant engineering reports, and media and newspaper reports, as well as semi-structured interviews conducted with engineers, financial consultants, architects, and national and provincial government officials and staff in Jakarta and the Netherlands. Interviewees were chosen because of their role in the design, development and/or potential implementation of the GGSW project master plan. Themes discussed in the interviews included but were not limited to the rationale and motivations behind the project; the design and engineering decisions made during the process of drawing up the master plan; the nature of collaboration between Dutch firms and the Indonesian ministries; the anticipated environmental and

social impacts of the project, and the concerns of the different government ministries regarding such impacts.

Theoretical Framework: Science and Technology Studies, Urban Political Ecology, And Postcolonial Urban Theory

Scholarship in science and technology studies has contributed to our understandings of the co-production of politics and technology, capitalism and science. For example, through an ethnography of laboratories Latour and Woolgar (1979) sought to elucidate the co-production of the 'social' and the 'technical' (p. 31), as they observed scientists "[struggling] to produce order" from disorder (p. 36). Raising the question of why levees could not save New Orleans while dykes continue to protect the Netherlands, Bijker (2007) argues that dykes, dams, levees and other such "socio-technologies" are "thick with power relations and politics" (p. 115). By this, he means that socio-technologies do not exist in a political vacuum, but instead both shape, and are shaped by social structures. Also acknowledging nonhuman agency, scholars have used the term 'techno-politics' to capture the co-production of technology and politics, and the social and natural worlds (Hecht, 2001, 2011; Mitchell, 2002; Sneddon, 2015). Thus Timothy Mitchell (2002) argues that Egypt's economic disaster in 1942-1944 was produced through the "interconnections of war, disease, and agriculture" (p. 27) and can only be understood by attending to interactions between various elements: dams, mosquitos, synthetic fertilizers, war, and man-made famine. He therefore argues for examining the interconnections and interactions between human and nonhuman elements, thereby expanding traditional notions of agency within social science, in order to better attend to those "things that are clearly more than social" (p. 52).

Informed by Mitchell's work, Sneddon (2015) conceptualizes large dams as "technological and political objects" (p. 14) produced at the intersections of "altered hydrologies, technical expertise,

21

financial circuits, political desires, displaced communities, and hegemonic ideologies" (p. 2). He argues that the construction of dams abroad by the US Bureau of Reclamation throughout the twentieth century was inseparable from broader geopolitical relations of economic development, as dams came to constitute a major component of US ideology and Cold War politics. Turning to the contemporary period, he argues that dams are produced through a "techno-political network" (Sneddon, 2015, p. 13) shaped by "shifting geopolitical alignments and environmental concerns about climate change and renewable energy" (p. 127), the increasing involvement of the Chinese state and other 'non-traditional' aid donor states, and anti-dam coalitions between affected communities, advocacy organizations, and scientists. Dams are therefore much more than technologies; they are produced by, and productive of politics.

Urban water infrastructure has received attention in urban political ecology (UPE). Swyngedouw (2006) argues that "[t]he urban world is a cyborg world, part natural part social, part technical part cultural, but with no clear boundaries, centres, or margins" (p. 118). Kaika (2005), meanwhile, advocates for a view of the city as a 'socio-natural hybrid', a term intended to capture that neither nature nor the city are "purely human-made nor purely natural" but are instead co-produced (p. 5). Studies of water infrastructure projects within this literature have examined the proliferation throughout the twentieth century of large-scale water infrastructure projects symbolic of humans' control over nature (Kaika, 2005), and demonstrated their centrality to state-building programs, developmentalist agendas, and the pursuit of 'modernity'. Kaika (2006), for example, observes the importance of the Marathon Dam to attempts to 'modernize' Athens. Kooy and Bakker (2008) demonstrate how the development of the city's water supply network was intended to showcase an "internationally modern Jakarta" (p. 1851), making a case for considering the water treatment plants constructed under President Sukarno as "modernist monuments" (p. 1852).

An emergent branch of UPE, termed 'situated urban political ecology', is taking up the insights of postcolonial urban theory. A subfield of urban studies that crystallized during the 1990s, postcolonial urban theory has sought to challenge traditional canons of urban theory on the basis that such scholarship is empirically and theoretically narrow (Robinson, 2006) and has tended to "generalize the experience of a handful of Euro-American cities as a universally occurring urban form" (Roy, 2015, p. 205). Borrowing from Chakrabarty (2000), postcolonial urban theory invites scholars to engage in practices of provincialization to recognize that theories emerge and are "drawn from very particular intellectual and historical traditions that could not claim any universal validity" (Chakrabarty, 2000, p. xiii). To "provincialize" urban theory (Sheppard, Leitner, & Maringanti, 2013; Sheppard & Leitner, 2016), then, is to generate "forms of theorization that are attentive to historical difference as a fundamental constituent of global urbanization" (Roy, 2015, p. 200). Studies in situated urban political ecology draw on this scholarship in order to "provincialize" urban political ecology. By broadening the sites of research beyond the Global North and engaging with "situated understandings of the environment, knowledge, and power", this scholarship aims to produce a "more theoretically heterogeneous UPE" (Lawhon, Ernstson, & Silver, 2014, p. 498) that is better able to attend to historical and geographical specificity.

Working at the intersection of these literatures, I conceptualize the GGSW project as the product of a geographically and historically contingent "techno-political network" through which the project is emerging as the preferred solution to Jakarta's flooding. This network comprises various elements, to be discussed in the remainder of the chapter: world-class city aspirations, flows of capital, colonial and

postcolonial relations, and transnational networks of expertise.[8] This facilitates an analytical approach that is attentive to the political and economic forces involved in the design, promotion, and implementation of infrastructure projects, well suited for understanding how the GGSW project retains its allure.

Contested Narratives, Contested Solutions: Constructing the GGSW Project as the 'Optimum Way'

Jakarta has long experienced flooding, but it has become more frequent and more extreme in recent decades with major flood events in 1996, 2002, 2007, and 2013. Flooding poses a threat to the national economy, causes damage to buildings, roads and infrastructure, contributes to the spread of water-borne diseases, displaces residents, and claims lives. In Jakarta, it is the product of both human and nonhuman agency, of "natural ecologies and urban development" (Padawangi & Douglass, 2015, p. 519). As a delta city with a rainy season spanning October to February, Jakarta is naturally exposed to flooding from high precipitation events. The threat of flooding has been exacerbated by urbanization, land use change, and a loss of porous surfaces to absorb rainfall (Padawangi & Douglass, 2015). To date, one of the city's primary responses has been a strategy of *normalisasi* (normalization), which involves dredging and widening rivers and waterways in order to facilitate the flow of water through the city and into the Java Sea. Utilizing heavy machinery and large amounts of capital, these large-scale interventions have been used to justify the forcible eviction of residents from settlements situated along the city's riverbanks and reservoirs (Leitner, Sheppard, & Colven, 2017; Sheppard, 2006), such

---

[8] As the focus of this chapter is primarily the politico-economic forces driving the allure of the GGSW, I afford less attention to how nonhuman agency is shaping the project.

as the high-profile eviction of residents from Kampung Pulo in August 2015 (The Jakarta Post, 2015a; van Voorst & Padawangi, 2015).

Figure 2. The sea wall at Pluit in North Jakarta, 2015.

The city's location on the northern coast of Java also exposes it to tidal flooding, which is exacerbated by both sea-level rise and high rates of land subsidence. Rates of land subsidence average 7.5 cm per year, reaching 17 cm in some northern locations (NCICD Consortium, 2014a, p. 16), earning Jakarta the reputation as one of the world's fastest sinking cities. The current sea wall (Figure 2) barely holds back the waters buffering Jakarta's coast. Scientists in Indonesia continue to debate the primary cause of land subsidence; it has been attributed to several factors including the weight of construction loads of buildings leading to soil compression, the natural consolidation of alluvial soil, and groundwater

extraction (Abidin et al., 2011). While the groundwater and subsidence report accompanying the GGSW project master plan notes that "[t]here is an enormous lack of data for sound analysis of current subsidence rates, let alone future predictions" (NCICD Consortium, 2014c, p. 9), land subsidence has become a major research agenda in recent years. Dutch consultants argue that groundwater extraction is the primary cause of land subsidence (Brinkman and Hartman, n.d.; Deltares Taskforce Subsidence, 2015), with independent Dutch research institute *Deltares* repeatedly stressing the need to 'stop the sinking' by means of reducing groundwater extraction (field notes, September 18, 2015). This was also emphasized during interviews with consultants and experts: "What needs to be done is very simple. Stop extraction" (interview with Dutch expert, December 03, 2015). According to this narrative, groundwater extraction occurs due to the absence of an alternative water supply:

> "You have to have an alternative source [to groundwater]. If that source is not there… people will always keep on pumping, whether it's illegal or not." (Interview with consultant. November 20, 2015).

From the perspective of these consultants, a reduction in groundwater extraction through regulation and the provision of a surface water supply would alleviate subsidence. Without such measures, groundwater extraction, and thus land subsidence will likely continue. This was reflected in the comments of one interviewee that stopping groundwater extraction would be impossible without developing an alternative water supply:

> "We try to decrease the groundwater extraction… we put taxes on the groundwater. But it doesn't matter how high the tax because we don't have water. That's the problem." (Interview with provincial government staff. August 03, 2016).

Subsequently, local authorities and consultants have begun advocating for reducing groundwater usage through taxation and for developing alternative sources (Deltares Taskforce Subsidence, 2015). However, the master plan has been designed on the basis of the assumption that Jakarta will continue to sink into the near future, increasing the risk of flooding to an unacceptable level: "It is unlikely that subsidence will be slowed down in the foreseeable future as it will take time to develop and implement alternatives for groundwater extractions" (NCICD Consortium, 2014a, p. 71). This was reflected in the comments of one consultant that to stop the groundwater extraction within the required time period is not considered a "realistic expectation" (interview with consultant. September 25, 2016). This discourse enables engineering consultants and political elites to present the sea wall project as "the best hydraulic solution for the flooding problem" (NCICD Consortium, 2014a, p. 33); the "optimum way" (van den Boomen and Jones, 2014, p. 13) to protect Jakarta.

An examination of the master plan, and interviews with provincial and national government officials and staff, financial consultants, engineers, and architects involved with the development of the master plan, reveal that the project is not necessarily considered to address what these experts understand as a major factor contributing to flooding: land subsidence. It does not include any direct measures to slow or stop land subsidence. Indeed, the call for tenders stipulated that the project should be designed for the coastal zone and focus on flooding explicitly, meaning that water supply does not fall within the remit of the GGSW project and is not directly addressed. Yet, land subsidence will remain an issue for Jakarta even if the GGSW project is implemented. For this reason, challenging representations of the GGSW project as the optimum way to protect the city from flooding, critics argue that the project fails to address the causes of flooding (Koch, 2015).

The counter-narratives mobilized by critics present the project as an urban development project masquerading as flood mitigation (Elyda, 2013). Criticisms of the GGSW project reflect a more general critique of the state's pursuit of highly visible, concrete-heavy technological responses to flooding, waged by academics both within and beyond Indonesia, community organizations and NGOs, and the media. Observing an impulse to "conquer nature" (Kusno, 2011, p. 527) characteristic of this dominant paradigm of water management in Jakarta, critics argue that it reflects an unwavering belief in the ability of 'heroic engineering' (Turpin as cited in Tibke, 2015) to circumvent environmental challenges and deliver what one critic (working for a community organization) termed 'technological salvation' (field notes, September 25, 2015). These critiques legitimate alternative modes and models of flood mitigation. Thus, community organizations such as *Ciliwung Merdeka* and the Urban Poor Consortium have called for in-situ upgrading of existing settlements as an alternative to the large–scale displacement of riverbank communities for dredging projects (van Voorst & Padawangi, 2015; Munk, 2016). These groups have proposed alternative designs for *kampung susun*: 'community-based vertical villages' (Budiari, 2016). Instead of the construction of new, capital-intensive, large-scale projects, other critics have proposed increased investment in sanitation[9], for example through the construction of a high-capacity wastewater treatment plant, and the maintenance of existing infrastructure (The Jakarta Post, 2015b).

Further, the Indonesian government remains ambivalent towards the proposed GGSW project. During interviews, consultants of Dutch firms stressed the difficulty of securing and maintaining Indonesian commitment, signaled, for example, by the lack of a formal team initially assigned to the project by the government. Interviews also revealed that there has been "some resistance on the

---

[9] While the Japanese International Cooperation Agency (JICA) is currently working on a citywide sanitation program, progress to date has been slow.

environmental issues" from individuals within the Indonesian government regarding the potentially negative impacts of the project (interview with Dutch expert, December 03, 2015). Given the high levels of pollution in Jakarta's rivers, one of the primary concerns is that closing Jakarta Bay could lead to an increased concentration of pollution, with some concerned that it could turn into a "septic lagoon" (Sherwell, 2016). This risk is acknowledged and emphasized in the master plan, which makes clear that the success of the project in part hinges upon improving the levels of sanitation in the city's rivers. As the engineering report accompanying the master plan states: "to realise an acceptable water quality in the retention lake, pollution in the rivers has to be reduced" (NCICD Consortium, 2014b, p. 28). Consultants also reinforced the importance of this during interviews. Nonetheless, concerns remain as to whether water sanitation will be improved in time:

> "Can you imagine we release the water from here [the rivers] – not good water, not
>
> clean water but dirty water – into here [Jakarta Bay]? And then what's happening? We
>
> have a big problem." (Interview with provincial government staff. August 03, 2016).[10]

The staff of Indonesian government ministries have also questioned whether such a large-scale and complex project is necessary, as reflected in the comments of one provincial ministry staff member as they described the debates within the government:

> "So, I mean, is the Giant Sea Wall really the answer? (...) Do we really need that? (...)
>
> Why don't we dig into the more, you know, crucial reason of flooding (...) Don't do

---

[10] A study produced by Research and Development Centre for Marine and Coastal Resources within the Ministry for Maritime Affairs and Fisheries concluded that the project could contribute to coastal erosion, damage coral reefs, and cause eutrophication in Jakarta Bay, in addition to displacing fishing communities and disrupting their economic activities (Elyda, 2015; Poernomo et al., 2015).

like a big project for having a big, sophisticated and prestigious project, that's the debate." (Interview with provincial government staff. November 17, 2015).

Perhaps reflecting such concerns, the government has yet to make a final decision on whether to proceed with the GGSW project. The ambivalent position of government staff raises the question of why this particular flood mitigation infrastructure project is still on the table. This is made further perplexing by the statements of numerous consultants, both during interviews and publicly in the media, that stopping groundwater extraction within the foreseeable future would render the outer sea wall (referred to as Stage B and C of the project) unnecessary:

> "The cheapest and easiest solution is to stop the sinking. The only thing Jakarta needs to do is to stop the deep groundwater use and the sinking will stop within five to ten years. Then you do not need a closed Jakarta Bay, you do not need a giant seawall." (Consultant as cited by The Jakarta Post, 2015b).

> "I hope that they [the Indonesian government] are able to stop the groundwater extraction in the coming 15 years and are able to design a Stage A which is very good and sustainable, that maybe you don't need stage B and C." (Interview with consultant. December 14, 2015).

The ambivalence of Indonesian support for the project raises the question of why a project of this scale, ambition, and financial cost is still being considered by the Indonesian state and promoted by Dutch consultants over, for example, more "mundane" (Loftus and March, 2016, p. 2) strategies that might address the causes of flooding more directly (developing alternative water sources to curb groundwater extraction, or investing further in water sanitation in order to use the city's thirteen rivers as a source of surface water). In the following section, I discuss how long-standing political ambitions

to redevelop North Jakarta, Jakarta's colonial history and postcolonial relationship to the Netherlands, and the mobilization and circulation of technical expertise have contributed to the allure of the GGSW project.

Understanding the Allure of The GGSW Project

The tension between claims that the GGSW is the optimum way to protect the city from flooding, and those that it does not actually address the causes of flooding, raises the question of why this particular project continues to be promoted over alternative flood mitigation strategies. In this section, I examine the elements of the techno-political network through which the GGSW project emerges as the preferred solution to the threat of flooding in Jakarta, continuing to drive it forward. First, I examine how the project is driven by the politico-economic interests of governing elites, property developers, and the Dutch water sector, in addition to desires for flood safety. Secondly, I discuss how its allure is bolstered through historical and contemporary transfers of knowledge and expertise, and educational and training networks, between the Netherlands and Indonesia.

Speculative urbanism, world-class city building and the reimagining of North Jakarta

In the context of Southern cities, scholars have observed the role of infrastructure projects in the construction of internationally recognized and competitive world-class cities. As "the dream world of postcolonial development" (Roy, 2011b, p. 260), the world-class city has become a powerful imaginary informing the development agendas of cities across the Global South. Attempts to achieve a "world-class aesthetic" (Ghertner, 2015) have typically produced a mode of urbanization characterized by high levels of investment in visible, 'modern' infrastructure projects. In Jakarta, infrastructure projects and high-end real estate development are pursued by political elites in order to transform Jakarta into a modern, world-class city. As an 'integrated' coastal defense and urban development project, the GGSW project is alluring not only because it would protect the city from flooding, but also because

31

it promises to showcase Jakarta as a 'world class' metropolis through the construction of new waterfront city, complete with a central business district, residential, commercial, and green space, and transportation infrastructure on reclaimed land. Land reclamation is particularly attractive to the provincial government of Jakarta, given the difficulties of land acquisition, high land prices, and a perceived lack of space for urban development. From their perspective, reclamation offers a means to create new land, free from the complexities of the existing and "messy" city (interview with provincial government staff, August 03, 2016).

The GGSW project design proposes several opportunities for investment – including property development on extensive land reclamation, and the construction of a toll road. It is claimed that these will cross- subsidize the costs of flood mitigation infrastructure: "solving urban problems and at the same time generating revenues to finance flood protection" (NCICD Consortium, 2014a, p. 33). The master plan includes an explicit discussion of 'transforming threats' (posed by flooding) into 'opportunities' (for urban development and revenue generation). Speculative investment, land reclamation and urban development are naturalized as solutions to the problem of a sinking Jakarta, providing the magic bullet in a situation where the state is reluctant or unable to front the costs of the planned flood mitigation infrastructure that the master plan deems necessary. The GGSW project thus constitutes a form of "speculative urbanism", whose feasibility hinges on the city's success in "luring" investors (Goldman, 2011, p. 230).

Additionally, by attracting private capital investment to North Jakarta, its proponents wage that the project will act as a "catalyst for development of the coastal zone" and economically revitalize this neglected part of the city (NCICD Consortium, 2014a, 33). These proposals align with long-standing political ambitions to construct Jakarta as a modern and internationally recognized global city. In the post-Independence era, the then-President and trained civil engineer and architect Sukarno undertook

several mega-development projects intended to symbolize Indonesia's greatness as an independent nation, such as the Jalan Thamrin avenue, the national Monas monument and the Senayan stadium, in an attempt to "de-colonize the urban landscape" (Cybriwsky & Ford 2001, p. 204). Such projects were continued into the New Order era under President Suharto, during which time the Golden Triangle commercial district emerged, accompanied by high-rise office buildings and luxury hotels (Silver, 2007). More recently, and partly in preparation for hosting the 2018 Asian Games, President Jokowi's administration has prioritized the construction of several mega-infrastructure projects in Jakarta, such as a mass rapid transit (MRT) system and the Serang-Panimbang toll road.

Another central component of efforts to position Jakarta as a world-class city has been the long-standing attempt by the Indonesian state to radically reimagine North Jakarta as the city's "last frontier for capitalist urban development" (Kusno, 2011, p. 515). Long considered peripheral to the city, home to some of the city's poorest residents, fishing communities, and industrial spaces, in recent decades North Jakarta has come to represent "the last chance to remake the image of the capital city in which the nation is at stake" (Kusno, 2011, p. 527). This began in the mid-1990s with plans under the then-Governor Sutiyoso for a new waterfront city on 2,700 ha of land reclaimed from Jakarta Bay. Beyond leveraging revenues for the Suharto family and their allies, this national project was intended to "provide Jakarta's affluent residents with facilities comparable to those found in Singapore" (Silver, 2007, p. 199). Concessions were granted to developers in the mid-1990s, but the plans remained unrealized due to the 1997 *krismon* (Asian financial crisis). Despite opposition from fishing and coastal communities, NGOs including KIARA (The People's Coalition for Fisheries Justice), and KNTI (Indonesian Traditional Fishermen Union), and the Coalition for Saving the Jakarta Bay, a group comprised of fishing communities and environmental activists (Bakker, Kishimoto, & Nooy, 2017), reclamation projects have resumed in recent years, culminating in a planned 17 new islands in Jakarta Bay. In promising a new waterfront city on additional reclaimed land, the GGSW project dovetails

with historical and enduring desires to develop Jakarta as a competitive world-class city, increasing its allure with political elites. Thinking through the return to big infrastructure through Jakarta demonstrates how the GGSW project has in part been propelled by the state's desire to construct an internationally competitive city. The circulating imaginary of becoming a world-class city thus constitutes an important element within the techno-political network from which the GGSW project emerges.

In addition, the GGSW project promises economic opportunities through real estate development and land reclamation. The project legitimizes other land reclamation projects undertaken by private property developers, such as plans for the 17 islands, by connecting urban development to concerns about securing the city and its residents from the threat of flooding. Through lucrative international contracts, the Dutch water sector – comprising knowledge institutes, consultancy firms, and dredging companies – also potentially stands to benefit from implementation of the project. The interest of Dutch industries in Indonesia was perhaps most aptly signaled by a 2013 trade delegation from the Netherlands, the largest since Indonesian independence, with more than 100 representatives of Dutch businesses accompanying Prime Minister Mark Rutte to Jakarta (Jakarta Globe, 2013). The delegation was intended to usher in a new phase in Indo-Dutch relations, marked by the signing of the Joint Declaration on a Comprehensive Partnership (Jakarta Globe, 2013). Rutte led a second trade delegation to Jakarta in 2016, accompanied by 50 water-sector companies (Bakker et al., 2017). Thus, whereas the techno-politics literature stresses the political ambitions and motivations shaping the implementation of technologies, the case of Jakarta demonstrates the role of capital in contributing to the allure of the GGSW project: its implementation could provide economic opportunities for the provincial government and property developers through real estate development, and potentially for the Dutch water sector by creating demand for dredging services and consultancy expertise. I turn to

the role of mobile forms of Dutch technical expertise, and educational and training networks, in the following subsection.

Jakarta's colonial history and postcolonial context

With much of the Netherlands at or below sea level and drawing on centuries of experience in deploying engineering expertise to protect its coasts from encroaching seas, the Dutch have firmly established themselves as global experts in all things relating to water. At the time of writing (May 2017), Dutch engineering firms and dredging companies are involved in 312 overseas projects in more than 100 countries (Dutch Water Sector, 2017). In Jakarta, Dutch interventions are further rooted in a reiterating history of colonial relations linking Indonesia to the Netherlands. From the Dutch colonial period, Dutch knowledge and expertise have travelled to, and acted upon Jakarta: "Technical solutions have been practiced in Jakarta since the Dutch colonial period" (Padawangi et al., 2016 p. 150). Through these historical connections, numerous Indonesian government officials and staff have received professional qualifications from Dutch universities such as UNESCO-IHE, TU Delft (Delft University of Technology) and Wageningen University (Ter Braak, 2016). Additionally, the Dutch occupy a privileged position as 'trusted advisors' to the Indonesian state (interview with Dutch expert, 03 December 2015), working with government ministries to offer their expertise with regard to water management.

A key sector of the Dutch economy receiving explicit support from the Government of the Netherlands, the Dutch Water Sector has worked to promote the export of Dutch expertise, knowledge, and skills worldwide to ensure the growth of this billion-euro industry. A Memorandum of Understanding governing cooperation in the field of water has existed since 2001 between the Ministry of the Environment and Forestry, and The Ministry of Public Works and Housing of the Republic of Indonesia, and the Ministry of Infrastructure and the Environment of the Netherlands.

35

Most recently updated in 2015, this Memorandum lays the framework for intensive cooperation between Indonesia and the Netherlands, including staff training, educational programs, and exchanging experts. It also creates new spaces for the circulation of Dutch expertise through conferences and workshops.

For example, as part of the Training and Exposure Program 2014-2016, 24 participants from the provincial government of Jakarta completed a three-month internship program in Rotterdam in order to "learn the best practices adopted by Dutch engineers, practitioners, administrators and policy-makers" (Dutch Water Sector, 2014a). Meanwhile, the Young Water Professionals program is designed to offer training to Indonesian staff in 'non-technical' management skills (Dutch Water Sector, 2014c), and teams of Indonesian university students compete in the Netherlands-Indonesian Water Challenge to develop 'innovative and sustainable solutions' to water problems, all aimed at developing the 'capacity' of young professionals (Dutch Water Sector, 2014b)[11]. Thus, beyond exporting technologies and designing master plans for implementation, the Dutch Water Sector is actively involved in training young Indonesian professionals in water governance, potentially contributing to Dutch expertise being recognized and adopted as 'best practice'. This is highly significant given the central role these individuals will play in planning Jakarta's future. As the Dutch Water Sector website acknowledges, "Jakarta will rely on these professionals to improve the city's resilience towards many urban and environmental issues" (Dutch Water Sector, 2014a).

---

[11]Interestingly, the first of these challenges was aimed at developing solutions for the sustainable development of Jakarta Bay. The winning design, from a student team at *Institute Teknologi Bandung* (Bandung Institute of Technology) was for a floating fishing village designed to raise environmental awareness and showcase the fishing industry.

Much as Michael Goldman (2005) observes how World Bank training program constitute a crucial element in the transnational policy networks that circulate and legitimize particular forms of knowledge, training networks between the Netherlands and Indonesia contribute to facilitating the importation of Dutch technologies and expertise, helping to maintain the privileged position of Dutch experts within Jakarta. In this way, historical and enduring educational and training networks have the potential to shape the forms of flood mitigation that gain traction in Jakarta. More specifically, they may contribute to maintaining an institutional culture within the Indonesian government that privileges Dutch hydrological engineering. While many have voiced criticisms of the GGSW project and other such technological solutions to flooding in Jakarta, the state continues to pursue these strategies with the support of Dutch consultants, marginalizing alternative visions for flooding mitigation.

Thus, the continued consideration of the GGSW project by the Indonesian state can be attributed in part to the mobilization and promotion of engineering expertise shaped by historical and contemporary networks of expertise between the Netherlands and Jakarta. In Jakarta, technological responses to flooding have been practiced since the colonial era, enduring in part due to the continued presence of Dutch experts. As Mochamad Basuki Hadimuljono, Minister of Public Works and Housing for Indonesia writes: "Indonesia is a showcase example of the Netherlands' water expertise" (as cited in Ter Braak 2016, p. 3). Looking at big infrastructure through the lens of Jakarta the colonial histories and postcolonial present of networks of expertise are crucial for understanding how particular projects are promoted and made alluring.

Conclusion

While engineering consultants and political elites frame Jakarta's planned Great Garuda Sea Wall project as "the best hydraulic solution for the flooding problem" (NCICD Consortium, 2014a, p. 33),

the project does not directly address land subsidence, understood to be a primary cause of flooding. Nevertheless, it continues to be championed by experts and considered by the Indonesian government. In order to understand how and why this is so, this chapter has examined how a geographically and historically contingent techno-political network – formed through political and economic interests, world-class city aspirations, engineering expertise, capital flows, colonial histories, and postcolonial relations between Jakarta and the Netherlands – contributes to the project's allure and propels it forward. The world-class city aspirations of political elites are crucial in driving infrastructure projects, shaping which are made possible. Drawing on their post-colonial influence, the Dutch have been instrumental in shaping flood mitigation in Jakarta, with contemporary knowledge transfers and networks of expertise from the Netherlands to Jakarta that promote Dutch engineering expertise, of which the GGSW project is a product.

Indeed, the case of Jakarta suggests a need to provincialise emergent narratives charting the apparent rise, fall and return of big infrastructure. Heavily dependent on engineering expertise, hard infrastructure, and private capital, Jakarta's planned GGSW project might appear to reflect a broader observation of a return to big infrastructure within water management. However, the historical dominance of hydrological engineering in Jakarta and an enduring institutional preference for big infrastructure suggests that the 'hydraulic age' may have never waned here. Instead, large-scale, concrete-heavy infrastructure projects – such as river normalization and sea walls – continue to constitute the dominant institutional response to flooding, underwritten by the long history of Dutch engineering interventions, and educational and training networks promoting such approaches.

In tracing the techno-political network through which the GGSW project emerges, I thus go beyond analyses of the contemporary economic and political motivations (Loftus & March, 2016) that underpin big infrastructure projects, by drawing attention to enduring colonial histories and

postcolonial relations that underpin the GGSW project and drive it forward. In order to understand the allure of big infrastructure projects in specific sites and cities, we need to trace the emergence and evolution of the geographically and historically contingent techno-political networks through which such projects emerge. In the case of Jakarta, such an analysis denaturalizes narratives that present the GGSW project as the optimum way to protect the city. This holds open the potential to make space for a discussion of alternative responses to flooding that have been otherwise seemingly been foreclosed.

Chapter Three. Disruptive and Productive Frictions in Jakarta: The Messiness of Globalizing the Dutch Delta Approach

Introduction

Though the Dutch have long occupied a privileged position as producers of knowledge relating to water management, their globally recognized expertise has taken on a renewed significance in a context of global environmental change. As Tracy Metz writes: "Now that the climate is changing (…) All eyes turn once again to the Dutch: how are they dealing with this? And what can the rest of the world learn from them?" (as cited in Metz & van den Heuvel, 2012, p. 9). Presently, the Dutch government and the Dutch Water Sector are working together in order to position Dutch experts at the frontier of water management, equipped with universally applicable, readily-exportable solutions. A number of programs and initiatives have been designed to increase the profile of Dutch water expertise and foster collaborations and partnerships with other countries. Key to these efforts is the drive to position the Dutch as experts in delta management. In 2014, the Dutch government launched *The Dutch Delta Approach*, outlining the characteristics of an integrated approach to sustainable delta management: a "strategic planning process for delta development that integrates sustainability, institutional, physical and social economic aspects" (Netherlands Water Partnership, n.d. 10). But how is this globalizing form of Dutch delta urbanism operationalized in localized sites? This chapter takes up this question through an examination of efforts to implement the planned Great Garuda Sea Wall (GGSW) project in Jakarta: a multi-billion-dollar coastal defense project that, in addition to flood infrastructure, includes plans for the reclamation and redevelopment of Jakarta Bay. Tsing (2005) argues that by paying attention to "states of emergence" (p. 269) wherein global capitalism is unfolding "an always unfinished achievement" (p. 7), we can elucidate its unpredictability. By paying attention to the frictions of Dutch expertise in contemporary Jakarta and carefully tracking the "sticky materiality of

practical encounters" (Tsing, 2005, p. 1) between Dutch consultants and Indonesian state actors, this chapter elucidates the uncertainty of both the success *and* failure of efforts to globalize Dutch expertise and the distributed nature of agency in this process.

This chapter is informed by a critical analysis of the GGSW project master plan, policy documents and other "policy artifacts" (Pow, 2014, p. 289) through which articulations between consultants and state actors could be traced. A critical discourse analysis of the master plan and other planning documents and promotional materials sheds light on the expertise and discourses that consultants mobilize to promote the GGSW project (not only to local political elites but also to potential future clients). I supplement this with in-depth interviews with local and national state actors and consultants from Dutch firms, and intermittent participant observation of institutional meetings and field visits conducted in Jakarta and the Netherlands between 2014 and 2017. Interviews and participant observations provided insights into the everyday practices of negotiation between consultants and state actors involved in the design and planning of the GGSW project, little evidence of which is borne by the finalized master plan and promotional materials. Rather than focusing on processes of policy mobilization, this chapter examines the "grounded and messy ways" (Temenos & Baker, 2015, p. 842) in which the Dutch Delta Approach is localized in Jakarta. By delving into the "messy, fleshy and indeterminate stuff" (Katz, 2001, p. 711) of policy mobilities, it is my intention to illuminate how concerted efforts to globalize the Dutch delta approach awkwardly, but productively, materialize on the ground.

This chapter contributes to a growing scholarship interrogating instances of policy mobility interruption and failure by examining the frictions and disruptions encountered as efforts were made to implement the GGSW project. Though the ground-breaking ceremony was held in late 2014, the yet-to-be materialized project faces a somewhat uncertain future. A final decision (referred to by

consultants as an "investment decision") on whether to proceed with the project has still not been given by the Indonesian government at the time of writing (May 2018). However, in April 2018 Coordinating Minister for Economic Affairs, Darmin Nasution announced that the revision of *PerPres[12] Jabodetabekpunjur[13]* No 54/2008 (a Presidential Regulation designating the greater metropolitan region as an area of national strategic planning) would be updated to include a giant sea wall by the end of the year (Jakarta Post, April 16, 2018) suggesting that the project is still up for consideration. Furthermore, the project has also been circulated through transnational circuits as an example of the Dutch Delta Approach abroad, with political and material affects beyond Jakarta. The GGSW project is therefore a liminal project that does not fit neatly into either category of success or failure. In interrogating this in-betweenness, I contribute to advancing our theoretical understandings of policy immobilies and failure. Further, policy mobilities research has tended to focus on private consultants at the expense of other important policy actors. By illustrating the ability of Indonesian state actors to disrupt or facilitate the mobility of the Dutch Delta Approach, this chapter contributes to decentering the overt focus on consultants within the literature.

The chapter is organized as follows. After critically examining the analytical insights and shortcomings of policy mobilities scholarship on best practices and more recent work on 'failure', this chapter firstly describes the concerted efforts by the Dutch government and Dutch Water Sector to export Dutch expertise worldwide. Secondly, taking inspiration from Hannah Appel's (2012) call to examine efforts to smooth over the "exceptions, frictions and gaps" of transnational capitalism (p. 706), I examine

---

[12] *Perpres* is an abbreviation for *Peraturan Presiden*, meaning presidential regulation.

[13] *Jabodetabekpunjur* is an abbreviation that refers to the regions of Jakarta, Bogor, Depok, Tangerang, Bekasi, and Puncak-Cianjur.

how the Dutch Delta Approach is discursively disentangled from the specific context in which it was developed, and imagined as a frictionless policy object by the consultants and state actors who seek to render it mobile. Finally, I examine how consultants have sought to realize the GGSW project in Jakarta, tracing moments of articulation between Dutch consultants and Indonesian state actors where moments of friction become apparent. My aim is to illustrate how this friction can be potentially productive as well as disruptive.

Policy im/mobilities

Success/failure

Emerging from a critique of policy transfer studies in political science, policy mobilities now constitutes a matured body of literature in urban geography, seeking to understand how policies are made mobile through transnational networks of knowledge, and how such knowledge is localized. Geographers have made crucial contributions to the study of policy by elucidating how policies are not transferred as neatly bounded objects, but rather mutate as they travel. Orthodox accounts of policy transfer and diffusion portrayed actors as rational, selecting best practices and abstracting these from their contexts. By contrast, policy mobilities draws on geographical theorizations of scale and relational understandings of space (Massey, 2005) to explore "the constitutive sociospatial context of policy-making activities" and "the hybrid mutations of policy techniques and practices across dynamized institutional landscapes" (Peck, 2011, p. 774). Enrolled in this process are a broad range of actors beyond the state, particularly private sector consultants (Larner & Laurie, 2010; Prince, 2012), whose role in urban governance has been increasingly normalized. Rather than viewing best practices as organically rising to the top on the basis of merit, policy mobilities scholars emphasize how policy mobilities are shaped by power relations as actors "move [policies] around for particular purposes" (Temenos & McCann, 2013, p. 344).

While policy mobilities makes use of a range of different methodological approaches, much of this research continues to analytically foreground the movement and flows of knowledge, people and ideas. This is most evident in the rapid and extensive uptake of McCann and Ward's (2012) method of "following the policy": a mobile method wherein researchers move with the policy, ideas and/or the actors involved in its circulations in order to capture "the multiple practices and sites involved in the assembling of urban policy in any one place" (p. 46). This is supplemented by the study of "relational situations" where policy knowledge is mobilized and circulated, including conferences, workshops, field trips, and site visits, as well as more informal spaces such as dinners and bars. Informed by an ethnographic sensibility, this approach affords attention to the daily practices of policy actors, with the goal of "seeing like a consultant" (Prince, 2012, p. 197).

The emphasis on mobile methods raises a number of important issues. Firstly, though policy mobilities research has paid critical attention to the inherent unevenness of policy applications, it has nonetheless emphasized the efficacy of globalizing policy discourses to travel to a wide range of politico-economic and institution contexts, suggesting a persistent mobility. Jacobs (2012) argues that 'following the policy' produces "a tendency for scholarship to stay fixated on policy presences, following what has already arrived and formed" (p. 418) resulting in an overemphasis on successful case studies, at the expense of attention to immobile policies and the multiple potential destines for policies. This is especially the case within the literature that examines policy mobilities through the lens of neoliberalization (Bunnell, 2015).

Additionally, the emphasis on 'following' policy presence has led to an overemphasis on global consultants and their agency. As Clarke (2012) writes: "some current geographical writing on contemporary urban policy mobility is too preoccupied with processes of neoliberalization to

recognize the range of agents involved in the field – the range of their political projects, and the extent of their agency" (p. 30). Consultants have enjoyed privileged attention in the literature at the expense of attention to the full range of actors involved in the everyday work of policymaking, such as engineers (Larner & Laurie, 2010; Bjorkman & Harris, 2018), professional practitioners, politicians, and even activists. Perhaps most surprising is that the state has not been given particularly critical attention, typically being represented as "a structural, functional backdrop to be negotiated, rather than a dynamic coalition of actors capable of actively creating and steering transnational trajectories of policy mobilization" (Bok & Coe, 2017, p. 53). This absence is significant given the demonstrated importance of national imaginaries in shaping policy mobilities (Bok, 2015; Koch, 2013). The identified importance of national imaginaries and agendas suggests a need for further research that examines more closely how state actors may facilitate, hinder, or disrupt policy mobilities.

Heeding warnings against fetishizing mobility and flows (McCann, 2008; Webber, 2015), a growing literature on policy mobility failures (Lauermann, 2016; Lovell, 2017a, 2017b; Müller, 2014) aims to counterbalance the disproportionate focus on the apparent hyper-mobilities of successful policy models and 'best practices'. This scholarship has challenged the implicit conflation of failure with immobility by demonstrating how policies may ostensibly fail on the ground, or not even materialize, but continue to circulate in policy networks with powerful material affects (Chang, 2017; Weller, 2009). For example, in her examination of a failed World Bank climate change adaptation project in Kiribati, Webber (2015) shows how difficulties encountered during the project's implementation were "recast as problems overcome, slipping from lessons learned to best practices" (p. 33). Similarly, Lauermann (2016) illustrates how failed bids to host the Olympic Games can still catalyze urban development, therefore serving the agendas of city officials. Furthermore, rather than exceptional, than Müller (2014) argues that instances of policy immobility are an everyday reality of policymaking, further substantiating the case for greater attention to instances of policy 'failure'.

There are a number of analytical insights to be gleaned by examining cases of 'failure'. As Perrons and Posocco (2009) argue: "failure opens up key trajectories of globalising processes to critical scrutiny and investigation, as the "global" is understood, interpreted and experienced through stoppages in flows, cuts in networks and new forms of exclusion" (p. 132). Building on McCann and Ward's (2015) conceptualization of success and failure as intertwined, Bok (n.d.) argues both success and failure are socio-political constructs, producing legacies that 'live on' into the future with material implications. It is only by examining instances of disruption inherent to policy mobilities that we might "illuminate the politics and power relations of globalizing processes" (Bok, n.d.). Studying failure therefore helps to elucidate a fuller picture of how global flows articulate with localized contexts. Furthermore, as Jacobs (2012) reminds us, studying failure also serves the project of challenging representations of neoliberalization as hegemonic, inevitable, and all encompassing.

Failure or friction?

Despite these recent theoretical developments, the policy mobilities literature tends to present failure as an exceptional event rather than one of the mundane realities of policy making and experimentation (Bok, personal communication, April 2018), inadvertently reifying a false binary between failure and success. These somewhat totalizing categories are able to capture the messy, indeterminate, and everyday processes through which policies are territorialized. Echoing calls within the mobilities literature to interrogate the relationship between 'mobilities' and 'moorings' (Hannam, Sheller, & Urry, 2006), mobilities scholar Tim Cresswell (2012) calls for urban policy mobilities to "pay attention to moments when the movement of ideas gets stuck, is made still, or is forced to wait for receptive audiences" (p. 651). More work is needed to examine this 'stillness' not as an end state (e.g. a "failed" project) but as part and parcel of policy mobilities.

To take this task, there are opportunities for policy mobilities to productively engage with studies of globalization and global power making. Anna Tsing's (2005) concept of friction is particularly instructive here. For Tsing, friction both makes global connection powerful and effective and "gets in the way of the smooth operation of power" (p. 6). To attend to friction is to "[refuse] the lie that global power operates as a well-oiled machine" (p. 6). While theories of globalization and time-space compression imagine the travel of ideas, commodities, and people to occur more quickly and effortlessly, Tsing reminds us that space can become "expansive, labored, and wild" (p. 75) just as time can become "quickened but into the rush of acceleration" (p. 76). She maintains that analytical attention to disruptions and disconnections provides a means to better capture both "the effectiveness, and the fragility" (p. 77) of global capitalism. Also examining efforts to globalize particular forms of knowledge, Michael Goldman (2005) draws our attention to the "fragile hegemony" (p. 45) of the World Bank, which must continuously negotiate frequent grassroots challenges to its authority. Likewise, Domosh (2010) draws our attention to both friction and motion as global power is made and remade. By exposing the "uneven, contested, and messy ways" (p. 419) that Citibank expanded globally, Domosh illustrates how the trajectory of the bank's development was shaped in unintended and unexpected ways by particular encounters with people and places. These accounts illustrate the inevitability of friction, as a prosaic reality rather than a spectacular event.

This chapter draws together these insights with the scholarship in policy mobilities on failure to examine the "grounded and messy ways" (Temenos & Baker, 2015, p. 842) in which Dutch expertise encounters friction in the localized context of Jakarta. In doing so, this chapter takes up Robinson's (2015) calls for a closer consideration of how policies are imagined and/or realized locally. My aim is to elucidate the uncertainties inherent to policy mobilities and to challenge representations of such

movements as inevitable or unhindered. Before examining how Dutch expertise is localized in Jakarta through the GGSW project, the next section of this chapter examines efforts by the Dutch government and Dutch water sector to present their expertise as generalizable and universal.

Globalizing Dutch Expertise: Exporting the Dutch Delta Approach

The Dutch Water Sector and the Government of the Netherlands have embarked upon a number of projects and programs intended to strengthen the position of the Dutch economy and cement the Dutch position as international leaders in water governance and management. Partners for Water (a program to subsidize and support Dutch projects abroad) and The Netherlands Water Partnership[14] have been established explicitly to strengthen the international position of the Dutch water sector[15]. In 2015, the Government of the Netherlands appointed its first Special Envoy for International Water Affairs, a role specifically designed to "[boost] the international market position of Dutch know-how and expertise" (Government of the Netherlands, 2015) through economic diplomacy, including maintaining relations with foreign governments as well as bilateral and multilateral actors such as the World Bank. One of the primary areas in which the Dutch seek to maintain a leading position is delta management. In 2016, the Dutch ministries of Foreign Affairs, Economic Affairs, and Infrastructure

---

[14] The Netherlands Water Partnership (NWP) is a network of companies, NGOs, knowledge institutes and government ministries with water expertise. With more than 200 members, NWP coordinates policy developments and market opportunities, facilitates knowledge sharing and collaboration, and coordinates the international representation of the Dutch Water Sector.

[15] The National Water Plan (2016 – 2019) explicitly prioritizes those international collaborations that focus on "reducing the risk of water-related disasters and reinforcing defences" (National Water Plan 2016-2019: 63).

and the Environment jointly launched the International Water Ambition (IWA). Financed by *Partners for Water*[16], the initiative is intended to position the Netherlands at the forefront of efforts to achieve water security in urban deltas around the world, while pursuing economic opportunities for Dutch companies abroad.

Dutch foreign policy supports this global expansion of the Dutch Water Sector. In 2013, the Ministry of Foreign Affairs of the Netherlands published *A World to Gain: A New Agenda for Aid, Trade, and Investment*. The document outlines the government's plans for a shift away from Official Development Assistance and towards a policy of trade and investment intended to support the internationalization of Dutch companies and facilitate their success abroad. For countries such as Indonesia, with whom the Netherlands has a "transitional relationship" (characterized by both aid and trade relations), the Dutch government intends to phase out aid and the use of grants, instead promoting private sector involvement and the opening of markets to trade and business. The Dutch government and the Dutch Water Sector are therefore actively involved in practices of "making markets" (Baker, Cook, McCann, Temenos, & Ward, 2016, p. 464) in which new destinations for commodified forms of Dutch expertise are "painstakingly created in professional and ideological landscapes elsewhere" (p. 465). These efforts to provide political and institutional support for Dutch water sector ventures abroad illustrate the "continuous work" (Machold, 2015, p. 827) that goes into maintaining the position of Dutch experts as international leaders in water. This is to say that there is nothing natural about the international

---

[16] IWA also builds on the policy framework *Water Mondiaal* (Global Water) launched in 2010 to strength ties with five river deltas around the world: Bangladesh, Egypt, Indonesia, Mozambique and Vietnam

prevalence of the Dutch Water Sector. Instead, the processes through which the Dutch aim to create

and maintain a foothold in a competitive market are acutely political.

The Dutch Delta Approach

One such export that the IWA and Dutch government actively promotes is the Dutch Delta

Approach: a comprehensive, integrated and adaptable approach to sustainable delta management.

While stressing that Dutch Delta Approach is not a 'blueprint', the Dutch government and water

sector have sought to market the Dutch Delta Approach (DDA) as "a characteristic and recognizable

approach" (Netherlands Water Partnership, n.d., p. 6) applicable to other deltas across "various social,

economic and cultural contexts" (Kingdom of the Netherlands, 2017, p. 3). Several principles are key

to the DDA: private sector involvement; integration between water management, spatial planning and

economic functions; multi-level governance; and adaptive planning based on a range of scenarios. The

Dutch Water Sector makes claims to the DDA as a form of best practice partly on the basis of its

success at home and the experiences of the Netherlands as a delta. As one architect explained: "we

have the best controlled, the best managed, the best maintained, the best designed delta in the world"

(interview with architect. December 14, 2015).

Representations of the DDA as a form of exportable best practice obscure the specific institutional

context of the Netherlands from which the approach emerges. The DDA is based on the Netherlands'

Delta Programme to ensure protection from flooding and secure a freshwater supply. Initiated in 2011,

the national program reflects a broader transition in Dutch water management from an emphasis on

protection and risk management to more long-term and integrated planning approaches. It is

institutionalized by the Delta Act, which is intended to 'depoliticize' water management and make it

less vulnerable to political turbulence by providing financial stability via an established Delta Fund

and the appointment of a Delta Commissioner. Furthermore, the Netherlands is distinguished from many other sites in which the Dutch operate by its long history of "anthropogenic modifications" to its delta (Netherlands Water Partnership, n.d., p. 9) and unique institutional context, exemplified by the Dutch system of water boards, which together have long afforded the Dutch protection from rising seas. As such, many Dutch successes are difficult to replicate, as the Director of the Netherlands Water Partnership explained in relation to stakeholder management and public participation in the planning and implementation of large-scale projects:

"… I think that's also one of the strengths of the way we work in the Netherlands. But again, this is not easy to copy, and you cannot copy such things easily to another country because we've gone through a different system." (interview with the Director of the Netherlands Water Partnership, December 18, 2015.)

Thus, much work has to be done to translate the DDA beyond the context of the Netherlands to different institutional contexts. As Temenos and McCann (2011) write: "The process of *creating equivalence where it may not apparently exist* is a powerful one. It takes expertise and generally involves a familiarity with specialized, technical, conceptual, or abstract language, and/or with calculative techniques like indicators or benchmarking" (p. 1393, emphasis added). The underlying basis of the DDA is an assertion that "the parameters governing sustainable delta management are comparable" (Kingdom of the Netherlands, 2017, p. 3). This is visualized through twelve 'essential building blocks' for sustainable delta management (see Table 1, adapted from the *Dutch Delta Approach* handbook).

Table 1. The 12 Essential Building Blocks

Building Block	Description
(i) Integrated Approach	Integrated water management, economic growth, and spatial planning. An integrated delta plan should include plans for organization, finance and planning.
(ii) Sustainability, flexibility, solidarity	Solutions should be planned for the future and not harm environment or society.
(iii) Long-term approach vs. short term measures	Always taking the long term into account, even when planning short term measures
(iv) Dealing with uncertainties and using scenarios	Using future development scenarios to integrate long term planning into short term measures
(v) Dealing with uncertainties in decision making	Adaptive decision making on the basis of available data
(vi) Anchoring in legislation and de-politicization	Legal basis and appointed non-political commissioner to avoid political turbulence and ensure stability
(vii) Focus on key decisions and clear deadlines	Clear deadlines to ensure progress and avoid delays
(viii) Innovation	Developing new technologies
(ix) Cooperation with other government levels and stakeholders	Multi-scale governance involving national, regional and local governments and stakeholders
(x) Finance and implementation	An emphasis on securing long-term funding; potentially involving the private sector
(xi) Supported analysis instruments	Using analysis instruments to guide decision-making and solutions
(xii) Quality label	A 'tool' to assess whether an approach meets the standards of the Dutch Delta Approach

The DDA brochure showcases some nine countries where the approach has been (or will be) rolled out: Bangladesh, Indonesia, Egypt, the US, Myanmar, Mozambique, Poland, Vietnam, and Colombia. While marketed as a single product, a review of the DDA indicates that the approach materializes very differently across geographical contexts. For example, with its heavy emphasis on sea defenses and urban redevelopment, the Great Garuda Sea Wall project in Jakarta stands in stark contrast to the *Room for the River* project in the Netherlands, which relies on converting agricultural land to floodplains and allowing more space for rivers to flow at times of high rainfall. Illustrative of the common tension between a demand for "bespoke" policies that are tailored to local contexts, and off the shelf policies made "easily accessible in packaged, readily consumable, and mobile form" (Temenos & McCann, 2012, p. 1393), the DDA is a malleable policy object intended to render a wide range of different sites commensurable.

Operationalizing the Dutch Delta Approach: Jakarta's Great Garuda Sea Wall Project

In the master plan, the Great Garuda Sea Wall project comprises three stages. Stage A refers to the strengthening of the existing inner sea wall that runs along Jakarta's coastline. Stages B and C refer to the construction of an eastern and western offshore sea wall which would effectively close the Bay of Jakarta, transforming it into an offshore retention lake. The plan calls for large-capacity pumping stations along the city's coastline to facilitate the discharge of the rivers into the Java Sea. Of the 12 building blocks of the Dutch Delta Approach, the project is used by the Dutch government to exemplify four in particular: an integrated approach; finance and implementation; long-term approach vs. short term measures; and dealing with uncertainties using scenarios. Table 2 summarizes how each of these building blocks is operationalized in the master plan. The GGSW project is understood to be an *integrated* design because it combines structural measures for flood safety (e.g. sea walls and pumping stations) with plans for urban development, including toll roads and transportation infrastructure, land

reclamation and a new Central Business District. The *finance and implementation* strategy is reliant heavily on attracting private sector investment with commercially viable aspects of the master plan, and using PPPs and State Owned Enterprises (SOEs) to finance the construction of flood safety infrastructure. In addition to short term measures (namely Stage A), the GGSW project has been designed to provide protection against the predicted increased risk of flooding in the future (Stages B and C).

Table 2. Operationalization of the Building Blocks in the GGSW Project Master Plan

Building Block	Translation into GGSW Project
Integrated Approach	Integrating flood safety with urban development.
Finance and implementation	Combined financial strategies including use of PPPs, private sector involvement and SOEs.
Long-term approach vs. short term measures	Stage A is designed for the 'short term' by providing temporary relief from flooding. Stages B and C are planned to provide protection against the predicted increase in flood risk due to land subsidence.
Dealing with uncertainties using scenarios	Scenario development in early stages of the project to aid decision making

Though now used as an example of the approach at work abroad, the GGSW project was not initially envisioned as a roll out of the Dutch Delta Approach. In fact, the history of the GGSW project (summarized in Figure 3) precedes the publication of the DDA brochure in 2014. In 2007, following Jakarta's worst flood event in three centuries (Brinkman & Hartman, n.d.), the Indonesian government requested the assistance of the Dutch government with understanding the causes of flooding and "non-structural" issues relating to water management and governance. This was followed by the Jakarta Flood Management (JFM) project carried out by Deltares, an independent research institute based in Delft and Utrecht with a longstanding presence and local office in Jakarta. Deltares prepared

a hydrological model and carried out a flood hazard mapping exercise, identifying the threat of flooding from the sea and the issue of land subsidence and recommending a series of "no regret measures" which are understood as absolutely necessary regardless of future scenarios[17].
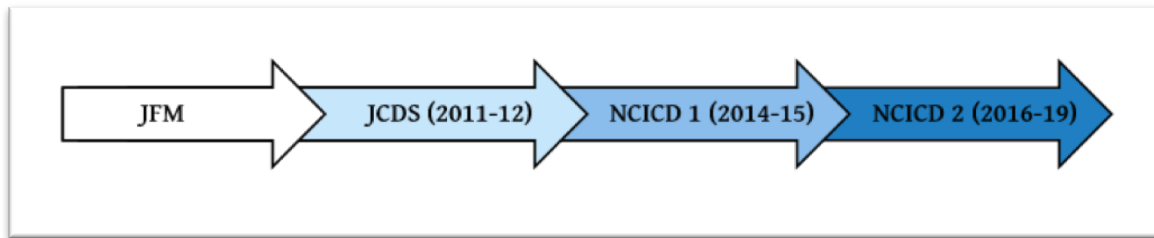
Figure 3. Timeline from Jakarta Flood Management Program to the NCICD 2.

The JFM project provided the basis for the Jakarta Coastal Defense Strategy (JCDS). Undertaken under the umbrella of bilateral cooperation[18] between the Indonesian and Dutch governments, the JCDS involved collaboration between various consultancy firms (Deltares, Urban Solutions, Witteveen+Bos, and Triple-A Team), *Pusair* (the Water Resources Research and Development Center housed by the Indonesian Ministry of Public Works and Housing) and the Bandung Institute for

---

[17] The no regret measures recommended by the Jakarta Flood Management project later became the basis for the city's river dredging projects, partially funded by the World Bank.

[18] A Memorandum of Understanding (MoU) has existed in the field of water since 2001. In 2012, a 4-party Memorandum of Understanding in the field of water was signed by the Indonesian Ministry of Public Works, the Indonesian Ministry of Environment, and the Dutch Ministry of Infrastructure and Environment. The MoU provides a framework for bilateral cooperation between the Indonesian government and the Dutch government. Projects carried out under the MoU include the Jakarta Flood Management (JFM) project, the Pilot Dredging Project, the JCDS project, and the NCICD.

Technology. Completed between October 2010 and September 2011, the JCDS produced a set of three documents: *Atlas* (describing the existing situation and plans including the flood problems); *Agenda* (identifying possible solutions); and *Aturan-main*, (laying out how to implement these). The JCDS concluded with recommendations for a three-stage project to protect Jakarta from flooding from the sea, involving the construction of three sea defenses, one along the coast, and two offshore. 3,000 hectares of land would be reclaimed from Jakarta Bay. These recommendations became the basis of a tender for the "preparation of a master plan for Jakarta coastal protection strategy"[19] issued by the Dutch government in October 2012, and subsequently awarded to a consortium led by Dutch engineering and consulting agency Witteveen+Bos. The Dutch government also issued a tender to assist with the establishment of a Program Management Unit (a dedicated organization comprised of several ministries and directly under the President) and to oversee stakeholder management and the institutional, finance and business case aspects of the project. This was awarded to a consortium led by engineering consultancy firm HaskoningDHV and including Deltares, consultancy firm Rebel Group and UNESCO-IHE[20].

In late 2014, the master plan was completed. A groundbreaking ceremony was held in early October that year, attended by officials from the Indonesian Coordinating Ministry of Economic Affairs, Ministry for Environment, Ministry of Maritime Affairs and Fisheries, Ministry of National Development Planning (BAPPENAS), Ministry of Public Works, the Deputy Governor for spatial planning for the provincial government of DKI Jakarta, and the Dutch Ambassador to Indonesia. However, more than three years later, the future of the GGSW project remains uncertain. The

---

[19] Translated from: *Inhuur ten behoeve van het opstellen van een Masterplan voor kustbeschermingsstrategie Jakarta*

[20] Now known as IHE Delft Institute for Water Education.

Indonesian government has neither officially committed to the project, nor written off its implementation entirely. As a liminal project that constitutes neither wholly a success nor a failure[21], the GGSW project provides a lens through which to further interrogate the frictions inherent to efforts to globalize Dutch expertise via the (attempted) rollout of the Dutch Delta Approach. The final section of this chapter now turns to examine the challenges posed to the implementation of the project from the perspective of Dutch consultants and Indonesian state actors.

As the Rubber Hits the Road: Productive and Disruptive Friction

Tsing (2005) warns against conflating friction with resistance. Instead, her conceptualization of friction asks us to look not only at the disruptions caused by friction, but also how friction keeps the project of globalization in motion. Taking this up, this section of the chapter examines both the disruptive and productive dimensions of friction. The first part of the following section examines the challenges encountered by consultants in their struggles to smooth over the particularities of the Indonesian context. The second part turns to examine how the GGSW project took on new and unexpected meanings in Jakarta, with material and political effects.

Friction as Disruption

Notwithstanding the time, staff, resources and funding committed to the development of the GGSW project master plan by the Dutch government and the consortium of consultancy and engineering firms, by the time of my fieldwork in fall of 2015, progress had evidently stalled. While Stage A was

---

[21] Notions of policy 'success' and 'failure' are understood in the policy mobilities literature to constitute socio-political constructs. While endorsing this conceptualization, here I use the terms success and failure in terms of whether the project master plan is implemented or abandoned.

unanimously agreed upon by the provincial and national government ministries as a necessary "no regret" measure, a consensus regarding Stages B and C had not been reached. During interviews, consultants told stories of stalled progress and delays. It was consistently difficult to arrange interviews with individuals in the provincial or national ministries that were, on paper at least, closely involved in the master planning and who would theoretically be involved in the eventual implementation of the project. In interviews I secured, government staff spoke of the project in vague and noncommittal terms, particularly regarding Stages B and C, the construction of the giant sea wall and land reclamation[22]. One likely reason for this reluctance is that the Indonesian government – or more specifically, the President – had not at the time made a final "go or no go" decision on the project. This meant that the project lacked the necessary legal basis (a signed Presidential Regulation) and firm direction from the President. As one consultant noted, "unless everything is settled in the *PerPres* [Presidential Regulation] and everything is arranged, people have difficulties to commit" (Interview with consultant, November 20, 2015).

While Dutch consultants were contracted to work full time on the project (at least one of whom relocated himself and his family to Jakarta), I was struck by what I perceived to be an ambiguity towards the project on the part of the Indonesian government. That the Indonesian government had not committed the equivalent staff, resources, or funding proved to be a point of contention between

---

[22] On a methodological note, decision making in the Indonesian government remains hierarchal. This has implications for interviewing lower-level bureaucrats who may not have wanted to discuss the project without clear direction from the President. While the apprehension or ambivalence of these individuals might be a guise against disclosing their own personal opinions, I interpret it to at least partly reflect the unclear future of the project and their role in its implementation.

Dutch consultants and the Indonesian state in the early stages of the project. As one consultant closely involved in the project described:

> "… the original agreement was that the Netherlands government would pay their staff, and the Indonesian government would assign their own staff. The first happened, there was a consortium, it was about fifty engineers. The latter never happened. (…) that led to frictions." (Interview with consultant, September 29, 2015).

Despite recommendations by consultants to establish a dedicated organization modeled on the Dutch Delta Commissioner to oversee implementation of the project and protect it from political turbulence, by 2016 this still had not been established:

> "…in the Netherlands what we did, we put in place a Delta Commission and a Delta Commissioner who is not a political figure and is kept in place. So basically, an ambassador, high level, who are responsible for a program or a project. Now we've tried to introduce the same concept here (…) we cannot be dependent on now we have Jokowi who wants this and then next election we have a different guy who does something completely different - why? Because it's the necessity for the safety of the population so always trying to introduce this concept of taking it out of politics. And then advising in that way. Um but it's never been adopted up to now". (Interview with consultant. August 08, 2016).

The remarks of the consultant above also refer to efforts to depoliticize the GGSW project, by "taking it out of politics" as has been done in the Netherlands with the *Delta Programme*, alluding to a broader effort by consultants to "disentangle" (Appel, 2012) the GGSW project and their work from political,

economic and social life in Jakarta. However, as the next section will show, the project is inextricably entangled in the localized context.

In interviews with consultants and government staff, the Indonesian government was presented as being reluctant to allocate funding from the national budget to the project, preferring instead to use private sector involvement to finance the project. In interviews, government staff suggested that this reluctance might stem partly from the responsibility of the national government to fairly allocate funding from the national budget across Indonesia. While Jokowi was a keen advocate for the project as Jakarta's Governor, as President he faced a different set of responsibilities and priorities, as a member of staff from Water Resources, BAPPENAS explained:

> "I think is the biggest challenge, how to finance that because (…) we cannot put all the money in Jakarta. We have many other area [sic] in Indonesia that also need the development. That's why we encourage to have the PPP (public-private partnership) instead of using all the government money (…) Jokowi really wants to spread out the economic development (…) when he was a governor, he just wanted to know about how to make Jakarta better. When he is president, he has to think about broader [issues]." (Interview with staff from Water Resources, BAPPENAS August 24, 2016).

Regardless of the exact reason, the government's seeming reluctance to commit funding to the project presented a significant challenge for those consultants tasked with ensuring the financial viability of the project, particularly since the master plan relies on large upfront investments. As one consultant explained:

> "It's also difficult because the amount of money is huge, and if you, as long as you're not ready to prepare, if you're not ready to pay for it, you have, it's quite a difficult

60

discussion to get anywhere. So, I would say that, as one of the biggest problems".

(Interview with consultant, November 20, 2015).

Meanwhile, it was evident that the provincial government of DKI Jakarta[23], or rather then-Governor of Jakarta Ahok, had less interest in the longer-term aspects of the project (Stages B and C):

> "[Ahok is] focusing on the current sea wall [Stage A], that's his priority (…) the only thing he does not want to do is look at the outer sea wall yet, because it's past…his ruling period." (Interview with consultant, November 20, 2015).

Thus, far from operating in a frictionless environment, Dutch consultants had to contend with the shifting political agendas and priorities of various state actors and political elites "capable of actively creating and steering transnational trajectories of policy mobilization" (Bok & Coe, 2017, p. 53). Subsequently, Dutch consultants sought to promote the use of private-public partnerships, while continuing to encourage the Indonesian government to make some financial commitment (also to ensure investors). The reliance of the master plan on attracting private investment also led to greater dependence on land reclamation as a means of maintaining the financial feasibility of the project, with a significant bearing on the project and its future prospects.

In addition to concerns regarding the commitment of both the provincial and national governments to realizing the project, consultants also identified what they perceived as a lack of institutional capacity as an ongoing challenge. Due to the scale and complexity of the GGSW project, the successful

---

[23] Since the project is designed to protect Indonesia's capital city, it is understood as being of national importance and therefore falls under the remit of the Indonesian government. However, as the provincial government of Jakarta, DKI Jakarta are also envisioned as being closely involved.

implementation of the project is understood to hinge on the development of 'institutional capacity',

which has been emphasized in documents and by consultants. Institutional capacity in this context is

understood to refer to the knowledge, skills and resources of institutions and staff to oversee the

successful implementation of the project. For example, consultants referenced the fact that only a

limited number of individuals in the Indonesian government were regarded as having an in-depth

understanding the project:

> "…we were working with a consortium, two people from Public Works and actually
>
> only one person from the Coordinating Ministry for Economic Affairs (…) So you
>
> have good key players there, but only a few people." (Interview with consultant,
>
> December 15, 2015).

Consultants discussed the challenges of what they perceived as a lack of coordination between

different ministries and an absence of long-term planning, both of which were regarded as challenges

to implementing the GGSW project:

> "… in the Netherlands we are culturally more used to working together on projects
>
> (…) But in Indonesia it's more fragmented. (…) each ministry has its own focus and
>
> they're less willing to work together to form one team…" (Interview with consultant,
>
> December 14, 2015)

A perceived lack of institutional capacity to implement the project was also reflected in the comments

of Indonesian staff, and their apprehensions about the complexity of the project and the Indonesian

state's ability to meet funding and staffing needs:

"…many of us still don't believe that we can reach this, we can finalize this. Because

this is really huge, you need to have a huge, huge funding and then at the same time it

is complicated." (Interview with staff of provincial government, August 2016)

While Dutch involvement in Jakarta is rationalized on the basis of the Netherlands' "specific tradition

and experience in making low-lying areas suitable for habitation[24]" (Ministry of Economic Affairs,

Agriculture and Innovation, 2012, p. 9), the institutional context of Jakarta (and Indonesia more

broadly) evidently bears little resemblance to that of the Netherlands, posing challenges for

implementation. This was consistently reflected in the comments of numerous consultants in the

explicit and implicit comparisons they made to the Netherlands:

"…in the Netherlands, everything is open. But decision-making processes in

Indonesia are still hidden in some way." (Interview with government official,

December 03, 2015)

"…mostly the technical design aspects are quite similar to the Netherlands, you can

apply the same methodology, the same kind of analysis, the same kind of design

principles but there are many differences in terms of institutional capabilities of

government…" (Interview with consultant, December 14, 2015)

A lack of institutional capacity is considered risky by consultants for a number of reasons: (i) it may

mean that implementation is led by Dutch consultants, rather than the Indonesian government, by

extension producing a lack of Indonesian ownership of the project and thus responsibility for its

---

[24] Translated from: *specifieke traditie en ervaring om laaggelegen gebieden geschikt te maken voor bewoning.*

success or failure; (ii) the more politically sensitive aspects of the project, such as evictions and relocations may not be properly handled; (iii) the project may not be effectively communicated to the public; (iv) private sector involvement may be poorly regulated with negative consequences. These are not insignificant risks. The challenges faced by consultants and government staff tasked with realizing the GGSW project illustrate the "the awkwardness of translation" (Tsing, 2005, p. 211) as consultants work to smooth over particularities and render the different institutional contexts of the Netherlands and Indonesia comparable. Further, the consultants' remarks above raise questions about the applicability of Dutch expertise. Observing that the World Bank mobilized discourses of institutional capacity in order to explain the failure of their projects in the Pacific Islands, Dean, Green and Nunn (2017) observe: "Instead of the World Bank being compelled to reflect on whether its procedures and requirements were reasonable and feasible within the Kiribati context, their necessity and legitimacy was taken as given: benchmarks by which to judge who, and how others, lacked capacity" (p. 68). Similarly, the appropriateness of the GGSW project to Jakarta has rarely been explicitly considered by its proponents (either consultants or government staff), though a number of Dutch consultants did acknowledge the possibility of pursuing a less complex, less ambitious version of the master plan, such as a 'dyke only alternative' (a giant sea wall without land reclamation).

In addition to the challenges associated with the particularities of the Indonesian context, progress on the project has also stalled due to the hesitancy or concerns of individuals within the Indonesian government to the project. In 2014 with the election of the new President, many members of staff and Director Generals of the ministries that had been involved in the GGSW project were no longer in office, and those who replaced them were unfamiliar with the project and had questions and concerns that needed to be addressed:

"So this new cabinet was, consisted of totally new people and the concerns were raised throughout the ministries and so this new cabinet was like "what is this project?" You know, "is this over the top?" And also, they lost the original intention of the project: flood safety. It was only about the great *Garuda*. And so, this new cabinet was quite hesitant to proceed and only the ministries, like Menko [Coordinating Ministry of Maritime Affairs] and BAPPENAS but also President Jokowi who are familiar with the project… they were still endorsing the project. But they couldn't really ignore all this, the questions. So now it has been decided, finally, that there will be an organization that will have a look again to the whole project in the coming two years." (Interview with consultant, September 29, 2015).

The decision was subsequently made to have a two-year review of the GGSW project, referred to as NCICD 2, in order to allow time for further studies and primary data collection to strengthen the master plan. This was supported financially by a second round of funding from the Dutch government and the Government of South Korea, and a new trilateral Memorandum of Understanding signed in 2015.

The project has also been stalled by more direct moments of resistance to the master plan. While the Ministry of Public Works and BAPPENAS have remained relatively steadfast in their support of the project, other ministries have raised concerns about the purpose of the project, its technical and financial feasibility, and its potential environmental and social impacts. The Ministry for Maritime and Fisheries, in particular, has raised questions about the necessity of land reclamation and the potentially negative environmental impacts of closing Jakarta Bay (such as the loss of fisheries and the concentration of polluted water). In October 2017, while I sat in reception of a Dutch engineering firm, I picked up a copy of the newspaper *The Jakarta Post* while waiting to meet with one of their

consultants. An article published that day declaring "Sea wall an environmental disaster: study" reported on the findings of a recent study published by the Research and Development Center for Marine and Coastal Resource at the Indonesian Ministry of Maritime Affairs and Fisheries. I asked the consultant I met with that afternoon if they were aware of the study. They were not, having not yet seen the newspaper that day, and expressed their regrets that the ministry had not raised their concerns directly. This was just one example of numerous times where support from the Indonesian state was exposed as uneven and fragmented. In interviews, staff discussed these ongoing debates as to the primary purpose for the GGSW project, which after several years was still not clear to staff within the various ministries:

> "… it's just [we] need to decide (…) whether we need the NCICD Phase B, C or whether we just finish with NCICD Phase A. Yeah. And a lot of consideration there because it's not only about technical but also social, environment. We have the mangrove there. We have the fishermen there. (…) what will happen if we have the reclamation and the dike, what will happen with sediment, what will happen with water quality? (…) some people and I also I agree that it's quite massive construction work, it's very expensive (…) it will be good to have a sophisticated, well planned but is that really something that we need, at the moment?" (Interview with staff of Water Resources, BAPPENAS August 24, 2016)

These moments of friction – evident in the hesitancy or resistance of different state ministries to the project – illustrate the agency of the state to disrupt the project of globalizing Dutch expertise. Rather than being characterized by unimpeded motion, encounters between Dutch consultants and various Indonesian state actors illustrate that this is a project which is vulnerable to "everyday malfunctions as well as unexpected cataclysms" (Tsing, 2005, p. 6). Furthermore, the state is exposed here not as

monolithic or singular, but as a fragmented and uneven entity comprised of different, often contradicting, political agendas and interests.

Friction as Productive

Regardless of a series of potentially disruptive frictions, the GGSW project and the Dutch expertise it embodies remain in motion, albeit orientated towards new and unexpected directions. The GGSW project has intersected with and been shaped by the pre-existing political agendas of a range of different actors in unanticipated ways, simultaneously threatening the success of the overall project and keeping it in motion. Infrastructure projects are strongly associated with ideas of desire, fantasy and possibility, what Larkin (2013) refers to as the "poetics of infrastructure", as well as notions of modernity, particularly in the postcolonial context. For provincial and national state actors, the GGSW project acquired status as project of national importance and pride, re-envisioning Jakarta's place in the global economy and positioning the city at the forefront of global climate change adaptation efforts. Yet the meanings of infrastructural projects are not predetermined; projects take on multiple meanings, in often unintended ways. Demonstrating that policies never arrives in a vacuum but are instead confronted with "pre-existing socioeconomic institutions and cultural contexts" (Chang & Sheppard, 2013, p. 61), the GGSW project has become entangled in longstanding redevelopment plans for North Jakarta and a series of hotly contested reclamation projects (currently underway), commonly referred to as the 17 islands[25]. Plans for the 17 islands date back to then-President Suharto's "Rebirth of Jayakarta" plan in the mid 1990s (Silver, 2007). This plan envisioned the creation of a waterfront city through revitalization efforts, transportation infrastructure, and the reclamation of some 2,500

---

[25] The islands will be built using sand from elsewhere in Java. For a discussion of the politics of sand mining, see Batubara, Kooy, and Zwarteveen (2018).

hectares of land. It also carved out a specific role for the private sector in realizing the project (Sidarta, 1996). Long a backyard to the city since its abandonment by the Dutch, North Jakarta would find a new place in the city with a new Central Business District. Though a Presidential Decree was signed (Keppres No. 52/1995) and the Jakarta Waterfront Implementation Board established, the project was stalled by the Asian financial crisis (*krismon)* of 1997. These projects were subsequently restarted in the 2000s when DKI issued the permits to developers.
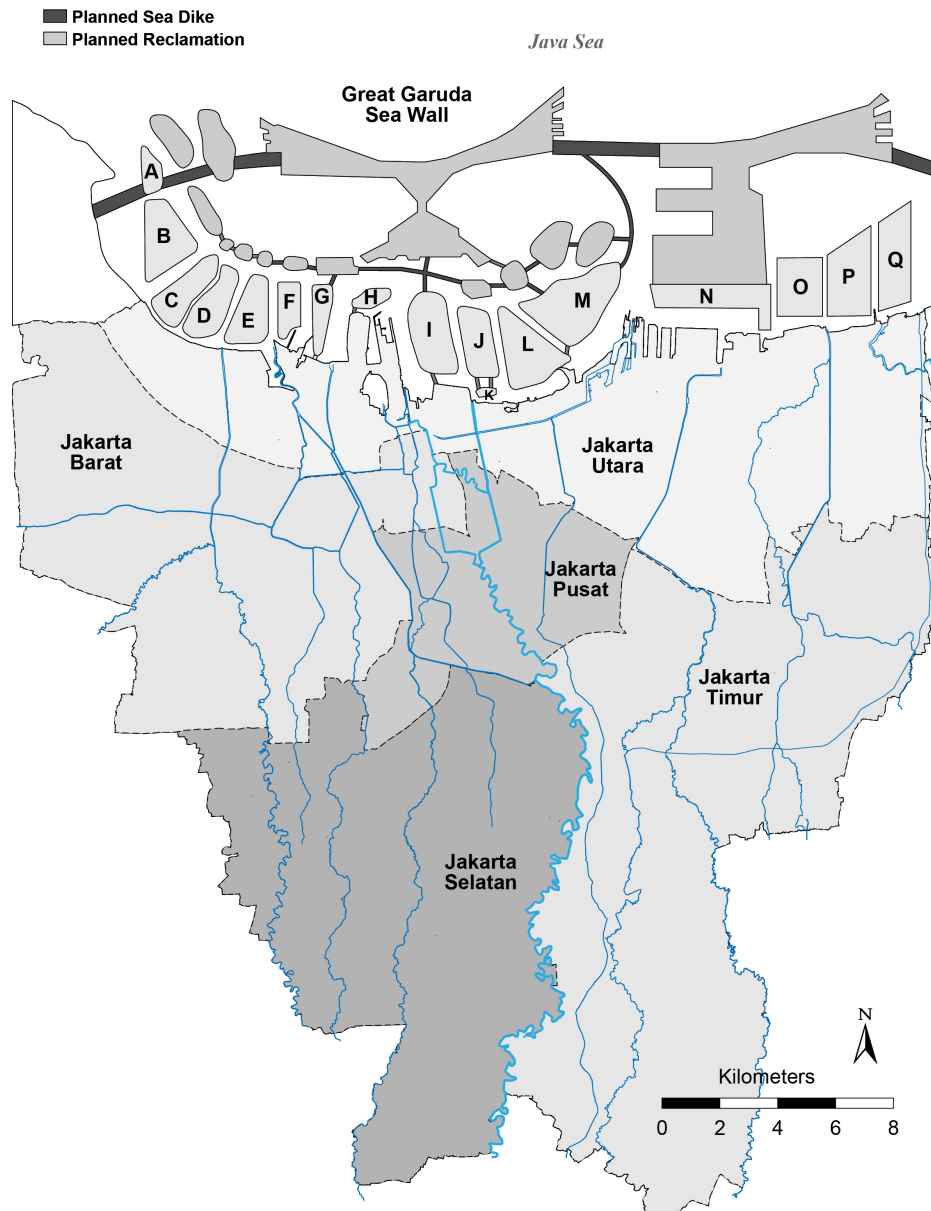
Figure 4. Map of proposed 17 islands and GGSW Project. Credit: Matt Zebrowski.

Before the master plan was finalized, BAPPENAS sought to integrate the 17 islands (referred to as island A, B, C…Q, see Figure 4) into the GGSW project, with the intention of using revenues from the reclamations to finance the outer sea wall, thus improving the business case for the project. However, this was vetoed by the provincial government of DKI Jakarta, who did not wish to risk

losing a potential source of revenue provided by the 17 islands[26]. Subsequently Dutch consultants in consultation with Indonesian ministries, designed the GGSW project master plan to include 1,250 hectares of additional reclaimed land in the shape of the *Garuda*, entirely separate from the 17 islands. Illustrating how policies may already be local (Robinson, 2015), the master plan built on pre-existing desires to redevelop North Jakarta through land reclamation projects. In particular, the introduction of the concept of the *Garuda* captured the imagination of political elites by invoking the nationalist sentiments underpinning the reclamation projects:

> "… when the *Garuda* was introduced it was, yeah, it was really a moment that more energy flowed into the master plan, so this was very positive (…) it triggered (…) more interest because the project also shifted a bit from only being a sea wall to providing perspective for the city, which is also one of the goals for the master plan." (Interview with consultant, December 14, 2015).

For the national government, the master plan was perceived as an opportunity to provide a long-term solution to flooding and to redevelop North Jakarta, without financially burdening the ministries. In initial discussions to develop the *Garuda*, some Indonesian actors in BAPPENAS pushed for a scenario with the maximum amount of reclaimed land possible:

> "…the idea was the more land reclamation we add to the project, the more we will create revenues. We had to temper [BAPPENAS'] enthusiasm because on paper, yes, the excel sheet does look very good with so much land reclamation. But where do you

---

[26] A reclamation bylaw dictates that 15% of the land reclaimed must be given to DKI Jakarta. Additionally, DKI Jakarta intended to use revenues from the 17 islands to subsidize pumping stations and *rusunawa* (public housing). (Interview with consultant, November 20, 2015).

get the sand? The development time is going to be very long…the project will become very complicated…But still BAPPENAS was still the big driver behind this bigger, bigger, biggest development" (Interview with consultant. September 29, 2015).

The emphasis on land reclamation and property development significantly altered the master plan and how it was perceived, transforming what was intended to be a flood mitigation project into an integrated urban development project. As one consultant reflected: "it started as a water project. During the process, it looked like it became a real estate program because people were only really focusing on real estate. But we concluded it is an integrated project" (interview with financial consultant, December 27, 2015). Despite the enthusiasm from the national government, plans for land reclamation were somewhat unpopular with the provincial government of DKI Jakarta. While the technical and financial assistance of the Dutch provided momentum for strengthening the inner sea wall and revitalizing North Jakarta (both very much in the interest of the provincial government), DKI Jakarta feared that additional reclaimed land might undermine the competitiveness of the 17 islands from which it stood to benefit. At the same time, consultants viewed the 17 islands as problematic to the feasibility of the GGSW project:

> "…you're going to have land development of the current set of 17 islands compete with the land development of the *Garuda*. Now the absorption capacity of new land, and therefore the value of new land, is not great enough to have 5 or 6000 hectares of land, right? It will just mean that both pieces of new land will have lesser value than initially anticipated." (Interview with consultant. August 08, 2016)

Additionally, while consultants maintained during interviews that the GGSW project and 17 islands were separate, the lack of a strong socialization and communication strategy resulted in widespread

confusion among the public and the media regarding the relationship between them. This was evident in the many newspaper articles that either implicitly conflated the two projects or declared the 17 islands to be part of the GGSW project. As a result, the GGSW project (particularly the plans for land reclamation) unintentionally lent legitimacy to the plans of property developers to reclaim land from Jakarta Bay. For example, Skidmore, Owings, and Merrill LLP (SOM), an architecture, design, engineering, and urban planning firm hired by Indonesian real estate and property developer *Agung Podomoro Land* to develop the master plan for Pluit City (island G of the 17 islands) claims on its website:

> SOM's master plan for two new islands on 450 hectares of reclaimed land off the
> north coast of Jakarta, Indonesia, creates the first phase of a unique "archipelago"
> city district to be built in the historic Jakarta Bay. They offer an affordable solution
> to providing for Jakarta's swiftly swelling population, while helping to deliver a sea
> defense to protect the city from sea level rise and severe storm surges that threaten
> millions of its residents.

The above mention of 'delivering a sea defense' is likely a reference to plans by DKI Jakarta to cross-subsidize the inner sea wall (currently under construction) using revenues from the 17 islands. By mobilizing discourses of adaptation against rising seas, developers have sought to draw associations between land reclamation and flood protection to legitimize the 17 islands[27]. At the same time as the

---

[27] The provincial and national governments have also contributed to supporting this narrative by presenting land reclamation as the solution to Jakarta's perceived land shortage amidst a housing crisis.

reputation of the GGSW project was somewhat tarnished by its association with the 17 islands[28]. The confusion between the two projects became especially problematic as the 17 islands grew increasingly controversial. In 2015, while reclamation of some of the 17 islands was already underway, individuals within national ministries began to raise questions as to the legitimacy of the permits given to developers by DKI. In particular, the Indonesian Ministry for Maritime Affairs and Fisheries stated that they never gave their approval for the projects, maintaining that this was a necessary requirement to ensure the legality of the project. In addition to opposition from environmental groups, the 17 islands became even more contentious when a corruption scandal erupted; the director of *Agung Podomoro Land* was accused of bribing a city official in order to influence the bylaw governing land reclamation. A temporary moratorium on reclamation was subsequently issued in April 2016 by Rizal Ramli, Coordinating Minister for Maritime Affairs[29]. At least initially, these events posed a relatively serious threat to the GGSW project, not least because growing resistance among the public to the 17 islands also contributed to growing criticism and skepticism of the GGSW project. Additionally, if the 17 islands were prevented from going forward, this would likely render Jakarta much less attractive to investors. Since the financing strategy for the GGSW project is heavily dependent on private sector investment, the discontinuation of the 17 islands could undermine the financial feasibility of the GGSW project.

---

[28] It is important to note that this association is not only a matter of public perception. Some of the same consultancy firms that are involved in the GGSW project are also involved in the reclamation projects.

[29] Ramli was later replaced by Jokowi in a Cabinet reshuffle by Luhut Binsar Pandjaitan in July 2016, who lifted the moratorium on October 05, 2017.

However, it is in fact the very entanglement of the GGSW project with the 17 islands that has partially ensured its survival. While highly political, the construction of the 17 islands and sales of yet-to-be-built apartments have been underway for some time and property developers are poised to ensure their realization with the support of DKI Jakarta. In 2016, President Jokowi requested that BAPPENAS oversee the integrated planning of the 17 islands and GGSW project. The project of globalizing Dutch expertise and operationalizing the Dutch Delta Approach in Jakarta therefore continues to unfold in unforeseen and unanticipated ways. Additionally, by raising concerns and asking questions about the social and environmental impacts of the GGSW project, the Indonesian state has effectively secured additional funding and technical support from the Dutch and Korean governments for a second phase of the project (NCICD 2) in which further studies will be carried out, with the potential to provide high quality data and engineering analyses relating to Jakarta Bay. Intentionally or unintentionally, the Indonesian government has therefore been able to use disruptions to the project to its own productive ends.

It is also worth observing that though the GGSW project still only exists on paper and in the minds of bureaucrats, architects and engineering experts, Dutch consultants have already rendered the master plan mobile. For example, consultants have presented the master plan abroad at conferences where it is used to showcase Dutch expertise in delta management and climate change adaptation and to potentially secure future contracts:

> "… I often also present the project as an example of how you can make an integrated master plan for a city, but it is also maybe to show the Dutch expertise, but it is also maybe a bit of a test case, especially coming here [to Jakarta], how to implement it. Because of its complexity but also because of its ambitions." (Interview with consultant, December 14, 2015).

The master plan is thus enrolled by consultancy firms and the Dutch government in the project of globalizing Dutch expertise, doing the work of reifying the position of the Dutch as leading experts in water. Regardless of whether these consultants succeed or fail in realizing the GGSW project as envisioned in the master plan, Dutch expertise is evidently still in motion.

Conclusion

Illustrating how Dutch expertise is "[running] up against the landscape, but not quite as in its dreams" (Tsing, 2005, p. 65), this account of efforts to realize The Dutch Delta Approach in Jakarta has illuminated the important role of Indonesian state actors in both facilitating and disrupting this process, challenging narratives of globalizing Dutch expertise as inevitable. Regardless of its liminal status, the GGSW project continues to do work for the private and public sector in Indonesia and the Netherlands: it has unintentionally lent legitimacy to the plans of property developers to reclaim land from Jakarta Bay, provided momentum for DKI Jakarta's plans to revitalize North Jakarta; offered the potential to serve the Indonesian government's interests in attracting private capital to finance a long-term solution to flooding; and underscored the status of the Dutch as leading experts in water globally. In examining not only the disruptive but also the productive aspects of friction, this chapter has demonstrated how Dutch expertise remains in motion, albeit moving in unexpected or unanticipated directions. In doing so, I contribute to advancing our understandings of success and failure as intertwined, rather than dualistic categories (McCann & Ward, 2015).

While policy mobilities provides us with the vocabularies to analyze movement and flows, it is currently less equipped to examine moments of policy localization. It is for this aspect of my analysis that I have turned to scholarship in other disciplines. Curiously, the policy mobilities literature has

developed largely in isolation from a wide literature in other fields such as sociology and anthropology wherein scholars have critically examined the production and circulation of different forms of 'expert' knowledge. Policy mobilities therefore stands to benefit from engaging with these literatures, in order to develop more robust theoretical understandings of the "sticky materiality of practical encounters" (Tsing, 2005, p. 1) and the processes inherent to policy (im)mobilities that fall somewhere between success and failure.

Chapter Four. Insurgent Expertise: Tracing the Shifting Socio-Ecological Environmentalism of Forum Kampung Kota

Introduction

As urbanization has increasingly been framed as a global environmental issue, a range of actors including states, institutions and private actors have promoted powerful policy discourses of urban sustainability, urban resilience and smartness. These seemingly hegemonic discourses have commanded much academic attention. Geographers have played a crucial part in analyzing the imaginaries underpinning such discourses and tracing the transnational networks through which they travel. Scholarship in urban geography and urban political ecology has critically examined the mainstream imaginaries underpinning hegemonic discourses, such as urban sustainability (Escobar, 1996; Kaika & Swyngedouw, 2012) and urban resilience (Braun, 2014; Leitner, Sheppard, Webber & Colven, 2018; MacKinnon & Derickson, 2012). Yet, these discourses may not be a part of the everyday lived experiences of the majority of people living in urban environments (Lawhon, Pierce, & Bouwer, 2016), and comparatively less attention has been paid to the subaltern or counter-hegemonic imaginaries articulated by residents, activists, communities and organizations at the grassroots. Urban environmental imaginaries are understood as "conceptual framings and systems of meaning related to urban environments, including assumptions about the nature of the city and the nature of nature" (Gabriel, 2014, p. 39) that are both historically and geographically contingent (McGregor, 2004). Imaginaries play a central role in shaping contemporary urban political ecologies. As Kaika and Swyngedouw (2012, p. 26) argue: "Whether we depict nature as a thing 'out there', to be saved, or as a frontier to be conquered or ignored, it becomes imperative to ask questions about what visions of nature and what urban socio-environmental relations we wish to inhabit […] What issues and whose voices are being silenced and who or what has the right to speak and to be heard?"

Taking this provocation as its starting point, this chapter examines Jakarta's contested landscape of flood mitigation. The question of how to mitigate the social, ecological and economic impacts of flooding is a deeply political issue in Jakarta, and state interventions and policies are routinely subject to popular and academic scrutiny (Mohsin, 2014). In response to a perceived ramping-up of forced evictions in the name of flood mitigation in recent years, a localized network of academics, activists, architects, community activists and journalists has emerged: *Forum Kampung Kota (FKK)*. Kampung Kota, which translates as 'urban village', references the particular urban landscape that houses much of Indonesia's population. Kampungs are "mixed up districts" (Simone, 2014), comprising residential and commercial spaces that are characterized by mixed tenure arrangements and "practices of commoning that exceed capitalist social relations" (Leitner & Sheppard, 2018, p. 440). Urban kampungs physically resemble many informal settlements across the global South, with narrow streets, auto-constructed housing, and a high population density. *Forum Kampung Kota* (FKK) has mobilized against state-led evictions, challenged the appropriateness of state-led interventions (namely, the state's pursuit of an infrastructural fix to flooding) and articulated alternatives to riverbank evictions. In doing so, FKK articulates and promotes a "socio-ecological environmentalism" that advocates for a participatory approach to urban flood management and promotes an alternative vision of adaptation that envisions living with water, rather than expelling it from the city.

This chapter examines the discursive and material practices through which FKK's bring their socio-ecological environmentalism in being. Earlier narratives mobilized by FKK concentrated on the procedural and distributional injustices of the city's flood management plans; namely, the stigmatization of riverbank dwellers who have been held responsible for worsened flooding by encroaching on the rivers and made vulnerable to forced eviction. Invoking notions of social and

environmental justice, FKK has rescaled localized instances of injustice (evictions) by connecting these to broader processes of capital accumulation, dispossession, and neoliberalization. However, recognizing the relative ineffectiveness of such framings for serving their goal of social and environmental justice, FKK has increasingly focused its efforts on challenging the efficacy and legitimacy of the state's pursuit of technical solutions to flooding, capitalizing on the currency of expert knowledge. It has done so through a tactic of what I refer to as 'insurgent expertise' wherein actors strategically leverage expert knowledge (either their own, or the expertise of scientists and researchers), as well as claims to expert status, in order to appeal to the middle classes and the state, in an attempt to meet their own socio-environmental justice goals. FKK has tactically mobilized expertise and expert opinions less to illustrate the uneven impacts of flood management plans (though this is certainly a primary concern for FKK), and more to illustrate their ineffectiveness to alleviate flooding and to thus garner popular and political support for alternative strategies (which are discussed later in this chapter). Over time, this tactic has become central to FKK's campaigning efforts and organizing strategies, with less discursive emphasis placed on narratives of justice though social and environmental justice remain the long term strategic goal of the network.

In analyzing the environmentalism of FKK, I draw on semi-structured, in-depth interviews conducted between 2015 and 2017 with NGO staff, activists, reporters, community architects and academics; and a discourse analysis of documents, blog posts, and materials produced by FKK, as well as relevant news articles. I deploy a conceptual framework that draws on political ecology and postcolonial perspectives in urban studies. These bodies of scholarship are each rooted in a project of 'decentering' hegemonic perspectives on modes of knowledge production and broadening our understanding of ways of knowing the city and/or nature. While political ecology and feminist science studies have emphasized the situatedness of knowledge, which is embodied in particular subjectivities (Doshi, 2013;

Haraway, 1988, 1991; Karpouzoglou & Zimmer, 2016), postcolonial urbanism is a project of 'decentering' and 'provincializing' mainstream urban theory, which has long failed to take seriously southern sites of engagement from which to develop theory (Rademacher, 2011, 2015; Rademacher & Sivaramakrishnan, 2013; Robinson, 2006; Roy, 2009, 2015). Together, these frameworks provide a means to attend to the particular ways of knowing that are mobilized by the actors discussed in this chapter, while also critically reflecting on what this 'variety' of situated environmentalism means for our understandings of urban environmental politics more generally.

This chapter contributes to emerging literature in "situated urban political ecology" (Lawhon, Ernstson, & Silver 2014) that has called for greater attention to the geographical variations in the forms of environmental politics in different cities (Lawhon, 2013). I also contribute to enriching our understandings of the implications of adaptation projects for social and environmental justice. While a broad literature has documented issues of distributional justice relating to water infrastructure, particularly in cities of the global South (Arabindoo, 2017; Kooy & Bakker, 2008; Monstadt & Schramm, 2017; Ranganathan, 2015), comparatively less attention has been paid to the implications of adaptation projects intended to protect cities[30]. This chapter is organized as follows. In the first section, I begin by reviewing Environmental Justice (EJ) scholarship and the geographies of environmentalism literature. Much scholarship broadly distinguishes between northern and southern forms of environmentalism, though strong parallels between different strands of environmentalism across the north and south would appear to falsify this distinction. I then evaluate recent scholarship calling for greater attention to the role of place and relationality in shaping localized forms of environmentalism. In the second section, I describe the dominant state response to flooding, which I

---

[30] See Padawangi (2012) for a relevant exception and discussion of climate change planning in Jakarta.

broadly categorize as seeking an "infrastructural fix", and the associated political ecologies of forced eviction and resettlement practices wherein urban poor communities are disproportionately adversely affected by the state's flood mitigation projects, namely river normalization. The final section of the chapter turns to analyze how FKK has sought to critique state practices and promote alternatives to the displacement of riverbank settlers, and the shift in tactics from one which emphasizes social and environmental justice to one of 'insurgent expertise'.

The Geographies of Environmentalism

The Travels of Environmental Justice

Earlier research on environmental social movements distinguished between those movements that seek to conserve nature, and those that seek justice for communities with regards to their exposure to toxins and environmental hazards (Environmental Justice). Originating as a movement in the US following the civil rights movement and later adopted by governments and institutions (Holifield, 2004), environmental justice is defined as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies" (Bullard & Johnson 2000, p. 558). Emerging shortly after the Civil Rights era and shaped by a history of racism, the EJ literature mobilized race as a central analytical lens (United Church of Christ, 1987; Bullard, 1990, 1999; Pulido, 2000). However, this initial focus broadened to examine how "a system characterized by economic exploitation, racial oppression, and devaluation of human life and the natural environment" (Bullard & Johnson 2000, p. 573) places disproportionate environmental burden on marginalized communities, including low-income, immigrant, rural, and religious groups. While typically examined through localized case studies, EJ is understood as an inherently multi-scalar concept, highlighting the localized impacts of broader (often transnational or global) processes. The literature expanded beyond an initial

focus on distributional justice, taking up questions of procedural justice and documenting the systematic exclusion of communities by private corporations and the state from decisions that would impact the health of their bodies and communities (Cole & Foster, 2001). As the concept has matured, EJ has come to be generally understood as having three primary dimensions: recognition of political and cultural identity; distribution of environmental threats; and participation in decision-making and institutional structures (Schlosberg, 2004). These three dimensions are typically distilled into distributional justice and procedural justice, with the recognition of political/cultural identity falling into the latter.

Emerging as a grassroots movement, much of the literature examines how communities and social movements have operationalized EJ to discursively frame their struggles. Central to the EJ movement is an acknowledgement of the value of local, lay, or Indigenous forms of knowledge (Čapek, 1993). Lay knowledge is understood as a "locality-based way of knowing characterized as meanings or understandings people attach to a place that shape social actions and help them understand the world" (Grineski, 2009, p. 28), while 'expert' knowledge is typically presented as universal, disembodied and able to transcend localized contexts in ways that enable it to occupy a privileged position of power. There now exist numerous examples of communities mobilizing to investigate, and collect data regarding the environmental hazards they face (Cole & Foster, 2001; Grineski, 2009), engaging in 'citizen science' (Frickel, 2004) – or 'street science' Corburn (2005) in the urban context – and "popular epidemiology" (Brown & Mikkelson, 1990; Brown, 1992) by carrying out community-led health surveys (Schlosberg, 2007). One of the most notable examples in the US is the case of the Love Canal, New York wherein the Home Owners Association led by Lois Gibbs worked to document the health impacts of toxic waste dumping by Hooker Chemical. (Beck, 1979), leading to the Comprehensive Environmental Response, Compensation, and Liability Act (otherwise known as the Superfund Act)

of 1980. By participating in knowledge production, "community activists claim to speak credibly as experts in their own right" (Corburn, 2003, p. 422).

Studies have complicated the binary between "lay" and "expert" knowledge (Frickel, 2004), showing how these inform one another. For example, research has shown the effectiveness of alliances between communities and "experts" in advocating for EJ and emphasized the value of knowledge co-production. Writing on the EJ movement in Louisiana, Allen (2003) observes that "the strongest citizens' groups form alliances with well-organized national and multi-national environmental and social justice groups, enroll the support of activist and independent scientists and professional experts, and include members from diverse social classes and ethnic groups" (as cited in Allen, 2007, p. 109). To this end, Schlosberg (2007) calls for the "extension or reconstruction of expertise beyond modern scientific knowledge, to include traditional, cultural, and alternative forms of knowledge and representations of nature" (p. 198). Similarly, Corburn (2003) advocates for a model of co-production, in which "all publics are understood as potential contributors to all aspects of environmental-planning decisions because hard distinctions between expert and lay, scientific and political order, and facts and values are rejected" (p. 423). In contrast to forms of expert knowledge which have been institutionalized in environmental governance processes such as environmental impact assessments (Walker, 2010), in ways that perpetuate the exclusion of 'local' knowledge from environmental governance, efforts to co-produce knowledge contribute to efforts to achieve procedural justice and more democratic forms of environmental governance by including marginalized voices.

Regardless of widespread acknowledgement of the value of localized knowledge within the academic literature, planning professionals and policymakers generally assume that communities lack an understanding of the scientific or technical dimensions of environmental threats (Corburn, 2003). As

Grineski's (2006) observes in her ethnography of community-based participatory research efforts in Phoenix, Arizona, while participants *within* the study conceptualized lay and expert knowledge as co-produced, this binary is still upheld in US environmental governance and policymaking. Expert knowledge, therefore, is still regarded as a more legitimate and authoritative form of knowledge. The continued privileging of recognized forms of 'expertise' points to the limits of EJ movements that mobilize citizen science or participatory research to challenge the value assigned to 'lay' or 'local' knowledge by those in power. At the same time, however, it also suggests opportunities for communities to mobilize this particular form of knowledge strategically to meet their goals of EJ, for example by collaborating with universities and research institutes.

Environmental Justice: An Elastic Concept Stretched Too Far?

Despite the origins of EJ as community-based resistance against toxic and facility siting in the US (Bullard & Johnson, 2000) and notwithstanding the particularities of this context, scholars have examined how EJ has 'gone global', traveling to a range of geographical contexts outside of the US through a process of "fast conceptual transfer" (Debbané & Keil, 2004, p. 209). EJ has traveled "horizontally" as it has been "reproduced within the political and institutional cultures of different countries" (Walker, 2009), such as UK environmental policy and the South African Constitution. It has also traveled "vertically" (Walker, 2009) as it has been 'scaled up' to transnational/global and incorporated into mobilization against institutions such as the WTO and IMF, movements for food sovereignty and security, Indigenous rights in the global North and South (Schlosberg, 2004), and climate justice (Bond, 2011). Through detailed case studies, geographers have made valuable contributions to these debates by carefully documenting the "difference that different contexts make in shaping discourses and practices of environmental inequities" (Walker & Bulkeley, 2006, p. 658). Recognizing that EJ takes on a range of meanings across different geographical and institutional

contexts (Holifield, 2001; Schlosberg, 2004; Walker & Bulkeley, 2006), researchers have problematized the idea of a singular concept of EJ and highlighted the need for a kind of "critical pluralism" (Schlosberg, 2004, p. 532) in using the term. Holifield (2001) maintains that allowing for flexible and broadened understandings of these concepts is still a productive theoretical exercise. Echoing these sentiments, Debbané & Keil (2004) argue against a universalizing use of the term EJ. Taking South Africa and Canada as their case studies, they argue it is "difficult and at times counter-productive to 'apply' lessons and insights from the American case elsewhere" (Debbané & Keil, 2004, p. 212), Instead, they propose a 'relative' and 'scaled' understanding of EJ that is attentive to the ways in which it is "localized" in particular contexts. Similarly, Hillman (2006) calls for the development of "a rich, situated and ecologically grounded form of environmental justice" (p. 697) that accounts for the historical and situated dimensions of claims on the environment.

Scholarship has also explored the limitations of EJ and its "elasticity" (Walker & Bulkeley, 2006, p. 658). For example, scholars conducting research in the global South have pointed to questions left under-examined or unexplored by a framework developed in the global North. Land is a central example of this. As a critical resource in the global South, particularly in informal settlements, it has been insufficiently attended to by the EJ literature (Dixon & Ramutsindela, 2006). Geographers have also raised important questions about the utility of EJ frameworks that rely on a particular theorization of justice often developed in liberal democratic contexts. For example, Williams and Mawsdley (2005) explore the relevance of western frameworks of environmental justice for poorer countries, which they argue assume as universal a homogenous public sphere and the institutionalization of concepts of justice (particularly in terms of recognition). Examining the application of the EJ framework in postcolonial India, they draw attention to the dominance of the middle classes within the public sphere and a relatively weak state that is poorly equipped to realize or enforce environmental policies.

Williams and Mawsdley's (2005) call for a mode of environmental justice research that "fully contextualize[s] southern environmental actors rather than using them as ciphers and symbols of distant 'others'" (p. 662). Thus, observing the concerted efforts of South African scholars to broader northern frameworks of environmentalism (including Environmental Justice) in order to make them (more) relevant to their empirical observations, Lawhon (2013) suggests: "the need for such continuous modification suggests that these discourses [of ecological modernization and environmental justice] actually do not clearly explain what researchers see in practice" (p. 131).

Varieties of Environmentalism

From the perspective of nineteenth and twentieth century northern environmentalists, environmentalism was regarded exclusively as an endeavor of those who could 'afford' it (wealthy communities and wealthy nations), and of little interest to the poor and developing nations presumed to be preoccupied with more pressing concerns. The presence of environmentalism at both the societal and state level has historically been used as a yardstick against which to measure development (Guha & Martínez-Alier, 1998). The environmentalism presumed to be absent was imagined as northern: an environmentalism primarily concerned with the conservation of nature, as exemplified in organizations such as the Sierra Club and Friends of the Earth. The suggestion that poor people and nations do not engage in environmentalism, however, rests on a narrow understanding of what constitutes environmentalism and overlooks the presence of other forms of southern environmentalism that may look radically different from the environmentalism of the global North. The "environmentalism of the poor" (Guha & Martínez-Alier, 1998) refers to cases where communities protest the destruction of their environment in order to protect the wellbeing and survival of their communities. By demonstrating how poor communities and poor countries mobilize around the protection of the environment, this framework challenges Malthusian-esque discourses

that have typically portrayed poor people as driving environmental degradation (Blaikie & Brookfield, 1987; Gray & Moseley, 2005). Drawing parallels with EJ movements in the global North, yet distinctly 'southern' in its origins and formulation, the environmentalism of the poor has come to constitute a popular framework for understanding environmental movements in the global South that center around poverty and livelihoods. This literature has largely focused on rural and Indigenous movements challenging the impacts of resource extraction, such as timber and oil production. Notable examples are the Chipko movement against deforestation, the Ogoni people's struggle against Shell in Nigeria, and anti-dam mobilization in India (Martínez-Alier, 1997; Nixon, 2011). Guha & Martínez-Alier, (1998) provide an insightful comparative analysis of the various forms of environmentalism at work in a diverse range of contexts (including environmental justice, ecological debt, ecological footprint, Indigenous environmentalism, and social ecofeminism), with the aim of decentering northern frameworks. Anticipating more recent comparative scholarship in urban studies (Roy, 2003), they engage in comparison in order to upend the application of northern theory to southern contexts, posing southern questions of the global north: "We are interested, certainly, in what neo-Wordsworths might say or do in the Tropics, but also in what old Gandhians might say and do in the Temperate Zone" (Guha & Martínez-Alier, 1998, p. xxiii). While making a valuable contribution to broadening our understandings of the range of different forms of environmentalism at a range of scales, their analysis is still primarily framed using the binary categorizations of rich/poor, north/south, materialist/non-materialist in ways that restricts comparison.

Yet, research charting the emergence of new forms of environmentalism sheds doubt on the utility of a north/south, rich/poor dualism. Research emerging from empirical work conducted in Indian cities has documented a trend of "bourgeois environmentalism": a term originally coined by Amita Baviskar (2003) to refer to a form of environmentalism led by the emergent middle class, based on the physical

appearance of the environment and its adherence to aesthetic norms (also see Gandy, 2008; Doshi, 2013). The state and middle classes have mobilized this form of environmentalism in order to legitimize large-scale evictions and the displacement of the urban poor, to facilitate urban redevelopment projects as part of a broader project of achieving a 'world class aesthetic' (Ghertner, 2015). Bourgeois environmentalism embeds ideals of environmental improvement, reflecting particular moral geographies and ideas about (un)belonging and propriety, which render low-income settlements and communities as out of place and ripe for displacement. Abidin Kusno (2014) also mobilizes this concept in his analysis of the "green turn" in urban governance in Jakarta. With its emphasis on the aesthetics of the environment, bourgeois environmentalism certainly echoes the northern environmentalism which is in pursuit of the preservation of nature often at the cost of the lives and livelihoods of communities (see Spence, 1999). Indeed, both bourgeois environmentalism and northern environmentalism have led to large-scale displacement of people deemed 'out of place'. These parallels suggest a need to further interrogate situated, localized forms of environmentalism that resist the dualistic categories of north and south.

Situated Environmentalisms, Situated Knowledge

Informed by critiques of mainstream global urbanism (Sheppard, Leitner, & Maringanti, 2013; Sheppard et al., 2015), recent scholarship has paid closer attention to the geographically and historically specific forms of environmentalism in particular sites and called for greater attention to finer scales of analysis in order to "understand the different, distinctive local environmental imaginaries in different places" (Lawhon, Pierce, & Bouwer, 2016, p. 7). This research builds on feminist and postcolonial perspectives on theory and knowledge production that aim to decenter particular forms of privileged knowledge and attend to alternative 'ways of knowing' the urban and urban nature. For example, Rice and Burke (2017) examine the place-based forms of environmental resistance of rural, conservative

communities in Southern Appalachia. By attending to the alternative imaginaries and environmental narratives mobilized by "people who are differently rooted in place and whose views of nature, community, and politics differ greatly" (p. 3), they call for the international construction of what Nagar and Geiger (2007) call meaningful "situated solidarities". In contrast to Harvey's (1996) arguments that locally embedded social movements are inherently limited by their "militant particularism" and failure to 'scale up' to broader critiques of capitalism, Rice and Burke (2017) argue that "any form of environmental politics that asserts totalizing views of place, nature, or community is itself hegemonic, exclusive, and dismissive, and therefore less likely to command the broad-based support necessary for transformative environmental politics" (p. 3). From this perspective, an effort to engage with finer scales of analysis lends itself to a broader political project of envisioning alternative futures.

Emphasizing the relationality of environmental politics, Lawhon (2013) makes a case for theorizing environmentalisms as 'situated' and 'networked' in ways that resist recreating the problematic categories of North and South. From this perspective, environmentalisms are understood to be both locally embedded, and the product of "intra- and international networked engagements" between people, places and discourses (Lawhon, 2013, p. 130). Thinking about "situated" (rather than southern) environmentalisms encourages us to challenge the relegation of north and south to distinct theoretical spheres, and to engage with the south not as a location per se, but as a theoretical vantage point: "An effort to develop theory from the South would focus not on how a particular environmentalism differs from that of the North, but first seek to explicate what environmentalism means, or a vision of sustainable future in place" (Lawhon, 2013, p. 130). Rather than simply identifying points of divergence, this is a project of giving a platform to those articulating alternative visions of the future that draw on and connect to the socio-spatial positionality of local actors. It is to this project that this chapter now turns.

The Contentious Politics of Flood Mitigation

In Pursuit of An Infrastructural Fix

Presently, the provincial and national goverments are undertaking two primary large-scale structural solutions to flooding in Jakarta. To address flooding from the sea, the Indonesian government has partnered with a consortium of Dutch firms with financial support from the Government of the Netherlands to design the GGSW project, a coastal defense project consisting of pumps, dikes and land reclamation. The project has been controversial among civil society groups for its perceived privileging of private property development at the expense of urban poor communities who would likely be displaced by its implementation. In order to address flooding caused by high precipitation events, DKI Jakarta is also undertaking a project of river normalization (*normalisasi)*. This includes both the Jakarta Urgent Flood Mitigation Project and the Ciliwung River Normalization project, carried out by the Ciliwung-Cisadane River Basin Authority (BBWSCC) of the Ministry of Public Works and Public Housing. The Jakarta Urgent Flood Mitigation Project (JUFMP) is a World Bank funded initiative initiated under Fauzi Bowo in 2010 to dredge, rehabilitate and improve the flow capacity of selected key floodways, canals and retention basins thereby alleviating flooding. The project relies on returning the city's canals to their original capacity according to Dutch designs. The Ciliwung River Normalization (CRN) project involves the deepening, widening, and dredging of 22 km of the river from Manggarai flood gate (see Figure 5) to Simatupang in order to increase the capacity from 200m3/s to 572m3/s.
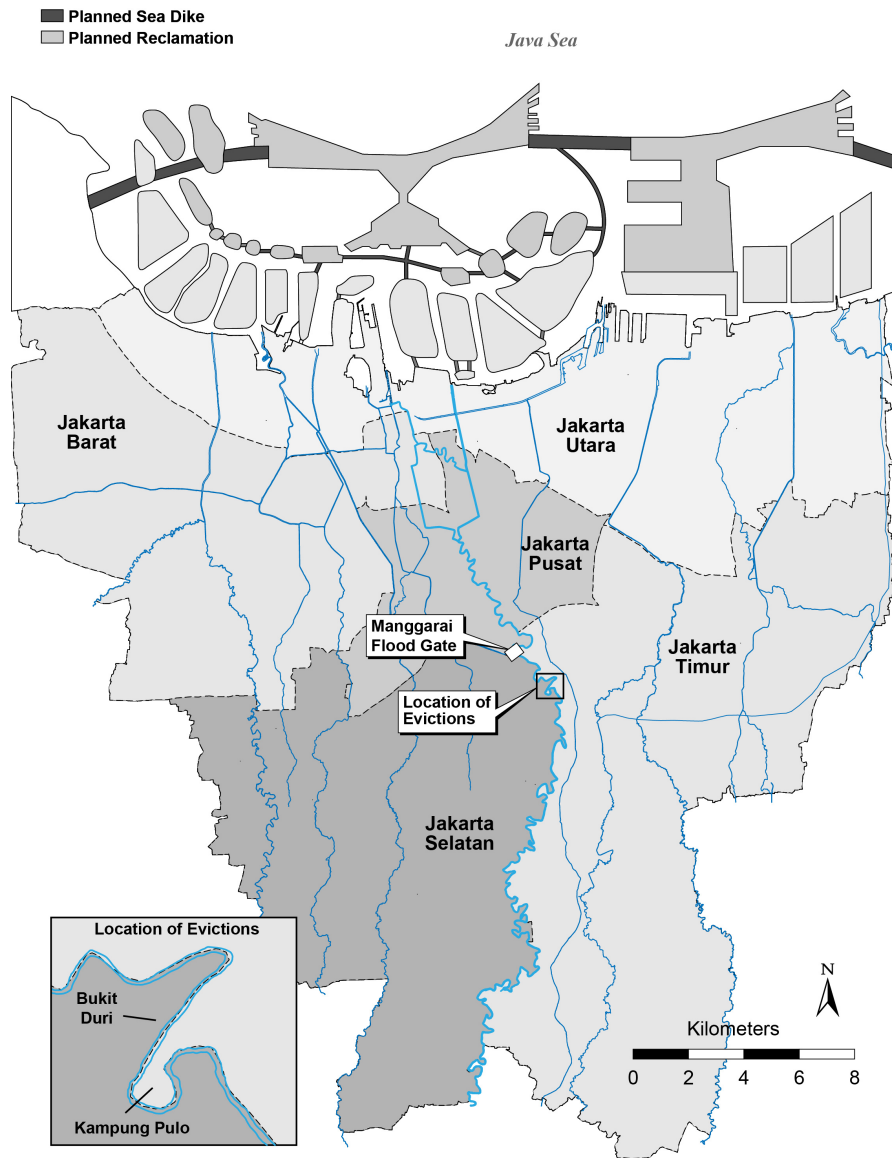
Figure 5. Map of eviction locations.

The Ciliwung River runs approximately 119 km from the *puncak*[31] region in the south to Jakarta Bay. In addition to constructing concrete sheet piles along the edges of the river, a process referred to as *betonisasi*[32] (concretization), BBWSCC has also constructed concrete 'inspection roads' and high dikes

---

[31] *Puncak* literally translates as 'peak' or 'top' and refers to the mountainous region south of Bogor.

[32] *Beton* is the Indonesian word for concrete.

or walls between the river and neighboring settlements. With an estimated 350,000 people living on the banks of the Ciliwung River (Padawangi et al., 2016), the CRN project has been especially controversial for the evictions its realization has entailed, in particular the high-profile evictions of Kampung Pulo in August 2015 and Bukit Duri in September 2016. Nonetheless, river normalization continues to be bolstered by the expertise and technical support provided by Dutch consultancy firms. These projects reflect the state's more general approach to flood mitigation, which emphasizes technical and structural solutions that rely heavily on engineering such as sea walls, polder systems, canals and floodgates, intended to control and channel floodwaters away and out of the city.

Contemporary state-led interventions into flooding are situated within a broader historical context of several centuries of engineering interventions, beginning with seventeenth century Dutch settlement of Jakarta, then known as Batavia, and the emphasis on technical solutions and structural measures can be traced back to the Dutch colonial era (Padawangi & Douglass, 2015). The city's first canal system, reminiscent of those in the Netherlands, was constructed in 1619. The Dutch influence continued post-Independence: some projects planned by the Dutch have only been completed in recent decades. For example, the *Kanal Banjir Timur* (Eastern Flood Canal) was proposed by the Dutch in the 1917 'Van Breen plan', but not realized until much later, becoming functional in 2010 (Ward, Pauw, van Buuren, and Marfai, 2013, p. 521). The master plan for drainage and flood control developed by the Indonesian state in 1965 and revised in 1973 was "essentially a modification of the Van Breen Plan" (Ward et al., 2013, p. 521). However, due to the availability of capital through institutions such as the World Bank, recent flood mitigation projects "are now greater in scale than those of the colonial period" (Padawangi et al., 2016, p. 150). International consultants play a crucial role in legitimizing these projects.

Among experts and state actors, the complex causes (land use change, increased river discharge, reduced river capacity, urbanization, groundwater extraction) are generally well known. As such, there is growing understanding within government ministries of the need for an integrated approach to water management. To date, however, water governance in Jakarta continues to be characterized by a lack of integration and coordination between sectors and institutions at the level of provincial and national government. This has contributed to a project-based mentality, wherein projects are typically designed to address a singular, particular issue (such as flooding from the sea or water supply). As a result, in a somewhat contradictory fashion, river normalization projects intended to move surplus waters out of the city are carried out alongside efforts to address the city's chronic surface water shortage. Due to the varying causes of each particular flood event, it is difficult to attribute reduced flooding to the success of any particular project, as a member of staff from the Jakarta Disaster Management Agency explained: "[If there is not flooding] we as [the] government, we will campaign that 'this is all because of our structural program' but unfortunately we don't have the same rain to test that" (interview, August 19, 2016). Nonetheless, river normalization in particular has been championed by the state as effectively reducing the frequency and duration of Jakarta's flooding.

The Political Ecologies of Eviction and Resettlement

Though Jakarta has a long history of forced evictions, it is only in recent decades that these have been carried out in the name of flood mitigation. The nature of such evictions has changed under each successive governor. During his campaign for Governor of Jakarta, Joko Widodo "Jokowi" pledged to "relocate rather than evict" (*gusur bukan geser)* kampung residents. Jokowi became known for his engagement in 'street democracy' (Cochrane, 2013), visiting residents of kampungs and walking around their neighborhoods in a manner that distinguished him from his predecessors. Together with his deputy Basuki "Ahok" Tjahaja Purnama, he signed a one-page political contract (*kontrak politik*)

with JRMK (*Jaringan Rakyat Miskin Kota*/Urban Poor Network), *Sebaja* (Jakarta *Becak* Drivers Union), *Juang Perempuan* (KJP) Community, and the Urban Poor Consortium (UPC) agreeing to involve members of urban poor communities in spatial planning, local budgeting and development; to legalize kampungs and provide ownership certificates to those who had resided on land for more than twenty years; and to protect informal workers such as street vendors (Belarminus, 2016; Savirani & Aspinall, 2017). Once elected as Governor of Jakarta (2012 – 2014), Jowoki deployed his trademark negotiating style to achieve two major relocation projects: moving informal traders off the streets in Tanah Abang and into a nearby closed market; and relocating some 7,000 families from Waduk Pluit (a reservoir in North Jakarta) as part of the city's dredging project to reduce flooding. He also made good on his promise to relocate residents, overseeing the construction of *Kampung Deret*, a kampung renovation program that gave ownership rights to residents.

With Jokowi winning the presidential election in 2014, Ahok assumed the role of Governor of Jakarta (2014 – 2017). Ahok adopted a more top-down approach to governance than his predecessor and deployed a particularly aggressive eviction policy. The Jakarta Legal Aid Institute (*Lembaga Bantuan Hukum Jakarta*/LBHJ) reports that Ahok illegally enrolled the services of the military to carry out evictions (interview with public lawyer from LBHJ. August 30, 2016). Notable evictions carried out during his tenure include Kampung Pulo (August 2015) and Bukit Duri (September 2016), both of which were part of the Ciliwung River Normalization project. During 2015, JBHJ reported that 113 evictions were carried out, 48 of which related to flood mitigation projects[33] (LBHJ, 2016). Plans for the GGSW project, too, look poised to increase the threat of evictions for coastal communities to

---

[33] LBHJ has been compiling data on evictions since 2015 in an effort to systematically document the impacts on communities and strengthen its body of evidence in representing their clients

accommodate the construction of a new sea wall and extensive reclamation. Evictions have also been increasingly driven by the city's efforts to acquire green space: currently Jakarta has approximately 9.3% green space (Rukmana, 2015), but the Regional Spatial Plan for Jakarta 2030 mandates 30% (DKI Jakarta, 2012). Ahok's efforts to acquire green space earned him middle class approval as a politician who appeared to cut through Indonesia's notorious bureaucracy and 'gets things done'. As a journalist from the Jakarta Post reflected: "[The middle class] really love green space. That's why, I think, most of them support Ahok" (interview, August 25, 2017).

Ahok used the river normalization projects to justify the evictions of thousands of residents from their settlements along the banks of the city's rivers and reservoirs. Evictions were arguably a defining aspect of his governorship. While academic research and assessments by consultancy firms have documented a multitude of factors leading to worsened flooding, Ahok promoted a powerful narrative blaming "illegal residences" for worsening flooding, arguing that "the rivers' surroundings cannot properly absorb the overflowing water" (Wardhani, 2014). According to this narrative, residents are said to be squatting illegally on state land, encroaching on the river and dumping their garbage in the river, thereby reducing the capacity of the rivers. By holding these communities 'morally responsible' (van Voorst & Hellman, 2015) for worsened flooding, and presenting them as an obstacle to flood mitigation and the environmental security of the city, this narrative renders their claims to land both legally and 'environmentally illegitimate' (Rademacher, 2009). The removal of these communities is thus framed as being both the logical solution and in the public interest.

With Jokowi's *kampung deret* program encountering difficulties, particularly after the Supreme Audit Agency failed to recommend the project's continuation due to many kampungs occupying state land (Savirani & Saidi, 2017), Ahok dropped the program from the city budget in 2015 (Elyda & Wardhani,

2015). Ahok also rejected proposals from Jakarta-based NGOs, including *Ciliwung Merdeka*, for community-led, in-situ upgrading projects (designs for which are discussed later in this chapter). Instead, Ahok oversaw a return to the use of *rusunawa* to resettle evicted residents: low-cost, rental apartments with two-year contracts. Resembling the public housing units built in North America and Europe in the 1960s that were subsequently demolished towards the end of the twentieth century, *rusunawa* are typically located outside the original site of the community on the city's peripheries (the exception being the *rusunawa* constructed in Jatinegara Barat, East Jakarta for evicted residents of Kampung Pulo). Though also constructed under previous governors Sutiyoso and Fauzi Bowo, *rusunawa* have become especially associated with Ahok's administration. This effort has been celebrated by the middle class, bolstered by claims that resettlement to "proper" housing (Wijaya, 2017) will improve the quality of life of residents.

As his reputation for forced evictions grew, Ahok's popularity with urban poor communities and activists waned. Urban poor activists argued that his eviction and resettlement policies increased the vulnerability of the city's poorest and most marginalized residents. The return to *rusunawa* was also heavily criticized as an insufficient and inappropriate housing solution for evicted residents, not least because only those with Jakarta ID cards are guaranteed a right to replacement housing. Residents that do secure an apartment face the new and often debilitating financial burden of monthly rent. Further, Jakarta currently faces an enormous housing shortage that to date the city has been unable to address, and the number of *rusunawa* units available is outstripped by the numbers of evicted families. The construction of apartment buildings for the middle classes also rapidly outpaces the construction of affordable housing such that "the total number of rusunawa public housing developments in Jakarta is 24, representing fewer than 10 percent of all apartments" (Savirani, 2017). While there exists a '1:2:3' policy dictating that each development maintains this ratio for high-, middle-, and low-income units,

property developers often find ways to circumvent this regulation, which is neither effectively monitored nor enforced (Rolnik, 2013).

Ahok's waning popularity was reflected at the polls. Despite having the backing of Jokowi's ruling party *Partai Demokrasi Indonesia Perjuangan* (the Indonesian Democratic Party of Struggle), Ahok and deputy nominee Djarot Saiful Hidayat lost the 2017 election to Anies Rasyid Baswedan-Sandiaga Uno, backed by *Gerindra* (the Great Indonesia Movement Party) and *Partai Keadilan Sejahtera* (the Prosperous Justice Party). While many argued that Ahok lost his campaign due to accusations of blasphemy after he quoted the Qur'an, Rita Padawangi (2017) argues that such explanations of religious fundamentalism overlook the important role of the urban poor. While Ahok's rivals focused their campaigning efforts on "issues of urban planning and management, as well as social welfare" (Savirani & Aspinall 2017, p. 19), Padawangi (2017) among others (Walden 2017, March 28; 2017, April 22), argues that Ahok's evictions policy (as well as his stanch support for the controversial reclamation projects) lost him votes among these groups. This reflects that "the poor residents of Jakarta's urban *kampung* themselves constitute a major vote bank whose support can be the difference between electoral success and failure" (Savirani & Aspinall 2017, p. 12), signaling the important role of the urban poor in Jakarta as political actors.

The Socio-Ecological Environmentalism of Forum Kampung Kota

In August 2015, Ahok oversaw the high profile and contentious eviction of residents from Kampung Pulo to facilitate the Ciliwung River Normalization project. Though considered an illegal settlement by the city government, Kampung Pulo was widely considered to be a historic neighborhood, home to Indigenous *Betawi* residents. The eviction resulted in bloody clashes between residents and the police, images of which were shared online, and published in the news not only Jakarta but also

internationally. These events stimulated discussion among a group of activists, academics and practitioners from across (and beyond) Jakarta (including Bandung and Surabaya) concerned with a range of issues relating to social and environmental justice, but especially the nature and harmful effects of evictions. These discussions were facilitated by the use of the messenger service *Whatsapp*, through which members of the group were able to share information quickly and widely. One of the outcomes of these discussions was the establishment of *Forum Kampung Kota*: a loose network of activists, community organizers, academics, researchers, and professional practitioners including architects and engineers, concerned with the welfare of *kampung* residents. In addition to individual professionals, *Forum Kampung Kota* (hereafter FKK) also connects NGOs and community organizations including *Arsitek Komunitas* (Community Architects), *Architects San Frontiers-Indonesia*, the Ciliwung Institute, community organization *Ciliwung Merdeka*[34], LBHJ (*Lembaga Bantuan Hukum Jakarta*/Jakarta Legal Aid Institute), the Rujak Center for Urban Studies, and the Urban Poor Consortium (UPC). FKK continues to discuss via Whatsapp to create a "sharing space" (interview with community architect, *Ciliwung Merdeka* October 04, 2015), build networks, exchange information (such as their knowledge of laws and regulations), share contacts, and discuss alternative solutions. Though FKK emerges from Jakarta, as the name suggests, the network is imagined as connecting kampungs across different cities.

FKK builds on a longstanding network of activists in Indonesia that predates the end of Suharto's New Order and the beginning of the *Reformasi* period. As one activist described: "This is an old network that was always there. In Indonesia…people who work for NGO, or for disaster mitigation, or for housing…they're all more or else the same people" (interview with architect and academic.

---

[34] *Merdeka* translates as freedom.

August 23, 2017). FKK describes itself as a cross-disciplinary and intergenerational movement concerned with "the principles of equality, democratic participation, independence, non-sectarianism, and prioritizing its movement as facilitating the empowerment of kampung residents"[35]. The FKK operates much like a grassroots support organization (Frickel, 2004), albeit in a less formalized manner, helping to organize residents, channel campaigning efforts, and collect or mobilize data. The network compliments and bolsters existing efforts and programs undertake by more formal groups and networks, including community organization *Ciliwung Merdeka*, and the Urban Poor Consortium (UPC) and the JRMK (*Jaringan Rakyat Miskin Kota*/Urban Poor Network). FKK circulate their form of environmentalism through a range of different spaces and networks including universities, *kampungs*, symposiums and workshops, as well as online spaces including a series of blog posts on Medium, as well as Twitter and Facebook.

Social and Environmental justice

Since 2015, FKK has engaged in a mode of contentious politics: "concerted, counter-hegemonic social and political action, in which differently positioned participants come together to challenge dominant systems of authority, in order to promote and enact alternative imaginaries" (Leitner, Sheppard, & Sziarto, 2008, p. 157). In critiquing state practices and promoting alternatives (discussed below), FKK initially emphasized the procedural and distributional injustices of the city's flood management strategies; namely, the stigmatization of riverbank dwellers, and the impacts of forced evictions and resettlement. FFK has campaigned on behalf of kampung residents, critiquing the city's eviction policy

---

[35] Translated from: *prinsip kesetaraan, demokratis-partisipatif, tetap independen, non-sektarian, serta mengutamakan gerakannya sebagai fasilitator pemberdayaan warga kampung di perkotaan.* (Forum Kampung Kota n.d.).

and flood management plans and drawing attention to issues of distributional and procedural justice. Members of FKK have sought to counter a pervasive perception among Jakarta's middle classes that the provision of housing to evicted communities is an effective solution and that "you have to be happy if you're relocated to low cost apartment" (interview with journalist from Jakarta Post. August 25, 2017). They have done so by campaigning to raise awareness of the harmful impacts of the city's eviction and resettlement practices on urban poor and riverbank communities, arguing that these practices increase the vulnerability of those already most at risk from the impacts of flooding. For example, research by LBHJ has shown that evictions lead to the loss of social capital, livelihoods and ways of life, making communities more vulnerable and life more economically precarious, with many residents in a survey conducted by LBHJ reporting lower income after their eviction due to the location of the *rusunawa* at an increased distance from their place of work (interview with public lawyer from LBHJ. August 30, 2016). FKK also emphasizes that eviction and resettlement processes contribute to the loss of the 'survival system' and social fabric of *kampungs*, which cannot be replicated in *rusunawa*. FKK have sought to emphasize the value of *kampungs*, which are distinguished from *rusunawa* because they combine different commercial and residential spaces. The *kampung* is therefore not only a home but also the source of people's livelihoods. Furthermore, for those who previously lived on land over which they had de facto ownership, the financial burden of rent is a new overhead few can afford meaning that the allocation of an apartment unit within the *rusunawa* "[is] not really a [sic] compensation" (interview with public lawyer from LBHJ. August 30, 2016). For these reasons, members of FKK argue that, far from constituting an adequate solution, the unaffordability of the replacement housing often forces residents to leave, resulting in their 're-eviction' (interview with community architect from *Ciliwung Merdeka*, October 04, 2015). FKK thus argues that "the impact of evictions would be more politically, economically, socially and culturally dangerous than the environmental technical problems that seem to be overcome by eviction and relocation" (Konferensi

100

akademisi dan praktisi pecinta Kampung Kota, 2015). That is, FKK argues that the costs of evictions for urban poor communities, and for Jakarta more broadly, outstrip the challenges presented by flooding.

FKK "invoke[s] geographical scale(s) to negotiate the meaning and extent of environmental injustice" (Kurtz 2003: 888) in relation to forced evictions and resettlement carried out in the name of flood mitigation. FKK mobilizes a discourse that explicitly links practices of evictions to the city's pursuit of a capitalist development agenda that promotes economic growth made possible at the expense of the urban poor. In doing so, FKK scales up the unequal impacts of city's normalization projects and eviction policy, situating these within a broader context of "the onslaught of the development of commercial areas" and the orientation of city planning in Jakarta towards "the sake of capital turnover, for the surplus of capital accumulation" (Forum Kampung Kota 2016). As one member of FKK explained, referencing the use of evictions to make way for more capital-intensive projects: "I don't call it *normalisasi* (river normalization)… revitalization, I think it's more appropriate" (interview with architect and academic. August 23, 2017). FKK therefore rescales the injustices experienced by forcibly evicted residents of kampung and riverbank settlements, framing them within a broader context of practices and processes of uneven urban development.

Ecological Reasoning and Insurgent Expertise

However, acknowledging the relative ineffectiveness of justice framings for reasons discussed below, FKK has increasingly appealed to "ecological reasoning" (Doshi, 2013, p. 238): using environmental arguments to challenge the legitimacy of the state's pursuit of technical solutions to flooding. FKK has done so through a tactic of "insurgent expertise" wherein actors strategically leverage expert knowledge (either their own, or the expertise of scientists and researchers), as well as claims to expert

status, in order to appeal to the middle classes and the state, in an attempt to meet their socio-environmental justice goals. In theorizing this tactic, I draw on Holston's (2008) concept of "insurgent citizenship'. Holston describes insurgence as "a process that is an acting counter, a counterpolitics, that destabilizes the present and renders it fragile, defamiliarizing the coherence with which it usually presents itself" (p. 34). FKK seeks to render the dominant state approach to flood mitigation 'fragile' and open up space for debate and negotiation by tactically mobilizing expertise and expert opinions in order to illustrate the ineffectiveness of river normalization, and to garner popular and political support for alternative strategies. While perhaps not necessarily 'insurgent' in the western tradition of democracy, as William and Mawsdley (2006) observe: "[democratic] norms may be significantly contested or weak" (p. 661) in different geographical contexts. I envision FFK's action as insurgent because of their goals of participatory governance and the inclusion of the urban poor, rather than the means by which they aim to achieve this.

The shift towards a tactic of 'insurgent expertise' has occurred as FKK acknowledged the ineffectiveness of justice/human rights framings. While the city administration was less sympathetic to narratives of social justice, critiques of the city's planning practices gained traction particularly following the eviction of Kampung Pulo, as one informant reflected:

> "Academics speaking out, 'hey wait a second, this isn't really a solution to flooding'…
> I think [Ahok] didn't anticipate that. I think he anticipated only... activists about human
> justice, which no one listens to, but it moved more into critique about planning."
> (interview with community architect from *Ciliwung Merdeka,* October 04, 2015).

For example, members of FKK have sought to draw attention to practices of elite informality (Roy, 2005) wherein shopping malls and apartment buildings have been allowed to flout spatial planning

laws in ways that undermine the city's flood mitigation efforts. This shift toward appeals to ecological reasoning is important because it signals an attempt to challenge the state on its own terms and turn the state's own mobilization of expertise on its head, thus making critiques harder to ignore. This tactic has become central to FKK's campaigning efforts and organizing strategies, with less discursive emphasis placed on narratives of justice[36]. This illustrates the limitations of appealing to notions of justice for social movements in contexts where these arguments have little popular or political traction, and the institutions that might enforce notions of distributional or procedural justice are less developed.

In order to serve their long term strategic goal of social and environmental justice, FKK has engaged in a tactic of 'insurgent expertise' in order to undermine the environmental legitimacy of state interventions, arguing that these will not in fact reduce, and may even exacerbate the impacts of flooding. One of the first ways FKK operationalized this tactic was by strategically mobilizing their own expert status as a collective of internationally-trained academics and practitioners, to gain a seat at the table and credibility in the eyes of the state and the middle class. For example, in order to secure a meeting with the governor in the hopes of halting the eviction of residents of Kampung Pulo, FKK authored a joint statement in 2015 to the governor urging him to reconsider his plans to evict residents, and to consider their proposals for in-situ upgrading. FKK consciously included the full titles, degrees and professional qualifications of all 56 individuals who signed it, (many of which were earned at universities in Europe and the US) in order to present themselves as experts with a right to speak, rather than as laypeople, in an appeal to the state's privileging of expertise. Ultimately, these tactics were largely unsuccessful with Ahok. While initially meeting with a number of community organizers

---

[36] Additionally, in 2016 Ahok publicly dismissed claims by the National Commission on Human Rights (Komnas HAM) that his eviction policy violated human rights (Jakarta Post 2016).

and activists, he proceeded to unexpectedly shut down any dialogue between the city administration and the community and the activists. Nonetheless, the decision by FKK members to present themselves in this way as a means to lend legitimacy to proposals for in-situ upgrading illustrates the enduring the currency of 'expertise' in Jakarta.

Another way in which FKK has operationalized a tactic of 'insurgent expertise' is by mobilizing expert research and opinion to support their critiques of state practices and promotion of alternatives. In 2017, shortly after Anies took office, FKK wrote an open letter encouraging the new governor to fulfill his campaign pledges to stop river dredging (Anya, 2017). In the letter, they emphasized that research has shown the ineffectiveness of concretization (*betonisasi*). In comparison to their open statement to Ahok in 2015, the letter makes little reference to the issue for evictions, instead aiming to undermine the legitimacy and credibility Jakarta's flood management projects. FKK has also mobilized research and environmental arguments to challenge dominant framings of flooding that hold riverbank settlements responsible for worsened flooding and to advance a holistic understanding of the multi-scalar connections between social and ecological processes that contribute to flooding. FKK charges that city policies "do not cope with the flooding of Jakarta as a whole" (Konferensi akademisi dan praktisi pecinta Kampung Kota, 2015) and do not "solve the root problem" (Architect and Director of Rujak) of flooding. In contrast, FKK promotes a holistic model of water management that acknowledges the "ecological connections" (Furlong & Kooy, 2017, p. 894) between flood, ground, and surface water. For example, FKK emphasizes the role of private development in ecologically sensitive areas of the city, triggering the conversion of green space into shopping malls and apartment buildings. Members of FKK also emphasize the need to address the impacts of land subsidence, which is driven by groundwater extraction in a city where less than half are connected to piped water. Though land subsidence is now widely recognized as a crucial challenge for Jakarta that

has garnered the city international attention, little has been done by the state to effectively curb groundwater extraction. Despite decades of research by scientists in Indonesia, it was only in 1998 that efforts to regulate groundwater were first introduced, with little effect[37] (Furlong & Kooy, 2017). FKK thus effectively rescales understandings of flooding, weaving a more complex and holistic narrative of flooding that incorporates both the up- and downstream areas, and a broader range of actors. In emphasizing the relationship between flooding, water supply and land subsidence, FKK and its members articulate the need for an integrated mode of water management that addresses the root causes behind the increased severity and intensity of flooding.

Further, FKK also has mobilized informal university-community partnerships in order to undermine the authority of the state's project-based approach to flooding by emphasizing the unsustainability and ineffectiveness of locally-scaled, concrete heavy interventions, particularly river normalization. In particular, *Ciliwung Merdeka* has undertaken a number of activities to this end. For example, following the publication of an article by Indonesian language newspaper *Kompas* that presented the government's perspective of "normalization as the solution" (*normalisasi jadi solusi banjir*"), *Ciliwung Merdeka* organized a meeting between *Kompas* and a researcher from the National University of Singapore. The aim was to challenge the dominant state view on normalization. In another instance, *Ciliwung Merdeka* brought together a hydrologist and staff from BBWSCC (the Ciliwung-Cisadane River Basin Authority) in order to illustrate and discuss the worsened impacts of normalization on flooding. As one community architect described:

---

[37] Though a tax was introduced, groundwater remained far cheaper than piped water. In addition, public buildings were exempt from this tax. Unregistered extraction and under-reporting of groundwater extraction have also been identified as major issues (Furlong & Kooy, 2018)

"He showed that the sediment is actually bigger if you use concrete because… it flows

faster. And if you make [the river] wider… you still have the same volume of sediment,

so your capacity is not… as greater as you anticipate. And, of course, in the designs by

the government… there's no data about sedimentation". (Interview with community

architect from *Ciliwung Merdeka.* October 04, 2015.)

By engaging in practices of "alternative knowledge production" (Leitner, Sheppard & Peck 2007, p.

344) and circulation, FKK intends to undermine the state's appeals to environmental logics to justify

its evictions.

Co-producing alternative futures

In addition to challenging state approaches to flooding, members of FKK have sought to collaborate

with urban poor communities to co-produce an 'alternative imaginary' of urban adaptation in which

Jakarta's residents are envisioned as living with waters, referred to as *kampung susun* (Figure 6).

Imagined as being designed in collaboration between communities, community organizations and

architects, these in-situ upgrading projects embed several principles including cultivating a relationship

between residents and the river, fostering a sense of environmental stewardship and responsibility,

and incorporating the elements of *kampung* life that residents value, such as integrated social and

economic spaces. The *kampung susun* design reflects a critique of the dominant binary understanding

of human-nature relations the state interventions promote, articulating instead an alternative vision of

the residents' relationship with water. The design is imagined as part of a floodable landscape: rather

than keeping the water out throughout the wet season by relying on floodgates, dykes and concrete,

the designs include lower floors that can accommodate floodwaters without displacing residents. FKK

thus mobilizes an alternative urban environmental imaginary, underpinned by a shared understanding

that controlling floodwaters is no longer tenable and that "We should… just embrace that flood is going to happen." (Interview with architect from ASF-Indonesia. August 27, 2017).

Figure 6. Architectural rendering of possible design for kampung susun. Credit: Yu Sing, Akanoma Studios.

Relying on a participatory approach on in-situ upgrading, these designs counter city efforts to roll out generic public housing, articulating instead alternative strategies for implementation at the localized scale of the *kampung*. In-situ upgrading is therefore imagined as a desirable alternative to the large-scale displacement of residents to peripheral urban areas. FKK thus promotes a socio-ecological environmentalism that envisions an alternative urban ecology for Jakarta wherein residents are imagined living with water, premised on a more participatory approach to urban flood management.

Far from producing alternative solutions in isolation, FKK members have collaborated with residents in co-producing these counter-hegemonic imaginaries. Therefore, while engaging tactics of insurgent expertise, the work of FKK does not endorse the same narrow definition of 'expertise' as the state. Like many social and environmental justice movements, central to the environmentalism of FKK is a deep appreciation of experiential and lay forms of knowledge, typically excluded by narrow definitions of expertise in urban planning and policy. At the same time as citing expert opinions and referencing research, FKK emphasizes that "experts" do not always know best and are committed to highlighting the value of experiential knowledge, the actually-existing resiliency of residents to floodwaters, and "local wisdom" of kampung residents (interview with journalist from Jakarta Post. August 25, 2017). For example, many riverbank communities have their own informal flood warning systems, and emergency and evacuation procedures (interview with community architect, *Ciliwung Medeka*, October 04, 2015; see also van Voorst, 2016). Working against a pervasive perception, even among residents themselves, that "local knowledge, local ways of doing things are old, outdated, not contemporary and not useful" (interview with community architect from *Ciliwung Merdeka*. October 04, 2015), FKK has sought to bolster the value of localized forms of knowledge, promoting "ecological solutions that at the same time rely on social capital and community and citizen organization" (interview with architect and Director of Rujak, October 08, 2015) through participatory modes of governance that meaningfully incorporate residents into decision-making in order to "move towards [a] solution together" (interview with community architect from *Ciliwung Merdeka*. October 04, 2015). FKK has therefore enrolled and promoted alternative ways of knowing the environment and envisioning urban adaptation, illustrating the contested and situated nature of expertise. FKK thus not only radically reimagines the relationship between Jakarta's residents and their environment, but also envisions the inclusion and meaningful participation of communities in state-led efforts to respond to flooding, demanding true citizenship participation.

In articulating these visions for in-situ upgrading, members of FKK also draw on discourses and forms of expertise that circulate through transnational networks. For example, one architect engaged in practices of inter-referencing (Bunnell, 2015), noting the abandonment of concretization in favor of ecological designs such as the Room for the River program in the Netherlands, pointing to the apparent divergence between these efforts domestically and the kinds of projects that Dutch consultants promote in Jakarta. At the same time, these plans for in-situ upgrading connect to Jakarta's ecological history prior to colonialism by referencing that Jakarta was once *rawa* (swamp) before the Dutch introduced the technical interventions that characterize the city today; it is an imaginary of a future Jakarta which reconnects with the city's pre-colonial ecology.

Conclusion

FKK emerges out of a history of social activism in Jakarta in which "middle-class social activists have tried to assist poor Jakartans pressured by government policies" (Savirani & Aspinall, 2017, p. 12). The shift in the discourses deployed by FKK from appeals to ideas of social justice and human rights, towards a tactic of insurgent expertise illustrates the pragmatism of social movements. Though drawing some parallels to the use of citizen science by EJ movement, the use of this tactic illustrates the limited traction of notions of social and environmental justice in Jakarta, where these discourses have proven largely unsuccessful in drawing middle class support or engaging the state. In addition to mobilizing scientific arguments and research, because members of FKK are already recognized as experts by the state and middle classes, they are able to leverage their status to participate in public debates and enter into dialogue with state actors. FKK has sought to undermine the environmental legitimacy of state approaches to flooding, rendering such 'solutions' fragile to critiques in ways that would be hard for the state to ignore. By engaging with the state on its own terms and deploying

expertise recognized by the state as such, FKK have explicitly sought the support of the middle class to legitimize their form of environmentalism.

A tactic of insurgent expertise presents some opportunities for social activism. More specifically, it points to the ways in which activists can leverage their socio-spatial positionalities to meet the socio-environmental justice goals of urban poor communities. Endorsing a broadened definition of who counts as an expert, FKK highly values the expertise and knowledge of communities and residents. FKK has a politico-ethical commitment to collaborating with urban poor communities in order to co-produce alternative urban futures (for example, by developing designs for in-situ upgrading projects). While activists and communities emerge as important players shaping urban environmental politics (a dimension often underplayed in analyses that focus on state actors), it seems that engagement with the state remains crucial to realizing change in contemporary Jakarta. The challenge of achieving such participatory modes of governance may be as great as the task of reimagining Jakarta as a 'water city'.

This chapter has focused specifically on the work of a relatively privileged network of academics, architects and activists, exploring the narratives and tactics central to their advocacy work from their situated perspectives. In doing so, it contributes to broadening understandings of the range of actors engaged in both promoting alternative forms of development, and challenging state-led practices that marginalize the urban poor and exacerbate flooding. More research is needed to examine the relationship between these activists and the communities they seek to represent and advocate for, as well as the power dynamics internal to FKK. Interrogating the class dynamics that permeate these interactions, as well as the inter-community differences in how individuals choose (not) to engage with community architects and civil society organizations, for example, would further disaggregate the ecologies of activism in Jakarta.

At least discursively, the current Governor Anies (2017 – present) marks a departure from Ahok's tough eviction policy. During their campaign, Anies and his deputy nominee Sandiaga Uno made visits to sites of high profile evictions, including Kampung Akuarium and Pasar Ikan in North Jakarta, pledging to protect *kampung* residents and promising an end to evictions of illegal settlements. Anies also promised to develop *kampung susun* for residents evicted from Bukit Duri in 2016 (an eviction that has since been declared illegal). During a visit to a *kampung* in West Jakarta in March 2017, Sandiaga Uno promised: "Anies and I will not evict residents forcefully from their homes. We'll sit together to hear what solutions they want the most" (Walden, 2017, March 28). Members of FKK were also been involved in drawing up a political contract (*kontrak politik*) with Anies prior to the election, outlining 46 specific demands from the urban poor including demands for the legalization of *kampung* lands, changes to the spatial plan the allocation of use rights (*hak pankai*), and affordable housing for the poor in exchange for electoral support for Anies. After Anies was elected in April 2017, these actors sought to ensure these demands were incorporated into policy (Savirani & Aspinall, 2017).

Despite the many promises Anies made to residents, some of those I interviewed seemed wary of pinning their hopes on him. Their hesitancy seemed warranted, some months later in December 2017, when Anies began advocating for river dredging (crucially without explicitly discussing the issues of eviction and resettlement) and blaming riverbank settlements for narrowing the rivers. By February 2018, it was announced that the city would resume evictions in order to facilitate the normalization projects. However, at the time of writing, Anies has just issued Kepgub No. 878 (2018) for a Task

Force on the Implementation of Village and Community Arrangement[38]. The Governor Decree is intended to oversee the planning of a select number of kampungs in collaboration with the communities. It remains to be seen how this Decree will actually materialize and with what effects. Nonetheless, this development is perhaps indicative of the political potential of the radical incrementalism of communities and grassroots organizations, and their efforts to imagine alternative forms of development and urban adaptation. In Jakarta, where civil society is still relatively weak, envisioning and implementing small-scale alternative development projects constitute important political work.

---

[38] Translated from: *Kepgub Nomor 878 Tahun 2018 tentang Gugus Tugas Pelaksanaan Penataan Kampung dan Masyarakat.*

Chapter Five. Conclusion

Using the GGSW project as a lens, this dissertation has examined how different environmental imaginaries, expertise, and discourses are mobilized by consultants, bureaucrats, and activists in debates concerning flood mitigation. Together, these empirical chapters shed light on why some flood mitigation projects are chosen over others, and the implications for social and environmental justice. Chapters Two and Three document the ways in which the particular localized politico-economic context of Jakarta and transnational networks of expertise have contributed to the dominance of technological infrastructure solutions to flooding, while Chapter Four closely examines the alternative counter-hegemonic imaginaries mobilized by a network of activists. Collectively, the chapters examine how various actors (consultants, bureaucrats, activists) mobilize situated forms of expertise, environmentalism, and urban and environmental imaginaries in order to promote and contest the dominant state responses to flooding.

Empirical Insights

Several empirical insights are gleaned from this dissertation. The first is that while the GGSW project does not include any measures to slow or stop land subsidence, it has still been touted by consultants as the best solution for Jakarta. Chapter 2 elucidates how the project has nonetheless retained its allure among political elites owning to the geographically and historically contingent techno-political network from which it emerges, characterized by particular political and economic interests, world-class city aspirations, engineering expertise, capital flows, colonial histories, and postcolonial relations between Jakarta and the Netherlands. The chapter demonstrates the role of both the world-class city aspirations of political elites and the historical and contemporary networks of expertise connecting the Netherlands with Jakarta. These are important empirical insights for Jakarta, not least since the

GGSW project has not been communicated to the public very effectively, resulting in suspicion and widespread confusion about its purpose and the agenda of those promoting it.

While Chapter Two illustrates the broader structural processes driving the project forward, Chapter Three documents the processes of articulation between Dutch consultants and Indonesian bureaucrats, and by extension the friction between Dutch expertise and the localized context of Jakarta. The chapter illuminates the central role of Indonesian state actors in both facilitating and disrupting the implementation of the project. These are important insights that provide an alternative perspective on the project. While the colonial history between Indonesia and the Netherlands is crucial for understanding and situating the project and Dutch involvement (as Chapter 2 attests), Chapter 3 documents the shifting power relations between these two countries, in ways that challenge readings of the GGSW project as simply a neocolonial imposition. It also challenges narratives of the project of globalizing Dutch expertise, and of the GGSW project, as inevitable. The insights into the GGSW project provided by Chapters 2 and 3 will be especially useful for communities and grassroots organizations who may have had only limited contact with the bureaucrats, officials and consultants who are promoting it. Additionally, information about the project that was once publicly available, such as the master plan, has since been taken offline. More broadly, the empirical findings of these chapters will be of interest (if perhaps not revelatory) to engineers, consultants, development practitioners, policymakers and governments working in the fields of water management and urban development. The chapters point to the ways in which infrastructure projects can be both driven forward and disrupted by structural forces and the political or economic agendas of a broad range of actors.

By examining the work of Forum Kampung Kota, Chapter 4 contributes to documenting the range of actors engaged in social activism in Jakarta, and the situated practices through which they challenge state-led practices that marginalize the urban poor and promote alternative forms of development. I elucidate how the network has strategically sought to undermine the environmental legitimacy of state approaches to flooding in order to challenge state-led evictions and envision alternative modes of urban adaptation. The chapter points to the limitations of social and environmental justice narratives, which have proven largely unsuccessful in drawing middle class support or engaging the state in Jakarta, as well as the pragmatism of social activists in Jakarta who are willing to engage with the state strategically in order to meet their goals.

Theoretical Insights

This dissertation makes three primary theoretical contributions. First, Chapter Two contributes to recent debates in political ecology and urban studies. Observing a recent wave of concrete-heavy, capital-intensive water infrastructure projects, some scholars have suggested we are witnessing a return to big infrastructure within water management. In tracing the techno-political network through which the GGSW project emerges, I contribute to furthering analyses of the contemporary economic and political motivations that underpin infrastructure projects by drawing attention to enduring colonial histories and postcolonial relations that propel the GGSW project forward. Observing that the 'hydraulic age' in Jakarta never waned, I demonstrate the need to provincialize emergent narratives charting the apparent rise, fall and return of big infrastructure.

Second, by elucidating the uncertainty of the GGSW project and the uneasiness of the project of globalizing Dutch expertise in Jakarta, Chapter 3 advances theoretical understandings of immobility and failure in the policy mobilities literature. More specifically, by engaging with Anna Tsing's (2005)

notion of friction, I interrogate stillness and immobility with regards to the planning of the GGSW project, not as an end state but as part and parcel of policy mobilities. Moments of friction are revealed to be both disruptive and productive. While the GGSW project has not yet been implemented, it still does work for various actors in Jakarta (including the provincial government of DKI Jakarta, Indonesian ministries, Dutch consultancy firms and property developers) illustrating that Dutch expertise remains in motion, albeit moving in unanticipated directions. Further, I demonstrate the need for policy mobilities to learn from other fields, particularly studies of globalization within anthropology and sociology, if it is to continue to be theoretically and conceptually innovative. While policy mobilities provides us with vocabularies to analyze movement and flows, it is currently less equipped to examine moments of policy localization and disruption.

Third, by tracing in Chapter Four the shift in the narratives deployed by FKK from one that appealed to ideas of social and environmental justice to the mobilization of ecological reasoning (Doshi, 2013), I identify what I term a tactic of insurgent expertise. Though drawing parallels to the use of citizen science by the EJ movement, the use of this tactic illustrates the limited traction of social and environmental justice narratives in Jakarta, where they do not possess the same currency. By documenting the situated forms of social action and environmentalism in Jakarta, this chapter also contributes to scholarship in situated urban political ecology concerned with documenting the situated and networked forms of environmentalism in particular geographical contexts.

Limitations and Future Research Directions

While all those interviewed spoke fluent English and many key documents were available in English, having only a basic working knowledge of the Indonesian language presented challenges for undertaking this project and necessarily limited the research I was able to do. On more than one

occasion, I was unable to contact a particular individual for interview since they did not speak English. Those interviews I was able to conduct, particularly with Indonesian bureaucrats, were comparatively thin relative to the interviews with Dutch consultants who tended to be more proficient in English. The fact that I was less embedded in Jakarta and in the language also presented challenges for interviewing activists, who are understandably wary of the large number of foreign researchers looking to extract information for their research projects. I expect having been fluent in Indonesian would have made it easier to build trust. Though I was invited into different *Whatsapp* groups where activists discussed issues such as reclamation and the river normalization projects, I found these vitually impossible given my lack of familiarity with the colloquiual language and abbreviations that members of the group used to converse, as well as the tremendous rate of exchange of information. These are considerable challenges and limitations that are not easily overcome. My hope is that by continuing to conduct fieldwork in Jakarta and study the language, I will be able to navigate these more easily over time.

While this research explores the politics of flood mitigation, I often came up against the limits of restricting my research to the study of floodwaters. Given that most experts attribute Jakarta's flooding to land subsidence caused by groundwater extraction, flooding is deeply interconnected with the politics of water supply. Despite piped water having never having constituted the primary water supply for Jakarta's residents (Kooy, 2018), a 100% rate of connection to piped water remains the policy goal. Yet the provision of piped water in Jakarta and its privatization have been fraught and difficult. The study of floodwaters could easily spill over into an examination of groundwater and surface water. A discussion of the political ecologies of water supply was outside the scope of this dissertation. While offering explanations for what drives the GGSW project forward, this dissertation is unable to speak to what makes other infrastructural projects, such as piped water, less attractive. In hindsight, I believe

that interrogating this further could potentially provide further insights into why the GGSW project was often described both as a last resort and as Jakarta's best option to protect its residents from flooding. More work is therefore needed to more thoroughly understand the interconnectedness of different flows of water through the city[39]. In addition to providing more robust empirical and theoretical insights into the political ecologies of urban water, such work would also find utility in policy and water governance circles, where efforts to transition to a more integrated mode of water management are underway around the world.

A number of different actors – policymakers, bureaucrats, engineers, residents, planners, consultants and so forth – are involved in actively making and remaking Jakarta and therefore have a stake in the politics of flood mitigation. However, not all feature in this dissertation. While this dissertation has closely tracked the discourses and practices of Dutch consultants, the provincial government, Indonesian ministries, and a network of activists, one omission is the role of private property developers, which feature only in in the background of this dissertation. Property developers are the "big actors" (Simone, 2014, p. 41) rapidly shaping Jakarta's landscape. Despite processes of democratization and decentralization, "the same Suharto-era political parties continue to operate as escalators for careers and wealth" (Hadiz & Robison, 2013, p. 36; see also Herlambang, Leitner, Tjung, Sheppard, & Anguelov, 2018). This also relates to the private sector with its enduring ties to the New Order. Developers are important players in most stories to be told about contemporary Jakarta[40].

---

[39] Particularly instructive is the recent paper by Furlong and Kooy (2017) examining the "ecological connections" between different flows of water in Jakarta.

[40] For a close discussion of the interconnectedness of Indonesia's New Order crony capitalism and flooding interventions see Batubara, Kooy & Zwarteveen (2018).

However, they are difficult to get close to and research examining the industry typically does so from a distance, documenting the impacts of developers on the city. Though research has begun to examine the grounded practices and strategies through which developers assemble land (see Leitner & Sheppard, 2018), further research is needed to bring property developers out of the shadows. By illuminating the ways in which they operate and engage with the state, we can resist portraying property developers as a kind of monolithic force in the city and deepen understandings of the full range of actors shaping Jakarta.

List of References

Abeyasekere, S. (1987). *Jakarta: A History*. Singapore and New York: Oxford University Press.

Abidin, H.Z. Andreas, H., Gumilar, I., Fukuda, Y., Pohan, Y.E., & Deguchi, T. (2011). Land subsidence of Jakarta (Indonesia) and its relation with urban development. *Natural Hazards 59*(3), 1753-1771.

Anya, A. (2017, November 15) Anies told to fulfill pledges, stop river dredging. *Jakarta Post*. Retrieved from http://www.thejakartapost.com/news/2017/11/15/anies-told-to-fulfill-pledges-stop-river-dredging.html [accessed May 01, 2018]

Appel, H. (2012). Offshore work: Oil, modularity, and the how of capitalism in Equatorial Guinea. *American Ethnologist*, *39*(4), 692-709.

Arabindoo, P. (2017) Unprecedented natures? An Anatomy of the Chennai Floods *City 20*(6), 800-821.

Baker, T., Cook, I. R., McCann, E., Temenos, C., & Ward, K. (2016). Policies on the move: The transatlantic travels of Tax Increment Financing. *Annals of the American Association of Geographers*, *106*(2), 459-469.

Bakker, M., Kishimoto, S., & Nooy, C. (2017). *Social justice at bay: The Dutch role in Jakarta's coastal defence and land reclamation*. The Transnational Institute. Retrieved from www.tni.org/en/publication/social-justice-at-bay [accessed May 07, 2017]

Batubara, B., Kooy, M., & Zwarteveen, M. (2018) Uneven urbanisation: Connecting flows of water to flows of labour and capital through Jakarta's flood infrastructure. *Antipode*. 1-20. Advance online publication.

Baviskar, A. (2003). Between violence and desire: space, power, and identity in the making of metropolitan Delhi. *International Social Science Journal*, *55*(175), 89-98.

Beck, E. C. (1979). The love canal tragedy. *EPA Journal 5*(1), 17-20.

Belarminus, R. (2016, April 12). 'Harusnya Ahok ikuti kontrak politik Jokowi ketika menjadi calon gubernur'. *Kompas.* Retrieved from https://megapolitan.kompas.com/read/2016/04/12/11312221/.Harusnya.Ahok.Ikuti.Kontrak.Politik.Jokowi.Ketika.Menjadi.Calon.Gubernur. [accessed April 23, 2018]

Bergdoll, B. (2011). *Rising currents: Projects for New York's waterfront.* New York: Museum of Modern Art.

Bijker, W.E. (2007). Dikes and dams, thick with politics. *Isis* 98(1), 109-123.

Blaikie, P., and Brookfield, H. (1987). (Eds.) *Land degradation and society.* London: Methuen.

Blussé, L. (1986). *Strange company: Chinese settlers, mestizo women and the Dutch in VOC Batavia.* Dordrecht, NL: Foris Publications.

Bok, R. (2015). Airports on the move? The policy mobilities of Singapore Changi Airport at home and abroad. *Urban Studies*, *52*(14), 2724–2740.

Bok, R. (n.d.) Legacies of success, failure, anxiety: Territorializing the "Singapore model" in urban China. Manuscript in preparation.

Bok, R., & Coe, N. M. (2017). Geographies of policy knowledge: The state and corporate dimensions of contemporary policy mobilities. *Cities*, *63*, 51-57.

Bond, P. (2012). Politics of climate justice. *Paralysis above, movement below.* Scottsville: University of KwaZulu-Natal Press.

Braun, B. P. (2014). A new urban dispositif? Governing life in an age of climate change. *Environment and Planning D: Society and Space*, *32*(1), 49-64.

Brinkman, J., & Hartman, M. (n.d.). *Jakarta Flood Hazard Mapping Framework.* Unpublished paper.

Brown, P. (1992). Popular epidemiology and toxic waste contamination: Lay and professional ways of knowing. *Journal of Health and Social Behavior,* 33, 267-81.

Brown, P., & Mikkelsen, E.J. (1990). *No safe place: Toxic waste, leukemia, and community action.* Berkeley: University of California Press.

Budiari, I. (2016). City reject's ex-priest's 'kampung susun' proposal. *The Jakarta Post*. September 19, 2016.

Bullard, R. D. (1990). *Dumping in Dixie: Race, class, and environmental quality*. Boulder; San Francisco; Oxford: Westview Press.

Bullard, R. D. (1999). Dismantling environmental racism in the USA. *Local Environment*, *4*(1), 5-19.

Bullard, R. D., & Johnson, G.S. (2000). Environmental justice: Grassroots activism and its impact on public policy decision making. *Journal of Social Issues 56*(3), 555–578.

Bunnell, T. (2015). Antecedent cities and inter-referencing effects: learning from and extending beyond critiques of neoliberalisation. *Urban Studies*, *52*(11), 1983–2000.

Burrell, J. (2009). The field site as a network: A strategy for locating ethnographic research. *Field Methods*, *21*(2), 181-199.

Capek, S. M. (1993) The 'environmental justice' frame: A conceptual discussion and an application. *Social Problems 40*(1), 5–24.

Chakrabarty, D. (2000). *Provincializing Europe: Postcolonial thought and historical difference*. Princeton, NJ: Princeton University Press.

Chang, I.-C. C., & Sheppard, E. (2013). China's eco-cities as variegated urban sustainability: Dongtan eco-city and Chongming eco-island. *Journal of Urban Technology*, *20*(1), 57-75.

Chang, I.-C. C., Leitner, H., & Sheppard, E. (2016). A green leap forward? Eco-state restructuring and the Tianjin–Binhai eco-city model. *Regional Studies*, *50*(6), 929-943.

Chang, I.-C. C., (2017). Failure matters: Reassembling eco-urbanism in a globalizing China. *Environment and Planning A*, *49*(8), 1719–1742.

Clarke, N. (2012). Urban policy mobility, anti-politics, and histories of the transnational municipal movement. *Progress in Human Geography*, *36*(1), 25–43.

Cochrane, J. (2013, September 25) In Indonesia, a Governor at Home on the Streets. *New York Times*. Retrieved from https://www.nytimes.com/2013/09/26/world/asia/in-indonesia-a-governor-at-home-on-the-streets.html [accessed June 14, 2018]

Cole, L. W., & Foster, S. R. (2001). *From the ground up: Environmental racism and the rise of the environmental justice movement*. New York: New York University Press.

Corburn, J. (2003). Bringing local knowledge into environmental decision making: improving urban planning for communities at risk. *Journal of Planning Education and Research 22*(4), 420–433.

Corburn, J. (2005). *Street Science: Community Knowledge and Environmental Health Justice*. Cambridge, MA: MIT Press.

Cresswell, T. (2012). Mobilities II: still. *Progress in human geography*, *36*(5), 645-653.

Crow-Miller, B. (2015). Discourses of deflection: The politics of framing China's South-North Water Transfer Project. *Water Alternatives 8*(2), 173-192.

Cybriwsky, R. & Ford, L.R. (2001). City profile: Jakarta. *Cities 18*(3), 199-210.

Dartmouth Flood Observatory (n.d.) 2007 global register of major flood events. Retrieved from http://www.dartmouth.edu/~floods/Archives/2007sum.htm [accessed May 23, 2018]

Dean, A., Green, D., & Nunn, P. D. (2017) Too much sail for a small craft? Donor requirements, scale, and capacity discourses in Kiribati. In E. Stratford (Ed.), *Island Geographies* (pp. 54–77). London: Routledge.

Deltares Taskforce Subsidence. (2015). *Sinking cities*. Delft/Utrecht, Netherlands: Deltares. Retreived from www.deltares.nl/app/uploads/2015/09/Sinking-cities.pdf [accessed November 20, 2016]

Disco, C. (2002). Remaking 'nature': The ecological turn in Dutch water management. *Science, Technology and Human Values 27*(2), 206-235.

Dixon, J., & Ramutsindela, M. (2006). Urban resettlement and environmental justice in Cape Town. *Cities*, *23*(2), 129-139.

DKI Jakarta. (2012). *Regional regulation of Jakarta capital city number 1 year 2012 concerning regional spatial plan Jakarta 2030*. Jakarta: DKI Jakarta.

Domosh, M. (2010). The world was never flat: early global encounters and the messiness of empire. *Progress in Human Geography*, *34*(4), 419–435.

Doshi, S. (2013). Resettlement ecologies: Environmental subjectivity and graduated citizenship in Mumbai. In A. Rademacher & K. Sivaramakrishnan (Eds.) *Ecologies of urbanism in India: metropolitan civility and sustainability*. (pp. 225–248.) Hong Kong: Hong Kong University Press.

Dutch Water Sector. (2014)a. *Dutch training and exposure program, Rotterdam-Jakarta* (2014-2016). Dutch Water Sector. Retrieved from www.dutchwatersector.com/solutions/projects/360-dutch-training-and-exposure-program-rotterdam- jakarta-2014-2016.html [accessed November 29, 2016]

Dutch Water Sector. (2014)b. *The Indonesia-Netherlands water challenge*. Dutch Water Sector. Retrieved from www.dutchwatersector.com/solutions/projects/279-the-indonesia-netherlands-water-challenge.html [accessed November 28, 2016]

Dutch Water Sector. (2014)c. *Young water professionals @work in Indonesia*. Dutch Water Sector. Retrieved from www.dutchwatersector.com/solutions/projects/296-young-water-professionals-work-in-indonesia.html [accessed November 28, 2016]

Dutch Water Sector. (2017). *Projects*. Dutch Water Sector. Retrieved from www.dutchwatersector.com/solutions/projects/ [accessed May 24, 2017]

Elyda, C. (2013, October 28). Giant sea wall, islet project could cause more harm than good. *Jakarta Post*. October 28, 2013.

Elyda, C. (2015). Sea wall an environmental disaster: Study. *Jakarta Post*. October 7, 2015.

Elyda, C. & Wardhani, D. A. (2015, April 27). Jakarta stops funding 'kampung deret'. Jakarta Post. April 27, 2015. Retrieved from http://www.thejakartapost.com/news/2015/04/27/jakarta-stops-funding-kampung-deret.html [accessed May 01, 2018]

Emerson, R.M., Fretz, R. I., & Shaw, L. L. (1995) *Writing Ethnographic Fieldnotes*. Chicago: University of Chicago Press.

Escobar, A. (1996). Construction nature: Elements for a post-structuralist political ecology. *Futures*, *28*(4), 325-343.

Falzon, M.A. (2009) Introduction. In M. A. Falzon (Ed.) *Multi-sited ethnography: Theory, praxis and locality in contemporary research.* (pp. 1–23). London; New York: Routledge.

Konferensi akademisi dan praktisi pecinta Kampung Kota. (2015). *Pernyataan bersama kepada bapak gubernur Daerah Khusus Ibukota Jakarta.*

Forum Kampung Kota. (2016, October 25) "Stigmatisasi, justifikasi, hancurkan!". Forum Kampung Kota medium page. Retrieved from https://medium.com/@forumkampungkota/stigmatisasi-justifikasi-hancurkan-f8b956bc6f9c **Error! Bookmark not defined.**[accessed May 01, 2018]

Forum Kampung Kota. (n.d.) "About". Forum Kampung Kota medium page. Retrieved from https://medium.com/forumkampungkota/about [accessed May 01, 2018]

Frickel, S. (2004). Just science? Organizing scientist activism in the US environmental justice movement. *Science as Culture 13*(4), 449–69.

Furlong, K., & Kooy, M. (2017). Worlding water supply: Thinking beyond the network in Jakarta. *International Journal of Urban and Regional Research 41*(6) 888-903.

Gabriel, N. (2014). Urban political ecology: Environmental imaginary, governance, and the non-human. *Geography Compass*, *8*(1), 38-48.

Gandy, M. (2008). Landscapes of disaster: Water, modernity, and urban fragmentation in Mumbai. *Environment and planning A*, *40*(1), 108-130.

Ghertner, D.A. (2015). *Rule by aesthetics: World-class city making in Delhi.* New York: Oxford University Press.

Gleick, P.H. (2000). A look at twenty-first century water resources development. *Water International 25*(1), 127- 138.

Goldman, M. (2005). *Imperial nature: The World Bank and struggles for social justice in the age of globalization.* New Haven and London, UK: Yale University Press.

Goldman, M. (2011). Speculating on the next world city. In A. Roy & A. Ong (Eds.), *Worlding cities: Asian experiments and the art of being global,* (pp. 229–258). Chichester, UK; Malden, MA: Wiley-Blackwell.

Government of the Netherlands. (2015, December 03). Henk Ovink appointed as first special envoy for international water affairs for the Kingdom of the Netherlands. Retrieved from https://www.government.nl/latest/news/2015/03/12/henk-ovink-appointed-as-first-special-envoy-for-international-water-affairs-for-the-kingdom-of-the-netherlands [accessed May 12, 2018]

Grineski, S. E. (2006). "Local struggles for environmental justice: Activating knowledge for change. *Journal of Poverty 10*(3): 25–49.

Guha, R., & Martinez-Alier, J. (1998). *Varieties of environmentalism: Essays North and South.* Delhi; New York: Oxford University Press.

Guy, S. & Marvin, S. (1996). Transforming urban infrastructure provision – The emerging logic of demand side management. *Policy Studies 17*(2), 137-147.

Hadiz, V. R., & Robison, R. (2013). The political economy of oligarchy and the reorganization of power in Indonesia. *Indonesia*, *96*(1), 35-57.

Hannam, K., Sheller, M., & Urry, J. (2006) Editorial: Mobilities, immobilities and moorings. *Mobilities*, 1(1), 1-22

Haraway, D. J. (1988). Situated knowledges: The science question in feminism and the privilege of partial perspective. *Feminist studies*, *14*(3), 575-599.

Haraway, D. J. (1991). A cyborg manifesto: Science, technology, and socialist-feminism in the late twentieth century. In *Simians, cyborgs, and women: The reinvention of nature*. (pp. 149–181). New York: Routledge.

Harvey, D (1996). *Justice, nature and the geography of difference*. Oxford: Blackwell.

Hecht, G. (2001). Technology, politics, and national identity in France. In M. T. Allen & G. Hecht (Eds.), *Technologies of power: Essays in honor of Thomas Parke Hughes and Agatha Chipley Hughes*. (pp. 253–293). Cambridge, Massachusetts; London, England: The MIT Press.

Hecht, G. (2011). Introduction. In G. Hecht (Ed.), *Entangled geographies: Empire and technopolitics in the global Cold War*. (pp. 1–12). Cambridge, Massachusetts; London, England: The MIT Press.

Hellman, J. & van Voorst, R. (2018) "Claiming space in Jakarta: Megaprojects, city planning and incrementalism." In J. Hellman, M. Thynell & R. van Voorst (Eds.) *Jakarta: Claiming spaces and rights in the city* (pp. 157–172). London; New York: Routledge.

Holifield, R. (2001). Defining environmental justice and environmental racism. *Urban Geography*, *22*(1), 78-90.

Holifield, R. (2004). Neoliberalism and environmental justice in the United States environmental protection agency: Translating policy into managerial practice in hazardous waste remediation. *Geoforum*, *35*(3), 285-297.

Holston, J. (2008) Insurgent citizenship: disjunctions of democracy and modernity in Brazil. Princeton: Princeton University Press.

Ja-young, Y. (2017, April 30). Mega-size Saemangeum project gaining speed. *The Korea Times*. Retrieved from www.koreatimes.co.kr/www/biz/2017/05/367_229262.html [accessed May 20, 2017]

Jacobs, J. M. (2012). Urban geographies I: Still thinking cities relationally. *Progress in Human Geography*, *36*(3), 412–422.

Jacobs, J. M., & Lees, L. (2013). Defensible space on the move: Revisiting the urban geography of Alice Coleman. *International Journal of Urban and Regional Research*, *37*(5), 1559–1583.

Jakarta Globe (2013, November 20). The Dutch return, this time as friends. *Jakarta Globe* Retrieved from: http://jakartaglobe.id/news/the-dutch-return-this-time-as-friends/ [accessed November 28, 2016]

Jakarta Post. (2015)a. Violent eviction of poor in Kampung Pulo. August 20, 2015.

Jakarta Post. (2015)b. Editorial: Stop Jakarta's sinking. October 10, 2015.

Jakarta Post (2016, June 04) Ahok rejects criticism of eviction policy. *Jakarta Post*. June 04, 2016. Retrieved from http://www.thejakartapost.com/news/2016/06/04/ahok-rejects-criticism-of-eviction-policy.html [accessed May 22, 2018]

Kaika, M. (2005). *City of flows: Nature, modernity and the city*. London; New York: Routledge.

Kaika, M. (2006). Dams as symbols of modernization: The urbanization of nature between geographical imagination and materiality. *Annals of the Association of American Geographers* 96(2), 276-301.

Kaika, M., & Swyngedouw, E. (2012). Cities, natures and the political imaginary. *Architectural Design*, *82*(4), 22-27.

Karpouzoglou, T., & Zimmer, A. (2016). Ways of knowing the wastewaterscape: Urban political ecology and the politics of wastewater in Delhi, India. *Habitat International*, *54*, 150-160.

Katz, C. (2001). Vagabond capitalism and the necessity of social reproduction. *Antipode*, *33*(4), 709-728.

Kingdom of the Netherlands. (2017) Factsheet – The Delta Approach: A dynamic approach for delta regions. Retrieved from https://www.netherlandsandyou.nl [accessed May 21, 2018]

Koch, N. (2013). Why not a world city? Astana, Ankara, and geopolitical scripts in urban networks. *Urban Geography*, *34*(1), 109–130

Koch, W. (2015, December 10). Could a titanic seawall save this quickly sinking city? *National Geographic News.* Retrieved from https://news.nationalgeographic.com/energy/2015/12/151210-could-titanic-seawall-save-this-quickly-sinking-city/ [accessed November 20, 2016]

Koellner, A. (2016). Resiliency roundtable. *Green Building and Design Magazine.* Retrieved from http://gbdmagazine.com/2016/resiliency-roundtable-kristina-hill/ [accessed November 26, 2016]

Kompas (2015, September 21). Normalisasi jadi solusi banjir. *Kompas.* Retrieved from https://megapolitan.kompas.com/read/2015/09/21/15230021/Normalisasi.Jadi.Solusi.Banjir?page=all [accessed May 22, 2018]

Kooy, M. (2018, January 26). Worlding water supply. *FLOWS.* Retrieved from https://flows.hypotheses.org/942 [accessed May 25, 2018]

Kooy, M., & Bakker, K. (2008). Splintered networks: The colonial and contemporary waters of Jakarta. *Geoforum*, *39*(6), 1843-1858.

Kusno, A. (2011). Runaway city: Jakarta Bay, the pioneer and the last frontier. *Inter-Asia Cultural Studies* 12(4), 513- 531.

Kusno, A. (2014) Green governmentality. In A. Kusno *After the New Order: Space, politics and Jakarta.* (pp. 119–138) Honolulu: University of Hawai'i Press.

Larkin, B. (2013). The politics and poetics of infrastructure. *Annual Review of Anthropology 42*(1), 327–43.

Larner, W., & Laurie, N. (2010). Travelling technocrats, embodied knowledges: Globalising privatisation in telecoms and water. *Geoforum*, *41*(2), 218–226.

Latour, B., & Woolgar, S. (1979) *Laboratory Life: The construction of scientific facts*. Beverly Hills: Sage Publications.

Lauermann, J. (2016). Temporary projects, durable outcomes: Urban development through failed Olympic bids? *Urban Studies*, *53*(9), 1885–1901.

Lawhon, M. (2013). Situated, networked environmentalisms: A case for environmental theory from the south. *Geography Compass*, *7*(2), 128-138.

Lawhon, M., Ernstson, H., & Silver, J. (2014). Provincializing urban political ecology: Towards a situated UPE through African urbanism. *Antipode 46*(2), 497-516.

Lawhon, M., Pierce, J., & Bouwer, R. (2018). Scale and the construction of environmental imaginaries in local news. *South African Geographical Journal*, *100*(1), 1-21.

LBHJ (2016). *Atas Nama Pembangunan: Laporan Penggusuran Paksa di Wilayah DKI Jakarta Tahun 2015*. Jakarta: LBH-Jakarta.

Lee, D. (2007) Taking the streets: Activism and memory work in Jakarta. *Indonesian Working Papers No. 3*. The University of Sydney. Retrieved from http://sydney.edu.au [accessed May 24, 2018]

Leitner, H., & Sheppard, E. (2018). From kampungs to condos? Contested accumulations through displacement in Jakarta. *Environment and Planning A: Economy and Space*, *50*(2), 437-456.

Leitner, H., Sheppard, E., & Sziarto, K. M. (2008). The spatialities of contentious politics. *Transactions of the Institute of British Geographers*, *33*(2), 157-172.

Leitner, H., Sheppard, E., Webber, S. & Colven, E. (2018) Globalizing urban resilience. *Urban Geography*. 1–9. Advance online publication.

Leitner, H., Colven, E., & Sheppard, E. (2017). Ecological security for whom? The politics of flood alleviation and urban environmental justice in Jakarta, Indonesia. In U. K. Heise, J. Christensen

& M. Niemann (Eds.), *The Routledge Companion to the Environmental Humanities*. (pp. 194–205). New York: Routledge.

Lim, M. (2008). "Transient civic spaces in Jakarta demopolis" in *Globalization, the city and civil society in Pacific Asia: The social production of civic spaces* (Eds.) M. Douglass, K.C. Ho, & Giok Ling Ooi. (pp. 211–230). New York and London: Routledge.

Loftus, A., & March, H. (2015). Financialising nature? *Geoforum* 60, 172-75.

Loftus, A., & March, H. (2016). Financializing desalination: Rethinking the returns of big infrastructure. *International Journal of Urban and Regional Research* 40(1), 46-61.

Lovell, H. (2017a). Are policy failures mobile? An investigation of the Advanced Metering Infrastructure Program in the State of Victoria, Australia. *Environment and Planning A: Economy and Space*, *49*(2), 314–331.

Lovell, H. (2017b). Policy failure mobilities. *Progress in Human Geography*, 1-18.

Machold, R. (2015). Mobility and the model: Policy mobility and the becoming of Israeli homeland security dominance. *Environment and Planning A*, *47*(4), 816-832.

MacKinnon, D., & Derickson, K. D. (2013). From resilience to resourcefulness: A critique of resilience policy and activism. *Progress in Human Geography*, *37*(2), 253-270.

March, H. (2015). The politics, geography, and economics of desalination: A critical review. *WIREs Water 2*, 231- 243.

Martínez-Alier, J. (1997). Environmental justice (local and global). *Capitalism Nature Socialism*, *8*(1), 91-107.

Massey, D. (2005) *For space*. London; Thousand Oaks; New Delhi: Sage Publications.

McCann, E. (2008) Expertise, truth, and urban policy mobilities: Global circuits of knowledge in the development of Vancouver, Canada's 'four pillar' drug strategy. *Environment and Planning A*, *40*(4), 885-904.

McCann, E., & Ward, K. (2012). Assembling urbanism: following policies and 'studying through' the sites and situations of policy making. *Environment and Planning A*, *44*(1), 42-51.

McCann, E., & Ward, K. (2015). Thinking through dualisms in urban policy mobilities. *International Journal of Urban and Regional Research*, 34*(9),* 828-830.

McGregor, A. (2004). Sustainable development and warm fuzzy feelings': discourse and nature within Australian environmental imaginaries. *Geoforum*, *35*(5), 593-606.

Metz, T., & van den Heuvel, M. (2012). *Sweet and salt: Water and the Dutch.* Rotterdam: Netherlands Architecture Institute.

Ministry of Economic Affairs, Agriculture and Innovation, Government of the Netherlands (2012). *Offerteaanvraag voor de uitvoering van diensten voor Agentschap NL: Inhuur ten behoeve van het opstellen van een Masterplan voor kustbeschermingsstrategie Jakarta.* The Hague, the Netherlands.

Ministry of Infrastructure and the Environment & Ministry of Economic Affairs, Government of the Netherlands (2015, December 14). *National water plan 2016-2021.* The Hague, The Netherlands. Retrieved from https://www.government.nl/documents/policy-notes/2015/12/14/national-water-plan-2016-2021 [accessed May 21, 2018].

Ministry of Infrastructure and the Environment, Government of the Netherlands. (2016a). *Converging streams – An international water ambition.* The Hague, the Netherlands. Retrieved from www.waterinternationaal.nl [accessed May 21, 2018].

Ministry of Infrastructure and the Environment, Government of the Netherlands (2016b). *International water ambition: Sufficient access to water. Improved resilience. Less damage - worldwide.* The Hague, the Netherlands. Retrieved from www.waterinternationaal.nl [accessed May 21, 2018].

Ministry of Public Works, Government of the Republic of Indonesia (2015). *Analisa dampak lingkungan kegiatan normalisasi Kali Ciliwung dari pintu air Manggarai sampai Jembatan Tol TB. Simatupang*

(environmental impact assessment). Jakarta: Kementerian Pekerjaan Umum Direktorat Jenderal Sumber Daya Air Balai Besar Wilayah Sungai Ciliwung Cisadane.

Ministry of Transport, Public Works and Water Management, Ministry of Agriculture, Nature and Food Quality, & Ministry of Housing, Spatial Planning and the Environment, Government of the Netherlands (2010). *The 2011 Delta Programme: Working on the delta, Investing in a safe and attractive Netherlands, now and in the future*. The Hague, the Netherlands. Retrieved from https://english.deltacommissaris.nl [accessed May 21, 2018].

Mitchell, T. (2002). *Rule of experts: Egypt, techno-politics, modernity*. Berkeley, CA; Los Angeles, CA; London, England: University of California Press.

Mohsin, A. (2014) "Jakarta under water: The 2007 flood and the debate on Jakarta's future water infrastructure". *Jurnal wilayah dan lingkungan* 3(1), 39-58.

Monstadt, J., & Schramm, S. (2017). Toward the networked city? Translating technological ideals and planning models in water and sanitation systems in Dar Es Salaam. *International Journal of Urban and Regional Research*, *41*(1), 104-125.

Müller, M. (2015). (Im-) Mobile policies: Why sustainability went wrong in the 2014 Olympics in Sochi. *European Urban and Regional Studies*, *22*(2), 191–209.

Munk, D. (2016, November 25). Jakarta's eco future? River community goes green to fight eviction threat. *The Guardian*. Retrieved from www.theguardian.com/cities/2016/nov/25/jakarta-kampung-tongkol-eco-future-river-community--green-to-fight-eviction-threat [accessed November 28, 2016]

Nagar, R. & Geiger, S. (2007). Reflexivity and positionality in feminist fieldwork revisited. In A. Tickell, E. Sheppard, J. Peck, & T. J. Barnes, (Eds.), *Politics and Practice in Economic Geography* (pp 267–278). London; Thousand Oaks; New Delhi; Singapore: Sage Publications.

National Capital Integrated Coastal Development Consortium. (2014)a. *National Capital Integrated Coastal Development master plan.* Jakarta: National Capital Integrated Coastal Development Consortium.

National Capital Integrated Coastal Development Consortium. (2014)b. *National Capital Integrated Coastal Development master plan: Engineering report.* Jakarta: National Capital Integrated Coastal Development Consortium.

National Capital Integrated Coastal Development Consortium. (2014)c. *National Capital Integrated Coastal Development master plan: Groundwater and subsidence.* Jakarta: National Capital Integrated Coastal Development Consortium.

Netherlands Water Partnership (n.d.) *The delta approach: Preconditions for sustainable delta management.* The Hague, the Netherlands.

Nixon, R. (2011). *Slow violence and the environmentalism of the poor.* Cambridge, MA: Harvard University Press.

Padawangi, R. (2012). Climate change and the north coast of Jakarta: Environmental justice and the social construction of space in urban poor communities. In W. G. Holt (Ed.), *Urban Areas and Global Climate Change, 12* (pp. 321–339). Bingley: Emerald Group Publishing Limited.

Padawangi, R. (2013). The cosmopolitan grassroots city as megaphone: reconstructing public spaces through urban activism in Jakarta. *International Journal of Urban and Regional Research*, *37*(3), 849-863.

Padawangi, R. (2017, April 30). The invisibility of the poor. Forum Kampung Kota. Forum Kampung Kota medium page. Retrieved from https://medium.com/@forumkampungkota/the-invisibility-of-the-poor-83dc8cf18aa [accessed May 01, 2018]

Padawangi, R. (2018). In search of alternative development in post-*Reformasi* Jakarta". In J. Hellman, M. Thynell & R. van Voorst (Eds.) *Jakarta: Claiming spaces and rights in the city* (pp. 173–194). London; New York: Routledge.

Padawangi, R. & Douglass, M. (2015). Water, water everywhere: Toward participatory solutions to chronic urban flooding in Jakarta. *Pacific Affairs 88*(3), 517-50.

Padawangi, R., Turpin, E., Herlily, Prescott, M.F., Lee, I., & Shepherd, A. (2016). Mapping an alternative community river: The case of the Ciliwung. *Sustainable Cities and Society 20*, 147-157.

Peck, J. (2011). Geographies of policy: From transfer-diffusion to mobility-mutation. *Progress in Human Geography*, *35*(6), 773–797.

Perrons, D., & Posocco, S. (2009). Globalising failures. *Geoforum*, *40*(2), 131–135.

Poernomo, A., Sulistiyo, B., Taslim Arifin, T., Husrin, S., Prihantono, J., & Widodo, P.S. (2015). Kertas kerja kebijakan: *Prakiraan dampak giant sea wall teluk Jakarta*. Jakarta: Pusat Penelitian dan Pengembangan Sumberdaya Laut dan Pesisir Badan Penelitian dan Pengebangan Kelautan dan Perikanan Kemeterian Kelautan Dan Perikanan.

Pow, C. P. (2014). License to travel, *City, 18*(3), 287-306

Prince, R. (2012). Policy transfer, consultants and the geographies of governance. *Progress in Human Geography*, *36*(2), 188-203.

Pulido, L. (2000). Rethinking environmental racism: White privilege and urban development in Southern California. *Annals of the Association of American Geographers*, *90*(1), 12-40.

Rademacher (2009). 'When is housing an environmental problem? Reforming informality in Kathmandu' *Current Anthropology*, *50*(4), 513-533.

Rademacher, A. (2011). *Reigning the river: Urban ecologies and political transformation in Kathmandu*. Durham: Duke University Press.

Rademacher, A. (2015). Urban political ecology. *Annual Review of Anthropology*, *44*, 137-152.

Rademacher, A. & Sivaramakrishnan, K. (2013). Introduction: Ecologies of urbanism in India. In A. Rademacher & K. Sivaramakrishnan (Eds.) *Ecologies of urbanism in India: metropolitan civility and sustainability*. (pp. 1–43) Hong Kong: Hong Kong University Press.

Ranganathan, M. (2015). Storm drains as assemblages: The political ecology of flood risk in post-colonial bangalore. *Antipode*, *47*(5), 1300-1320.

Rebuild by Design (2015) Rebuild by Design – About. Retrieved from http://www.rebuildbydesign.org [accessed 15 June 2015].

Rice, J. L., & Burke, B. J. (2018). Building more inclusive solidarities for socio-environmental change: lessons in resistance from Southern Appalachia. *Antipode*, *50*(1), 212-232.

Robinson, J. (2006). *Ordinary cities: Between modernity and development*. London: Routledge.

Robinson, J. (2015). 'Arriving at' urban policies: The topological spaces of urban policy mobility: debates & developments. *International Journal of Urban and Regional Research*, *39*(4), 831–834.

Rolnik, R. (2013). *Report of the Special Rapporteur on adequate housing as a component of the right to an adequate standard of living, and on the right to non-discrimination in this context – mission to Indonesia.* A/HRC/25/54/Add.1 United Nations Human Rights Council. Retrieved from https://www.ohchr.org/EN/HRBodies/HRC/RegularSessions/Session25/Pages/ListReports.aspx [accessed June 13, 2018]

Roy, A. (2003). Paradigms of propertied citizenship: Transnational techniques of analysis. *Urban Affairs Review*, *38*(4), 463-491.

Roy, A. (2005). Urban Informality: Toward an Epistemology of Planning. *Journal of the American Planning Association, 71*(2), 147-158.

Roy, A. (2009). The 21st-century metropolis: new geographies of theory. *Regional Studies*, *43*(6), 819-830.

Roy, A. (2011a). Slumdog cities: Rethinking subaltern urbanism. *International Journal of Urban and Regional Research*, *35*(2), 223-238.

Roy, A. (2011b). The blockade of the world-class city: Dialectical images of Indian urbanism. In Roy, A. & Ong, A. (Eds.), *Worlding cities: Asian experiments and the art of being global.* (pp. 259–278). Chichester, UK; Malden, MA: Wiley-Blackwell.

Roy, A. (2015). Who's afraid of postcolonial theory? *International Journal of Urban and Regional Research*, *40*(1), 200-209.

Ruimte voor de Rivier. (2016). About us. *Ruimte voor de rivier.* Retrieved from www.ruimtevoorderivier.nl/about-us/ [accessed 20 May 2017]

Rukmana, D. (2015). The change and transformation of Indonesian spatial planning after Suharto's new order regime: the case of the Jakarta metropolitan area. *International Planning Studies* 20(4), 350–70.

Saldana, J. (2009). *The coding manual for qualitative researchers.* Retrieved from www.sagepub.com [Accessed 7 February 2016]

Savirani, A. (2017, June 14). Jakarta is still the oligarch's turf. *Jakarta Post.* Retrieved from http://www.thejakartapost.com/academia/2017/06/14/jakarta-is-still-the-oligarchs-turf.html [Accessed May 01, 2018]

Schlosberg, D. (2004). Reconceiving environmental justice: Global movements and political theories. *Environmental Politics* 13(3), 517–40.

Schlosberg, D. (2007) *Defining environmental justice: theories, movements, and nature.* Oxford; New York: Oxford University Press.

Sheppard, B. (2006). *Condemned communities: Forced evictions in Jakarta.* Report C1810. New York: Human Rights Watch.

Sheppard, E., & Leitner, H. (2016). Provincializing critical urban theory: Extending the ecosystem of possibilities. *International Journal of Urban and Regional Research 40(*1): 228-235.

Sheppard, E., Gidwani, V., Goldman, M., Leitner, H., Roy, A., & Maringanti, A. (2015). Urban revolutions in the age of global urbanism. *Urban Studies 52*(11), 1947-1961.

Sheppard, E., Leitner, H., & Maringanti, A. (2013) Provincializing global urbanism: a manifesto. *Urban Geography*, *34*(7) 893-900.

Sherwell, P. (2016, November 22). $40bn to save Jakarta: The story of the Great Garuda. *The Guardian*. Retrieved from www.theguardian.com/cities/2016/nov/22/jakarta-great-garuda-seawall-sinking [accessed November 23, 2016]

Sidarta, M. (1996). Jakarta Waterfront City Development. *Journal of Regional and City Planning*, *7*(21), 38-45.

Silver, C. (2007). *Planning the megacity: Jakarta in the twentieth century*. London; New York: Routledge.

Simone, A. M. (2014). *Jakarta: Drawing the city near*. Minneapolis: University of Minnesota Press.

Sneddon, C. (2015). *Concrete revolution: Large dams, Cold War geopolitics, and the US Bureau of Reclamation*. Chicago: University of Chicago Press.

Spalding, M., McIvor, A., Tonneijck, F.H., Tol, S., & van Eijk, P. (2014). *Mangroves for coastal defence. Guidelines for coastal managers and policy makers*. Wageningen: Wetlands International and The Nature Conservancy.

Spence, M. D. (1999). *Dispossessing the wilderness: Indian removal and the making of the national parks*. Oxford University Press

Stedman, L. (2014, February). Plan progress for the great Jakarta sea wall. *IWA Publishing*. Retrieved from http://www.iwapublishing.com/water21/february-2014/plan-progress-great-jakarta-sea-wall [Accessed 20 June 2015]

Swyngedouw, E. (2006). Circulations and metabolisms: (Hybrid) natures and (cyborg) cities. *Science and Culture 15*(2), 105-121.

Temenos, C., & Baker, T. (2015). Enriching urban policy mobilities research. *International Journal of Urban and Regional Research 39*(4), 841–843.

Temenos, C., & McCann, E. (2012). The local politics of policy mobility: Learning, persuasion, and the production of a municipal sustainability fix. *Environment and Planning A*, *44*(6), 1389–1406.

Temenos, C., & McCann, E. (2013). Geographies of policy mobilities: Geographies of policy mobilities. *Geography Compass*, *7*(5), 344–357.

Ter Braak, B. (Ed.). (2016). *Indonesia-The Netherlands integrated approach of future water challenges*. The Hague, the Netherlands: Netherlands Water Partnership (NWP) for the Dutch Government.

Tibke, P. (2015, January 25). A tweeting solution to Jakarta flooding. *Jakarta Globe*. Retrieved from http://jakartaglobe.id/news/tweeting-solution-jakarta-flooding/ [accessed November 22, 2016]

United Church of Christ Commission for Racial Justice (1987). Toxic waste and race in the US. A National Report on the Racial and Socio-Economic Characteristics of Communities with Hazardous Waste Sites. Retrieved from www.nrc.gov [accessed May 01, 2018]

Van den Boomen, G., & Jones, C. (2014). *The creation of a new world capital city. The great Garuda: A new perspective for Jakarta.* Rotterdam: KuiperCompagnons.

Van Voorst, R. (2016). *Natural hazards, risk and vulnerability: floods and slum life in Indonesia.* London; New York: Routledge.

Van Voorst, R., & Hellman, J. (2015). One risk replaces another. *Asian Journal of Social Science*, *43(*6), 786-810.

Van Voorst, R., & Padawangi, R. (2015, August 21). Floods and forced evictions in Jakarta. *New Mandala*. Retrieved from www.newmandala.org/floods-and-forced-evictions-in-jakarta/[accessed November 25, 2016]

Walden, M. (2017, March 28). 'Forced evictions a major issue as Jakarta goes to run-off election' March 28, 2017. Retrieved from https://asiancorrespondent.com [accessed May 01, 2018]

Walden, M. (2017, April 22). 'It wasn't just religious hatred that cost Ahok the Jakarta vote'. Retrieved from: https://asiancorrespondent.com [accessed May 01, 2018]

Walker, G. (2009). Globalizing environmental justice: The geography and politics of frame contextualization and evolution. *Global Social Policy: An Interdisciplinary Journal of Public Policy and Social Development 9*(3), 355–82.

Walker, G. (2010). Environmental justice, impact assessment and the politics of knowledge: The implications of assessing the social distribution of environmental outcomes. *Environmental Impact Assessment Review 30*(5), 312–18.

Walker, G., & Bulkeley, H. (2006). Geographies of environmental justice. *Geoforum* 37(5). 655–59.

Ward, P. J., Pauw, W. P., van Buuren, M. W., & Marfai, M. A. (2013). Governance of flood risk management in a time of climate change: the cases of Jakarta and Rotterdam. *Environmental Politics*, *22*(3), 518-536.

Wardhani, D. A. (2014, December 24). 'Governor Ahok defends eviction policy'. *Jakarta Post*. Retrieved from http://www.thejakartapost.com/news/2014/12/24/governor-ahok-defends-eviction-policy.html [accessed May 01, 2018]

Webber, M., Barnet, J., Chen, Z., Finlayson, B., Wang, M., Chen, D., Chen, J., Li, M., Wei, T., Wu, S., & Xu, H. (2015). Constructing water shortages on a huge river: The case of Shanghai. *Geographical Research* 53(4), 406- 418.

Webber, S. (2015). Mobile adaptation and sticky experiments: Circulating best practices and lessons learned in climate change adaptation. *Geographical Research*, *53*(1), 26-38.

Weller, S. A. (2009). Failure and strategic projects: Australia's Asia–Pacific vision. *Geoforum*, *40*(2), 136-144.

While, A., Andrew E. G. Jonas, & David Gibbs (2010). From sustainable development to carbon control: eco-state restructuring and the politics of urban and regional development. *Transactions of the Institute of British Geographers 35*(1) 76-93.

Wijaya, C. A. (2017, January 13). "Agus, Anies condemn Ahok for his eviction policy". *Jakarta Post*. Retrieved from http://www.thejakartapost.com/news/2017/01/13/agus-anies-condemn-ahok-for-his-eviction-policy.html [accessed May 01, 2018]

Williams, G., & Mawdsley, E. (2006). Postcolonial environmental justice: Government and governance in India. *Geoforum*, *37*(5), 660-670.

Wittfogel, K. (1957). *Oriental despotism: A comparative study of total power*. New Haven: Yale University Press.