



Planned retreat in Global South megacities: disentangling policy, practice, and environmental justice

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Abstract

The retreat of urban populations as an adaptation strategy has the potential to protect people, businesses, and infrastructure from the severe impacts of climate change. However, it can also lead to the unjust dislocation of the urban poor whose contributions to climate change are negligible but whose exposure to climatic risk is high. These groups of people also have little say in the decision-making about whether to retreat, when and how, thus raising concerns about equity and justice. In this paper, I examine the policy and practice of managed retreat and its environmental justice dimensions in Manila (Philippines) and Lagos (Nigeria) from 2010 to 2018. Expert interviews, focus group discussions, and policy documents were collected and analyzed for both cities. Findings reveal a complex picture of contradictions. In Lagos, retreat was stated in climate change policy but in practice only the urban poor were forcibly removed from waterfront areas and in their place new urban development projects are being constructed. In Manila, retreat was not mentioned in policy but evidence indicates informal settlers and national government offices were the target of planned retreat. Unlike Lagos, the urban poor in Manila were offered a mortgaged pathway to homeownership outside the city. However, the lack of livelihood opportunities in relocation sites engendered a cycle of retreat and return. This study further discusses how climatic uncertainties, property values, government distrust, utopian imaginaries, and environmental injustices served as barriers to managed retreat in both cities. The paper concludes with a call for an environmentally and socially just approach to retreat. It argues that the rights of the urban poor to the city must be taken into consideration even under complex climatic and socio-ecological disruptions.

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1 Introduction

Managed or planned retreat¹ is increasingly being advanced as one of the most important climate change adaptation (CCA) options that offer an alternative to structural protection against natural hazard risk (Linham and Nicholls 2012; Gibbs 2016; Hino et al. 2017). In simple terms, it refers to a strategic decision to relocate homes, businesses, and infrastructure from at-risk areas due to sea level rise (SLR), flooding, erosion, or associated coastal hazards (Alexander et al. 2012). Managed retreat may include policies, strategies, and practices designed to limit the use of structural protection, discourage development, or ensure eventual relocation to places with no risk or a lesser risk (Yozzo et al. 2000). As SLR and other climate change impacts become increasingly noticeable (IPCC 2018), retreat programs are likely to increase in size and frequency (Siders 2018) thus reinforcing the need to understand how they are planned and implemented as well as their environmental justice dimensions.

The retreat of people as result of environmental change and natural disasters has a long history in migration scholarship (Hansen and Oliver-Smith 1982; Boustan et al. 2012) and hazard literature (Perry and Lindell 1997; Hunter 2005; Black et al. 2011), but has gained renewed attention in the climate change adaptation scholarship. This stems from an acknowledgement that climate change impacts are not merely a technical problem to be addressed through structural protection and engineering but one that is also social, economic, and political, thus requiring changes in society's socio-spatial and demographic arrangement, development patterns, land use, housing policies, and economic systems (Adger et al. 2005; Bierwagen et al. 2010; Abel et al. 2011; Asara et al. 2015).

Studies on managed retreat have focused mostly on the Global North and have explored issues related to residents' perceptions (Ryan et al. 2011; Dachary-Bernard and Rey-Valette 2019), cost and benefits (Turner et al. 2007), barriers (Agyeman et al. 2009), policies and governance principles (Abel et al. 2011; Bell and Baker-Jones 2014), and buyouts (Marino 2018; Siders 2018). While some cities in the Global North have implemented retreat policy after a major storm, such as New York and New Jersey after Superstorm Sandy (Binder et al. 2015; Koslov 2016), others consider such policies as a proactive measure against future hazards (Niven and Bardsley 2013).

In case of the Global South, we know little about the policy and practice of managed retreat, other than forced displacement in the context of infrastructural development and post-tsunami coastal reconstruction (Modi 2009; Fernando 2018). Furthermore, much of the planning activities for managed retreat are dominated by government, urban planners, adaptation practitioners, and disaster experts, who view the issue as ecologically expedient and apolitical. Yet adaptation is never socially nor politically neutral but is shaped by power, politics, and conflicts over who gets what (Paavola and Adger 2006; Eriksen et al. 2015; Ajibade 2017). Also, the ability to adapt in situ or retreat from spaces of ecological deterioration is not solely determined by individual choices; but structured by broader political economy factors that are beyond the control of everyday people (Wisner et al. 2004). Managed retreat thus raises several concerns: when cities adopt or refuse retreat policies, whose interests does it serve? Who has the power or resources (political, legal, and economic) to influence retreat plans or to mitigate future risk? Who retreats, voluntarily or forced, and under what circumstances? Who manages retreat? And, what happens to the land/coast after people retreat? These are important questions that require rigorous examination.

¹ The words retreat, relocation, and resettlement are used interchangeably in this paper.

This paper contributes to the managed retreat scholarship in the context of the Global South. I draw on environmental justice theory to examine the policy and practice of managed retreat in two coastal megacities, Lagos and Manila. I highlight the competing perspectives within and between urban poor communities and state actors and also explore questions about the desirability of managed retreat. Furthermore, I examine whether coastal retreat can be planned in ways that do not reinforce existing socio-spatial, economic, and environmental injustices.

Following this introductory section is the theoretical framework. I draw on insights from environmental justice theory to untangle the unequal impacts and benefits of managed retreat. This is followed by the methods section which describes the data collection and analysis carried out in this study. Section 4 provides information about the study sites, climate vulnerabilities, climate change policies, and retreat practices. Section 5 discusses the environmental justice dimensions of retreat and how this intersects with other barriers to managed retreat. In Section 6, I re-examine the possibility of implementing an environmentally and socially just process and outcome of managed retreat. The paper concludes with a summary of findings, recommendations, and directions for governance of coastal adaptation and retreat in Global South megacities.

2 Theoretical framework

This section applies environmental justice lens to understand the rationale for managed retreat and its differential impacts on communities when cities adopt or “fail to adopt” retreat policies and practices.

2.1 Environmental justice theory and managed retreat

Environment justice refers to the “the fair treatment and meaningful involvement of people of all races, cultures, incomes, or education levels, with respect to the development and enforcement of environmental laws, policies and regulations” (Bass 1998). The term evolved in the 1980s in the USA where the siting of environmental bads such as hazardous waste unveiled racial and systemic injustices (Bullard 1998). More recently, scholars have applied environmental justice as a theoretical framework for analyzing the differential exposure and vulnerability of low income and minority groups to environmental and climatic risks (Cutter 2012; Maantay and Maroko 2009). Others have broadened the concept of environmental injustice to include the lack of access to environmental goods and resources such as water, energy, public transit, fresh food, and green spaces (Heynen et al. 2006; Mehta et al. 2014). These inequities in exposure and access emanate from systemic problems in the larger political economy (Wisner et al. 2004) as well as from a lack of representation and participation in decision-making institutions (Heiman 1996).

To understand the environmental justice dimensions of managed retreat, it is important to distinguish between environmental injustice in intent (*ex ante*) which tends to evolve from lack of participation (i.e., failure in procedural justice) and environmental injustice in outcome (*ex post*) which occurs as a result of blind policies or plans that do not take into account existing inequalities experienced by those who currently live on the fringe of society (i.e., failure in distributive justice) (Ikeme 2003; Scholsberg 2004). Environmental injustice in intent may occur, if certain stakeholders that are affected by a retreat policy are not allowed to participate in the decision-making process or if the underlying goal of a retreat plan discriminates against such individuals. An injustice in outcome may occur if the impacts of retreat plans and/or practices disproportionately affect particular groups of people. This can happen if such plans are not disaggregated based on impacts or if only one

specific, interest (e.g., economic growth), social class (e.g., the elite), geographic area of importance (e.g., wealthy neighborhoods), or valuation lens (e.g., market value of property), is prioritized in retreat programs or approved for in situ adaptation. In other words, the outcome of retreat or in situ adaptation is skewed in favor of a particular group, value system, class, or location.

Retreat is a highly contested CCA strategy. It can be transformative when approved through a multi-stakeholder's engagement that considers a variety of valuation lenses and socio-cultural, economic, and environmental contexts and capacities. However, it can also reinforce existing inequalities and power structures in society when carried out in a top-down narrow fashion. This paper argues, in particular, that applying a narrow valuation lens to determine retreat plans can create injustices due to the inherent failure to capture multiple views, capacities, and adaptation preferences. To illustrate, if the market value of homes/land is the main determinant for retreat, then low-income or minority communities who cannot establish the market worth of their homes may lose out even if they live in at-risk locations and support voluntary retreat. Such groups may also have limited economic, political, or legal resources to contest the decision of the state about who gets to retreat and who adapts in situ. An example is the remote tribal communities in Alaska that requested relocation because of repetitive flooding, erosion, and SLR but were denied due to a failure to meet the US market-based notion of a buyout program (Marino 2018). This injustice occurred as an outcome of a narrow valuation lens for buyouts as well as from a lack of consideration for remote communities without a functioning real estate market. Given such concerns, this paper argues that to ensure an environmentally just managed retreat, planners and policymakers need to consider how geography intersects with class, place, socio-environmental conditions, and value systems, to shape people's ability to retreat or adapt in situ.

In this study, I examine the environmental justice dimensions of retreat by exploring policy documents to determine state "intent" and then compare with practice to reveal "outcomes" in coastal areas of Lagos and Manila. The next section provides detail of the research methods used in this study.

3 Methods

Lagos and Manila were selected as study sites due to their comparable climatic, urbanization, and population challenges that warrant a consideration of retreat from waterfront areas. The methods employed in this study include qualitative interviews, focus group discussions, and policy document analysis. Key informant interviews ($n = 7$) and focus group discussions ($n = 4$; 29 participants) in Lagos were conducted from June to October 2012, while expert interviews ($n = 19$) were conducted from January to March 2016. The fieldwork for the Manila study took place in August 2018. It consisted of key informant interviews ($n = 10$), expert interviews ($n = 12$), and focus group discussions ($n = 4$; 22 participants) in Manila City and Quezon City. In both Lagos and Metro Manila, research participants were identified using purposive snowball sampling methods. Interviewees included city administrators, disaster risk experts, NGO representatives, urban planners, environmentalists, academics, local government officials, and everyday residents.

Interview data were recorded, transcribed, and analyzed using Atlati software. Content analysis was also conducted on climate change plans and policies for each city. I use pseudonyms to represent respondents in the analysis and presentation of the result. Interview transcripts were cross-checked with policy documents to gain clarity on how policy on managed retreat compared

with practice. Finally, direct observation took place at sites linked to past or future consideration for retreat (e.g., informal settlements next to creeks and flood-prone rivers in Metro Manila, and coastal waterfront communities in Lagos). Adopting multiple methods allowed for triangulation and improved reliability (Babbie 2013). The section below describes the study sites, climate change vulnerabilities, climate policies, and what occurs in practice.

4 Study sites and context

4.1 Case study: Lagos, Nigeria

4.1.1 Climate change context

The city of Lagos, sitting on the edge of the Atlantic Ocean, is made up of a series of low-lying islands, lagoons, and former mangrove swamps. This unique coastal feature made Lagos an attractive port for shipping goods and raw materials during the colonial era. Today, a high concentration of industries, banks, oil companies, hotels, and residential homes, is located near the coast along Victoria Island, Lekki, Apapa, Ajah, Ikoyi, and Lagos Island. Rapid urbanization, coastal development, and poor land use regimes have led to an increased concentration of businesses and people on the coast, with the majority of residents living in low-lying areas adjacent to water. This includes farming and fishing communities who depend on the coast for their livelihoods (Adeoti et al. 2010).

Rising sea levels, intense rainfall, and ocean surges are climate change-related risks that threaten Lagos and its population of 18–21 million (City Population 2017). The entire coast of Lagos is vulnerable to SLR due to the city's low elevation and flat topography (Fashae and Onafeso 2011). SLR of 1–2 m is projected to occur in Lagos by 2100 (Rosenzweig et al. 2018). This could increase erosion and intrusion of seawater into freshwater sources. Furthermore, frequent storm surges and coastal flooding intensified by climate change could affect industries, infrastructure, and inundate homes of over 6 million people (Rosenzweig et al. 2018).

In the last two decades, Lagos has experienced intense levels of ocean surges and flooding (coastal and inland) that prompted serious consideration of managed retreat as a disaster risk reduction (DRR) tool and a CCA strategy. A major storm event on October 31, 2005 on the coast of Bar Beach flooded and displaced thousands of people while destroying critical infrastructure (Ajibade 2017). Six years later, a combined rainstorm and storm surge on July 10, 2011 led to massive state-wide human and economic losses (Ajibade and McBean 2014), thus prompting the state to intensify efforts to establish a CCA policy on coastal risks. Prior to these extreme events, there was no CCA strategy or policy for dealing with storms and SLR in Lagos. However, existing DRR strategies consisted of shoreline protective barriers such as rock groins, beach nourishment, and dike construction.

4.1.2 Managed retreat in Lagos' policy environment

In 2012, the Lagos State Government launched two climate change documents: the Lagos State Climate Change Policy (LAS-CCP 2012–2014) and the Lagos State Climate Change Adaptation Strategy (LAS-CCAS 2012). The former requires the State to “inform the public of the risk of residing in low-lying areas threatened by SLR and storm surges, and to offer incentives for them to relocate to alternative safer locations”

Table 1 Managed Retreat in Lagos and Metro Manila Climate Change Policy

City	Year	Title	Retreat/planned relocation mentioned
Lagos	2012	The Lagos State Climate Change Adaptation Strategy (LAS-CCAS)	Yes
Lagos	2012	The Lagos State Climate Change Policy (LAS-CCP)	Yes
Metro Manila	2009	<i>The Climate Change Act of 2009</i> (RA 9729)/Act 10174	No
Metro Manila	2011	The 2011 <i>Republic Act 10121</i> (aka Disaster Risk Reduction Management Act)	No
Quezon city	2017–2027	Quezon City Local Climate Change Action Plan	Yes

(LAS-CCP 2012, p. 13). The LAS-CCP (2012) also called for the establishment of buffer zones and setbacks from the shoreline within which development projects should not be implemented. In a complementary fashion, LAS-CCAS (2012) recommends the development of a long-term plan to relocate farming communities, vulnerable settlements, transportation, industries, and energy infrastructure, to safer locations within the context of the Lagos Megacity Project.

It is not clear whether all affected stakeholders participated in the development of the LAS-CCAS and LAS-CCP. However, an analysis of the “intent” of these documents revealed no discrimination on the basis of class, geography, industry, or specific valuation lens. In the LAS-CCAS, relocation was mentioned *21 times* and references were made to a variety of groups, infrastructure, and public and private industries (Table 1). The document also identified implementing agencies responsible for these relocations and categorized the relative economic cost as high, medium, or low. For example, the Ministry of Physical Planning and Urban Development (MPPUD), Ministry of Waterfront Infrastructure Development (MWF), and the Ministry of Environment (MEnv) were jointly tasked with the duty to relocate vulnerable settlements and transportation from the coast, with relative cost estimated as “low” (p. 33). These three ministries were further mandated to reduce the expansion of socio-economic development in areas at high risk from SLR (LAS-CCAS 2012, p. 33).

4.1.3 Managed retreat in practice

Despite the numerous references to managed relocation in the Lagos climate policy documents, the practice on the ground is contradictory and undermines the chances for a successful coastal retreat.² To date, the Lagos State Government continues to invest in waterfront development and coastal land reclamation. The MWF tasked with the dual duty of relocation and urban development has increased the approval of new development projects including high-rise condominiums, shopping malls, and hotels in upscale coastal areas such Victoria Island, Lekki Peninsula, Ikoyi, Victoria Garden City, and Banana Island. Plans are also underway to build the Eko Atlantic City (EAC), the largest human-constructed peninsula on the Atlantic Ocean. This satellite city is designed as a mixed-use business and residential district that will cater to capitalist investors, economic elites, and

² I define a successful retreat as a permanent relocation that benefits humans and the environment and is achieved through negotiation and compromise among multiple stakeholders. A successful retreat would have winners and losers, but the decision to retreat is ultimately attained through multi-level agreement, meaningful participation of all stakeholders, and generous compensation for those who may lose as a result of retreat.

the transnational class. The Great Wall of Lagos, a large sea revetment, designed to protect the emerging city and reduce flooding from tropical storms, has been found to displace erosion onto communities farther along the Lekki Peninsula (Ajibade 2017). While land reclamation for the EAC commenced in 2009 before the LAS-CCAS and LAS-CCP were established, these policies have not deterred progress on the project. Instead, several new ocean cities have been approved. For example, in 2012, the State Government authorized the development of three new islands on the Lagos Lagoon within the Lekki Corridor: Diamond (48 ha), Orange (150 ha), and Gracefield-Phoenix (100 ha) (Fig. 1). These islands are reclaimed to about 1.8 m above sea level and envisioned as technologically advanced and fully self-serviced smart cities aimed at high-income groups (The Nation, 2016). As of 2019, the land reclamation for the three islands were completed while housing and infrastructural development have commenced. According to the government, these new satellite cities are expected to expand land mass and generate increased tax revenues for Greater Lagos (The Nation, 2016).

On the other hand, the Lagos State Government has intensified efforts to retreat informal settlers from waterfront locations. A year after the 2011 storms, over 200 people were forcibly removed from the land strip connecting the Lagos Lagoon to the EAC on the account of exposure to coastal risks (Ajibade 2017). However, the primary reasons why people live in such areas were not addressed. A former resident of Kuramo beach, said: “I spent so much money to build my cabin and business in this place. It is difficult to sell in the metropolis since we are not rich enough to rent a shop for N2 million or N3 million (\$8000 USD). It is risky for any human being to live between two waters, we are poor that’s why we are here. We want the government to help us because we are suffering” (Key informant, Kuramo, June, 2012). This suggests a support for managed retreat but poverty and the lack of alternative housing are major barriers for poor.

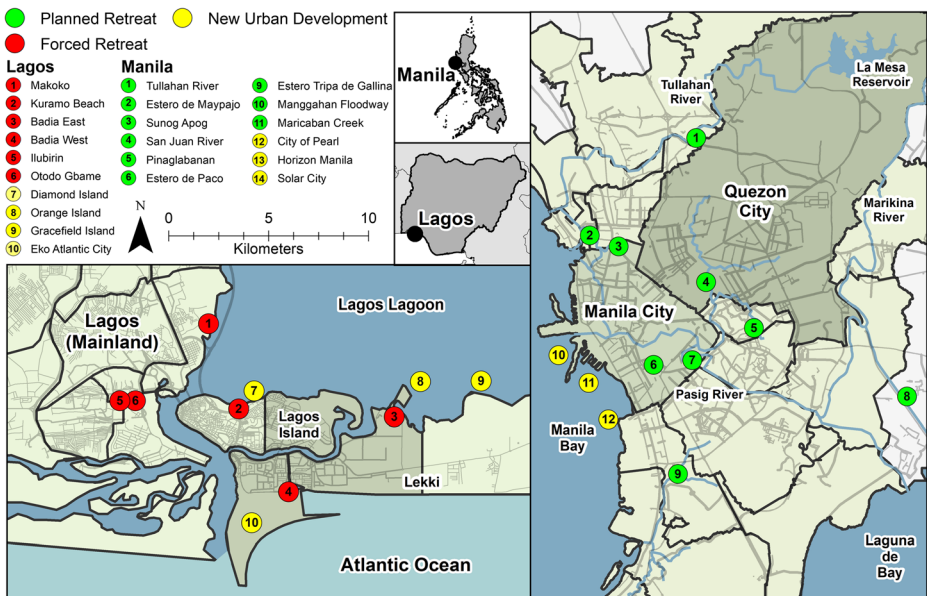


Fig. 1 Map of retreat and new urban development in waterfront areas of Lagos and Manila

Referring to the expansion of wealthy communities on the coast, a city expert said: “Sea level rise is not considered an imminent danger for Lagos. The construction of the EAC and other islands is a welcome development initiated by the government and private-developers. It will boost economic growth in the city” (City expert, March, 2016). Statements such as this reveals the state’s uneven approach to CCA and DRR. While SLR and other coastal risks are mobilized as justification to retreat the poor from waterfront areas, for wealthy communities such risks are downplayed or seen as fictitious. This double standard in retreat practices reinforces a techno-economic valuation lens that makes the retreat of the poor environmentally desirable and the advancement of the rich an economically profitable choice.

Not only do the urban poor bear the disproportionate burden of coastal retreat, evidence also show they are not included in the decision-making process about the timing and implementation of retreat. For example, in 2016, the Lagos State Governor, Akinwunmi Ambode, without prior consultation, issued a 7-day ultimatum to residents to vacate creeks and waterfronts around Makoko, Otodo Gbame, Ibeshe, Baiyeku, Ikota, Oworonshoki, Bariga, Ebute Metta, Ilubirin, Lekki Phase 1, Ajah, and Langbasa. This 7-day notice occurred during the peak of the rainy season and coincided with one of the country’s worst economic recession that triggered massive job losses and crippling social and economic activities. Following the ultimatum, the government evicted an estimated 30,000 residents from Otodo Gbame, a fishing community on the Lagos Lagoon (Amnesty International 2017). Homes were demolished with fire and bulldozers. The government taskforce also indiscriminately shot teargas and ammunition into the air chasing residents from their community. Such violent retreats are not only unjust, they also expose people to new socio-economic and physical risks.

Forced retreats are not uncommon in Lagos. They occur in many parts of the city and usually on the basis of urban renewal, city beautification, environmental health, flood control, sanitation, and crime prevention (Ajibade and McBean 2014). However, since 2012, poor communities in waterfront areas have become the sustained target of retreat while claims about protection from coastal flooding, storm surges, and SLR are used as a new justification for their eviction (Table 2). This is not surprising since urban African coasts are fast becoming the new frontier for property development and capital accumulation by local and transnational elites (Watson 2014). As this new paradigm takes hold, questions about the environmental justice of the retreat become pertinent.

Table 2 Practice: retreat of the urban poor from waterfront areas in Lagos (2012–2017)

Year	Type of retreat	Number of people	Location	Purpose	Resettlement location provided
2012	Forced eviction	200	Kuramo Beach	Coastal adaptation; DDR	No
2012	Forced eviction	30,000	Makoko	Coastal adaptation; DRR	No
2012	Threat of eviction	100,000	Makoko/Iwaya	Coastal adaptation; DRR	No
2013	Forced eviction	9000	Badia East	Flood control	No
2015	Forced eviction	10,000	Badia West	Flood control; environmental health	No
2016	Forced eviction	823	Ilubirin	Coastal adaptation; DRR	No
2017	Forced eviction	30,000	Otodo Gbame	DRR, environmental health, and crime prevention	No
2017	Threat of eviction	300,000	Otodo Gbame	Coastal adaptation; DRR; environmental health	No

Source Elebeke (2010); Morka (2012); Sahara Reporters (2012); Amnesty International (2017)

4.2 Case study: Manila, Philippines

4.2.1 Climate change context

Metro Manila is the capital region of the Philippines; it consists of 16 cities and 1 municipality. The metro area has a landmass of approximately 636 km² and it lies on the flat alluvial and deltaic plains draining the Pasig River and Laguna de Bay (Department of Environment and Natural Resources 2018). The population of the metro area is about 12.8 million people with a density of 20,000 persons per km² (Philippines Statistics Authority 2015). A large portion of the metro area lies on coastal margins, including reclaimed areas in Manila Bay. These areas experience frequent flooding from overflowing rivers and storm waters, thus revealing the inadequacy of the existing system of *esteros* (modified natural channels) and canals constructed during the Spanish and American colonial period (Bankoff 2003).

Manila is highly vulnerable to climate-related disasters such as typhoons, heavy rain, and SLR. In 2009, it experienced 10 strong typhoons that brought heavy rains flooding the entire metropolis (Porio 2011). The city's exposure and vulnerability to climatic risk are, in part, due to a combination of urbanization, population growth, and human settlement patterns. As the center of political, socio-cultural, educational, and economic activities of the country, Metro Manila attracts large in-migration and peri-urban development. This has contributed to the expansion of population along swampy areas, rivers, creeks, canals, and the *esteros* (Porio 2014). An increase of up to 1 m SLR has been observed in Manila over the past 50 years (Kahana et al. 2016). This increase is attributed not just only to climate change but also to excessive groundwater extraction and land subsidence (Rodolfo and Siringan 2006). Further destabilization of parts of the Antarctic ice sheets is expected to add tenths of a meter of SLR by 2100 (Kahana et al. 2016). Such increase may inundate low-lying areas prone to erosion and this could affect population, businesses, and economic activities in the metro area (McLeod et al. 2010).

4.2.2 Managed retreat in Metro Manila's policy environment

When Tropical Storm Ondoy (Typhoon Kestana) made landfall on September 26, 2009, it dumped over 340 mm of rain in 6 hours, flooding and crippling the metropolis and affecting 4 million people (Holden and Jacobson 2012). The storm caused about 464 deaths, \$244 million in infrastructural damages and a leptospirosis outbreak (Olan 2014). In response to Ondoy, the Philippines ratified The Republic Act 9729 (otherwise referred to as the Philippines Climate Change Act of 2009) and the Republic Act 10121 (also known as the Philippines Disaster Risk Reduction and Management Act) (DRRMA 2010). Both legislations replaced the decades old reactive framework to disaster risk management.

The Climate Change Act 2009 closely linked CCA and DRR but does not contain statements about retreat or relocation (Table 1). The 2009 Act was amended and replaced in 2011 with the Republic Act 10174, establishing the People's Survival Fund, which aims to provide long-term financing to enable the government to implement CCA projects. The Republic Act 10174 and the Republic Act 10121 together with city and community disaster preparedness plans provide a basis for DRR and CCA in the Philippines. These laws also mandate cities and local government units to establish their own disaster reduction plans and implementing councils down to the barangay level (community). In the metro area, Quezon City is the only city that explicitly mentioned managed resettlement/retreat in its climate action plan titled Quezon City Local Climate Change Action Plan (QCLCCAP; 2017–2027). This document specified the need to

relocate Informal Settler Families (ISFs) and climate refugees. Similar to the Lagos climate change policy document, QCLCCAP sets a time frame, estimated budget, and agencies responsible for managed relocation (QCLCCAP, 2017 p124). The Quezon City Council also passed a resolution (7528-2018) to prevent the forcible evictions of ISFs in the city. This resolution aims to ensure safe, affordable, decent, and humane relocation through a refined Relocation and Resettlement Action Plan (RRAP) and mechanism (Raymundo 2018).

4.2.3 Managed retreat in practice in Metro Manila

Prior to 2010, retreat practices in Metro Manila were mostly forced evictions and were not informed by DRR or CCA considerations. They were carried out on account of city decongestion, business districts construction, and infrastructural development. In some cases, residents were relocated to risk-prone areas. For example, the 9000 families evicted from Sitio San Roque to make way for the construction of the Quezon city's new business district were relocated to an earthquake-and-flood-prone area near Marikina fault line in Montalban Rizal (Ellao 2010). In recent years, Manila has made a shift towards government-funded relocation as a measure to reduce exposure to severe natural and climate-related disasters (Table 3).

Shortly after Tropical Storm Ondoy, President Gloria Arroyo, believing that ISFs occupying Metro Manila's waterways prevented rainwater from washing out to Manila Bay, ordered the implementation of MMETROPLAN, a World Bank-funded development plan dating back to 1977 to rid Metro Manila of tens of thousands of ISFs (Alvarez and Cardenas 2019). The plan involved giving the equivalent of 60 days of minimum wage to beneficiary families in exchange for leaving the city and returning to the province. The revival of this plan in the context of climate change facilitated the swift relocation of 1286 families to outer suburbs and the transfer of an additional 269 to villages (NDCC 2010). This relocation process was reformulated 3 years later by Benigno Aquino through Oplan LIKAS—a P50-billion housing and resettlement program that targeted approximately 120,000 ISFs living within a 3-m zone of waterways in urban areas (Galuszka 2019). The Oplan LIKAS involved a working partnership between Department of the Interior and Local Government (DILG), the National Housing Authority (NHA), Social Housing Finance Corporation (SHFC), and Informal Settler Families National Technical Working Group (ISF-NTWG), which consisted of representatives of civil society groups, local authorities, and ISFs. This joint effort led to the retreat of thousands of people and the construction of a total of 89,219 housing units (In-city 9858 and Off-city 75,222) in Bulacan, Cavite, and Rizal (Galuszka 2019).

While the main target of resettlement has been ISFs, the national government also plans to retreat its administrative offices from Metro Manila to New Clark City as part of its disaster management strategy. The goal of this retreat is to decongest Manila and to ensure effective response from government agencies during disasters. The House Committee on Housing and Urban Development (HCHUD) has approved a substitute bill that supports this move for a planned community (De La Cruz 2017). Construction in New Clark City has commenced with new roads, sports complex, government offices, and employee housing expected to be ready in time for the Southeast Asian games in December 2019. The New Clark City is anticipated to accommodate up to 1.2 million people when completed in the next 30 years.

A striking similarity between Lagos and Metro Manila is the government's approval of new land reclamation and utopian-styled development in waterfront areas. Between 2017 and 2019, Joseph Estrada, the Mayor of Manila City (with consent from the Duterte administration), announced four new cities to be constructed just off the coast of Manila Bay, in stark contrast

Table 3 Practice: retreat of urban poor from waterfront areas in Metro Manila (2013–2017)

Year	Type of retreat	Number of families	Retreat Location	Purpose	Resettlement location
2013	Planned relocation	5000	San Juan	Clearing of San Juan River	Bulacan
2013	Planned relocation	2000	Estero de Paco	River restoration and revitalization	Calauan, Laguna
2013	Planned relocation	120,000	Tullahan River, Manggahan floodway, Maricaban Creek, Estero Tripa de Gallina, Pasig River, Estero de Sunog Apog and Estero de Maypajo	Disaster risk management, environmental health, climate adaptation (relocation from waterways)	Smokey mountain, Valenzuela City, Caloocan City, Bulacan Rizal, Cavite
2014	Planned relocation	300	Pinaglabanan	Disaster risks management (relocation from waterways and danger areas).	In-city relocation San Juan City
2017	Planned relocation of national government offices	Unknown/plan in progress	Metro Manila	Effective disaster response and city decongestion	New Clark City

Romero (2013); De La Cruz (2017); Alvarez and Cardenas (2019)

to its retreat goals. These include: City of Pearl (407.42 ha), Solar City (148 ha), Horizon Manila (140 ha), and Manila Waterfront City (318 ha) (City Government of Manila 2017; Inquirer 2019) (Fig. 1). These cities are designed as high-tech smart cities with first-class hotels, medical centers, casinos, amusement parks, and entertainment facilities including a port for international cruise ships. Similar to Lagos, these cities are meant to stimulate economic growth through increased tourism, businesses, and job creation, thereby increasing tax revenue for the metro area. Environmentalists and social activists have criticized these projects, contending they are not sustainable and will put local communities at risk of increased flooding (Talabong 2017).

5 Discussion: Barriers to wider support for managed retreat in Lagos and Manila

5.1 Property values and uncertainty about future risk

While information and data on coastal risk have increased in the last decades (Nicholls and Cazenave 2010; Jevrejeva et al. 2014), there are significant uncertainties and knowledge gaps about how and when things will play out on the ground, thus making large-scale retreat politically difficult. In both Lagos and Manila, land reclamation and coastal development have increased, in part, because the benefit of retreat may not be accrued for many years, while the value of real estates in such areas are likely to rise exponentially. For example, properties on Banana Island and Lekki have the highest real estate value in Nigeria. Homeowners in these locations consider the economic and aesthetic benefits of such properties to outweigh coastal threats, thus favoring structural reinforcement over “safer geographies.” A property owner in Lekki said “the prestige of living in the wealthy area of the coast has aesthetic and sentimental value that most residents are not willing to give up, even if this may not be a safe choice during disaster” (Rachel, Lagos interviewee, September 2012). In Manila and Lagos, elites in highbrow coastal areas do not only have the political power to challenge retreat, they also have the economic means to recover in the event of disasters. These factors constitute a barrier to managed retreat.

5.2 Environmental injustice and government distrust

Environmental injustice and the distrust of government are the biggest barriers to manage retreat in Lagos and Manila. In Lagos, injustices in the “outcome” of retreat occurred through forcible evictions from waterfront areas and through the replacement of the poor with new development structures. Evictions can be devastating, often resulting in homelessness, livelihood loss, family separation, interruption in education, loss of social support systems, and erosion of resilience - as seen in the case of Otodo Gbame community (Amnesty International 2017). Women and children also tend to suffer more from such state-induced violence (Ajibade and McBean, 2014). Furthermore, communities such as Makoko and Otodo Gbame have traditionally lived with water and are accustomed to the risks and opportunities associated with a riparian lifestyle. Evicting these communities without consideration for their socio-economic and cultural dependency on coastal-based livelihoods constitutes an environmental and social injustice. Such forced evictions also conflict directly with the mandate to “offer incentives for relocation to alternative safer locations” stated in the LAS-CCP (2012, p. 13).

Environmental injustices in retreat were also found in Metro Manila but the concerns were different and perhaps less alarming compared to Lagos. Since 2013, there has been a shift

from forcible eviction to government-funded relocation —mostly to off-city social housing in remote locations (Table 3). This retreat targets mainly ISFs but not middle-income or upper-income residents occupying waterfront areas. For example, the local government in Pasig City and Manila City neither demolished nor evicted gated communities, condominiums, or elite enclaves obstructing waterways after Tropical Storm Ondoy. Rather, they built, repaired, and upgraded drainage systems and other infrastructure in these areas (Alvarez and Cardenas 2019). This raises concerns about who is marginalized through retreat practices and who is facilitated through investment in resilient infrastructures.

Since the introduction of the government-funded resettlement program, some ISFs in Metro Manila have worked with designated agencies to facilitate relocation to out-of-city social housing but others have rejected this plan due to the loss of attachment to place, break in community ties, and the lack of livelihood opportunities in resettlement sites. Tony, a resident of Silangan, Quezon City, said: “As long as we have a place to be transferred, we’re fine. But of course, we want where there are jobs. Because if you transfer to a far place and you can’t eat anything, you will die there too” (Tony, interviewee, August 26, 2018). Tony’s comment raises an important issue about immediate survival needs compared with protection from future climatic disasters. For him, both risks require attention and neither trumps the other.

Martha, a mother of four children, who lived in Quezon City for over 20 years, rejected the idea of managed retreat, she said: “We don’t want to be transferred because our livelihood is here, we have everything here, our children study here” (Martha, interviewee, August 22, 2018). Emphasizing these concerns, a Quezon City administrator said: “One of the concerns of these communities, is where the relocation site is supposed to be, it is not complete, it’s far from their employment, there are no schools, water supply, and the government cannot provide these all at once, or in a year. That’s the problem. There are plans to relocate people in Payatas, they will be relocated outside of Quezon City and Manila City. How about the economic needs of these people? How about transportation and schooling needs of their children? That for me is a disaster, because there are no social services.” (Esther, expert interview, August 20, 2018).

These comments speak to the personal struggles of the urban poor that are often missing from the managed retreat discourse. It suggests that successful retreat requires a holistic approach. Carrying out relocation in a humane manner is not enough, basic needs such as jobs, schools, hospitals, transportation, and clean water, must also be met or at least planned for in resettlements sites. The environmental justice concern in this case is about access to resources. Indeed, the distinction between those who stay in the city and those who leave matters. Those that stay will have access to livelihoods, social services, and the cultural dynamism that the city offers, but those that leave may lose access, thereby undermining their rights to the city—a right which Harvey (2003) described as an inclusive right to live, participate, and shape the city, even as it undergoes multiple crises and transformation.

5.3 Cycle of retreat and return

In both Lagos and Manila, the compounding effects of environmental injustices and the lack of social support engendered a cycle of retreat from and return to vulnerable areas. In Lagos, some of the evictees from Otodo Gbame community returned to their canoes on the Lagoon, while some moved to other crowded waterfront slums in Apapa, Ajah, Makoko, and Badagry (Sahara Reporters 2018). This return of the poor to waterfront slum communities is further reinforced by the lack of government-funded resettlement in mainland Lagos. In Manila, government-funded relocation allowed people to retreat, but this was short lived as several

ISFs returned to the metro area due to the lack of livelihood opportunities and social amenities in resettlement sites. For example, many ISFs that relocated from Silangan to Bulacan and Pandi in 2013 have returned to Silangan. The NHA gave these families P18,000 (\$342 USD) as an incentive for transfer and also provided social housing at the resettlement sites. But many returned after several weeks. Marcus, a returnee from the resettlement site in Pandi said: “In the resettlement location, we do not pay mortgage for one or two years but after that, you have to pay. There are no jobs in Pandi, I cannot pay the mortgage, but you can earn a decent wage in Manila to pay mortgage or rent” (Marcus, Silangan Interview, August 24, 2018). Marcus further described the life in Pandi as difficult, expressing that he prefers the Manila slums over being a homeowner in a place with fewer social services and no livelihood opportunities.

Apart from people like Marcus, there are other individuals in Manila City called “professional squatters” who make a living from a cycle of retreat and return. First, they apply for social housing during retreat process, and then, they sell the house and return to Manila to live in the slums. This profit-motivated retreat and return undermines the efficacy of government-funded retreat. To combat such practices, the Philippines government has created a new identification process that requires ISFs (that qualifies for resettlement) to have their photos and fingerprints taken as part of a biometric database on social housing (Castañeda 2013). Through this new measure, the government is able to track recipients of housing programs and ensure they will no longer squat in Manila or avail themselves of the government housing program. While this may partially reduce the cycle of retreat and return, there is little effort to address the economic roots of the problem.

5.4 Land reclamation, utopian imaginaries, and valuation lens

On-going land reclamation and ultra-modern cities construction on the coast of Lagos and Manila do not only constitute a barrier to retreat, they also produce new risks of their own. By converting coastal flood plains, mangrove swamps, and lagoons, into solid ground, these projects will reduce the city’s capacity to absorb, filter, and drain water during extreme rain events. Increase urbanization and human activities associated with these mega-development projects will translate into rising pollution, shoreline erosion, biodiversity loss, fishery depletion, change in water flow, and reduced ecological resilience along the coast. Furthermore, path dependencies arising from such projects could also make it harder and costlier to relocate people, assets, and infrastructure in the future. In addition, increase financial investment and mitigation measures will be required to sustain such in situ adaptations as climate change and anticipated SLR become more evident.

Central to the debate about reclamation and new city construction vs. retreat is the question of value and the valuation lens for assessing acceptable coastal adaptation. Capital gains (real and anticipated) from new city constructions appear to be valued over and above equity in adaptation planning. To validate this prioritization of “new cities over poor people,” government, private investors, and city planners in Lagos and Manila mobilized a techno-economic rationale to frame and justify such cities as “spaces of resilience” decoupled from concerns of climate change, SLR and coastal flooding. Yet, these threats are weaponized to remove the urban poor from coastal areas while ostensibly constructing them as “vulnerable.” By implication, using a techno-economic valuation lens as the standard for adaptation effectively erases the innovation and cultural adaptiveness developed by poor communities over decades of living with water, thereby legitimizing their transfer to less economically desirable locations. As shown in this paper,

environmental injustices are thus entangled with the question of who gains and who loses access to economic opportunities when retreat and reclamation are simultaneously implemented as adaptation strategies for different socio-economic classes.

6 How can environmentally and socially just retreat be achieved?

The policy and practice disconnection arising from a top-down approach to retreat as well as the intra-group inequalities and gendered impacts that may arise in future points to the need for a deeper reflection about what is required to ensure an environmentally friendly and socially just managed retreat. There are no easy answers to this question. However, some lessons can be drawn from the example of the awarding-winning Pasig River Restoration project in Manila. The project focused on reconstructing the relationship between people and the river using an anticipatory governance approach that connected concerns for environmental justice with long-term socio-ecological sustainability. The 27-km Pasig River was declared biologically dead in the 1990s due to persistent pollution caused by population growth and industrial development along its river bank (De Leon 2018). In 1999, a Rehabilitation Commission was established to lead the revival and restoration of the river. The Commission worked with the community to relocate 18,719 families living along the riverbanks to decent homes. It established 37,471 linear meters of environmental preservation areas, retrieved solid waste, improved water quality, and dismantled 376 encroaching private structures (De Leon 2018). To achieve this feat, The Asian Development Bank gave the Philippines government a \$200 million loan to implement a 15-year slum upgrade program in Metro Manila including the rehabilitation of the Pasig River. The loan was issued under the conditions that the relocation and livelihood of ISFs have equal importance as the environmental aspect of the rehabilitation. Success took over 10 years and required public-private partnership combined with citizen education, multiple-level governance and cooperation, cultural and behavioral change, and a strong buy-in from everyday people. This extensive planning and robust cooperation and coordination with multiple actors and groups ensured a sustainable retreat from the river. The experience also transformed communities into environmentally responsible citizens (Pedrosa 2018).

There are some commonalities between the Pasig River restoration project and the New Clark City retreat plan. Both involved a legislative approval, extensive consultation with affected stakeholders, cost-benefit analysis, and a thoughtfully planned relocation process. In the case of Clark City, the government is investing in the construction of quality housing, education centers, parks and gardens, sports facilities, and upscale social amenities, including light rails connecting Clark to Metro Manila and to Naia Airport (De La Cruz 2017). This holistic approach to retreat can address the concerns of the urban poor if their relocation from waterfront areas is planned in a similar fashion.

7 Conclusion

The planned retreat of urban populations, infrastructure, and businesses is increasingly being adopted as a DRR tool and viable CCA option in megacities of the Global South. Using Manila and Lagos as case studies, this paper examined the policy and practice of managed retreat and its environmental justice dimensions. Findings reveal there was little to no mention of managed retreat in policy documents in Manila (with the exception of Quezon City), while Lagos clearly specifies

retreat as a core consideration in its climate change policy and adaptation plans. The Lagos CCA policy does not discriminate in its intent on coastal retreat. However, in both Lagos and Metro Manila, current practices on managed retreat tend to disproportionately burden the poor, howbeit in different ways. In Manila, the high rate of unemployment and the lack of livelihood, transportation, healthcare services, and schools in government-funded resettlement sites constituted barriers to ISFs permanent retreat. For the urban poor in Lagos, the challenge was forcible evictions and the lack of government-funded resettlement. In both cases, the government took the path of least resistance by targeting the poor for retreat rather than all social classes living along waterways.

As the poor retreat from the waterfront, new urban developments are approved for construction in these areas. In Manila and Lagos, the state's desire to boost economic growth and generate high property tax underpins this construction of new shiny enclave cities but the cascading consequences are likely to be polluted water, increased flooding, and locked-in development pattern that could undermine retreat in the future. The scenario in Lagos and Manila thus affirms the inseparability of climate adaptation from the economic, cultural, political, environmental, and developmental contexts in which it takes place. Urban development decisions are too often influenced by political motives and commercial consideration at the detriment of the environment and the poor. State actors often do not comply with environmental regulations and tend to bend rules in favor of local elites and transnational capitalists. These problems coupled with climatic uncertainties create a trust deficit on managed retreat, thus making it a difficult CCA option and an environmental justice conundrum. Furthermore, the re-configuration of waterfront areas as a result of retreat and reclamation is shifting the regimes of rights and opportunities available to different communities and socio-economic classes, thereby creating winners and losers. As climate change impacts in waterfront areas become more evident, megacities across the Global South may have to initiate expansive retreat programs. To achieve this, the following are required: improved knowledge on coastal risks and hazard assessments; increased citizen education and buy-in on retreat plans; equity in decision making about when and where to retreat; robust support for resettlement (financial, social and political); access to livelihoods opportunities and social services in resettlement sites; and cooperation among multiple stakeholders and government agencies.. More importantly, vulnerable groups, particularly, the urban poor have to be represented at the discussion table—their voices and needs must be made a priority even under complex climatic, economic, and socio-ecological transformation.

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