



Maintaining a city against nature: climate adaptation in Beira

JON SCHUBERT

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ABSTRACT

The port city of Beira, on Mozambique's Indian Ocean coast, was devastated by Tropical Cyclone Idai in March 2019. Ever since, a host of unequal international and national actors have been wrangling about the best forms to 'build back better', with uneven and socially and spatially unequally distributed results. The institutional set-up and concomitant challenges of making adaptation work are described in a context where the pressures of both growth-based development and climate change mitigation are particularly manifest. In particular, the tensions are explored between political and economic imperatives and the seemingly apolitical, technical best practices advanced by Mozambique's bi- and multilateral donor partners, as well as the complex infrastructural and economic interdependencies that condition urban planning and development. Through this, the very real constraints of transitioning to climate-resilient cities are demonstrated, along with how most of what turns a climate event into a human disaster sits within highly unequal social, political and economic systems.

POLICY RELEVANCE

Empirical, ethnographic material gathered from the post-cyclone reconstruction process in Beira, Mozambique, shows how institutional complexities and political rivalry limit the possibilities of reconstruction. These organisational issues impact more than technical or financial challenges. 'Best practices' of 'building back better' are almost rendered moot by socio-economic and political constraints, revealing the substantial challenges of implementing large-scale, technically 'best practice' reconstruction programmes. The analysis of the factors that contributed to making Cyclone Idai such a calamitous event holds important lessons for climate adaptation and disaster reconstruction in coastal cities, especially for those operating in challenging political and economic conditions.

CORRESPONDING AUTHOR:

Jon Schubert

Division of Urban Studies,
University of Basel,
Spalenvorstadt 2, 4051 Basel,
CH

jon.schubert@unibas.ch

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1. INTRODUCTION

Extreme weather events such as floods, droughts, hurricanes, heatwaves and fires are increasingly wreaking havoc around the globe. The climate crisis is evident, and a rapidly shrinking window of time exists for mitigation. In the meantime, adaptation to the changed and changing circumstances are necessary. Both this larger turnaround and concrete adaptation and mitigation strategies to the crisis will by necessity be urban. Most predictions forecast that, by 2050, two-thirds of the world's population will live in cities (United Nations Department of Economic and Social Affairs 2019), making cities both a major driver of climate change and a key factor in seeking to mitigate it. And most of that growth will be concentrated in large and mid-sized cities of the global south, especially in Africa (OECD/SWAC 2020).

Solutions that are bandied about for how cities should face the climate crisis: there is talk of building a sea wall for New York City and constructing new flood gates for the River Thames to protect London, and promises of electric vehicle individual mobility and 'smart' green cities that will usher in new, utopian urban futures (see e.g. Dawson 2019 for a critique). Yet, for 90% of the world's population, such capital-intensive techno-utopias remain out of reach. The reality of climate change, in most places, is evident, and it does *not* look like the architectural renderings or the social media fantasies of venture capitalists.

Rather, it looks like Beira (Figure 1), a secondary port city on Mozambique's central Indian Ocean coast, where people are living with and trying to address a series of interconnected challenges that make the reality of the climate crisis manifest.



Figure 1: Location map of Beira in the sub-region.

Source: Drawing by author, adapted from Google Maps.

On 15 March 2019, Tropical Cyclone Idai made landfall in Beira. With windspeeds of up to 195 km/h and gusts of over 250 km/h, the cyclone created a storm surge (flooding) of 4.4 m in the city. Damages and losses to Beira and the surrounding rural municipalities were estimated at US\$2.9 billion, with 290,000 families affected by totally or partially destroyed habitations, according to the Post-Cyclone Reconstruction Office (Gabinete de Reconstrução Pós-Ciclone, GREPOC) Post-Disaster Needs Assessment (GREPOC 2019). Or, in the less technical terms of my interlocutors, it was 'like in a movie', or 'like the Bible says, the end of times': 'we had a warning but no one was counting on such a thunderous thing'. Ever since the most immediate humanitarian emergency response ended, a plethora of actors ranging from large bi- and multilateral donors to government and private actors, to individual citizens have been engaged in trying to 'build back better', in the parlance of the World Bank.

This article describes the institutional set-up and concomitant challenges of making adaptation work in a context where the pressures between growth-based development and climate change mitigation are particularly manifest. In particular, the article explores the tensions produced by Beira's precarious political position as an opposition-held city in Mozambique's dominant-party system, the seemingly apolitical, technical best practices advanced by Mozambique's bi- and multilateral donor partners, and the complex infrastructural and economic interdependencies that condition urban planning and development – chiefly the imperatives to develop the port and connected logistics zones. Through this, the article aims to demonstrate the real existing constraints of transitioning to climate-resilient cities and how most of what turns a climate event into a human disaster sits within highly unequal social, political and economic systems.

The article is structured as follows. The next two sections provide a brief methodological and conceptual overview. Then the geographical and infrastructural context is presented along with the economic dynamics that shape the reconstruction process. Next, ethnographic findings are presented that illuminate the political and institutional conditions that inform and constrain climate adaptation in Beira. The constellation of actors involved in reconstruction and climate adaptation is presented in order to probe whose ideas and positions are heard and implemented. A final section considers habitation reconstruction projects in progress by these actors.

2. METHODS

This article is based on two and a half months of ethnographic fieldwork (in 2022 and 2023) from an ongoing research project on urban adaptation to climate change in four African coastal cities, and is also informed by previous ethnographic research in Mozambique (Schubert 2020). This included expert interviews with planners, architects, builders, and NGOs/activists engaged in resilience work, as well as unstructured and semi-structured interviews with residents of select neighbourhoods of Beira, both in the core city and in the semi-formal expansion zones; biographical/narrative interviews with key individuals, to understand weather patterns and climate-related disasters in the *longue durée*, and set the changes to the built environment in their historical and cultural context; photography and drawing; and participant observation, which includes shadowing the everyday routines of the aforementioned key actors, partaking in activities of work and leisure, and the observation of debates and interactions.

In addition to such tried and tested ethnographic methods, research included an element of participatory research for which the author taught an ethnographic research practice module to fourth-year anthropology students at the local, public Universidade do Licungo. Here students discussed and decided together on the choice of neighbourhoods they wanted to go to and make observations and carry out interviews. Accordingly, the author's own observations and interviews from select areas of the city – mainly the central formal zone of Ponta Gêa, the central informal zones of Goto, Chipangara and Praia Nova, and the expansion zone of Manganhe – are bolstered by findings reported by the students from informal areas like Ndunda 2, Praia Nova, Munhava Matope and Munhava Central, Chipangara and Palmeiras.

3. DISASTERS ARE POLITICAL

Political ecology, critical geography and anthropology scholarship have long demonstrated that there is no such thing as a 'natural disaster'. Rather, disasters are a result of the interaction of social, political, economic and environmental factors, of longer histories of social and political inequalities (including class, race/ethnicity and gender), which are more starkly revealed and reconfigured in a disaster and its aftermath (Barrios 2017; Faas & Barrios 2015; Hewitt 1983; Smith 2006; Wisner *et al.* 1976). An increasingly unequal world is shaped by the networks and systems of transportation, communication and energy that were left over from colonisation.

The social connections underlying urban infrastructure change become apparent during times of crisis, and underlying power geometries are revealed (McFarlane & Rutherford 2008: 368). For instance, it has been convincingly demonstrated that the 2015 floods in Chennai, India, far from

being a ‘natural’ and ‘unprecedented’ disaster, were the result of decades of capitalist planning and uneven urban development (Arabindoo 2016; Bremner 2020); Hurricane Katrina in New Orleans (USA) exposed not only cycles of privatising and underfunding of crucial flood defence infrastructure but also the systemic racism that shaped the city’s socio-spatial layout (Kolb 2006; Lakoff 2006); and when debt-ridden Puerto Rico was struck by Hurricane Maria in 2016, climate change and US politics combined to create a ‘hurricane bomb’ that starkly revealed Puerto Rico’s continued colonial status to its inhabitants and fundamentally altered relationships between the state and its citizens (Ficek 2018a; Ficek 2018b; see also Schuller 2012 for Haiti). Such critical scholarship has criticised policies and initiatives that use unquestioned, reductionist and reified concepts of ‘vulnerability’ and ‘resilience’ to reduce vulnerability and increase resilience (Barrios 2016; Cretney 2014; Mikulewicz 2019).

What the case of Beira below will show is that there is indeed a disconnect between a set of actors with some financial capacity that adhere to such a more reified, technical understanding of resilience-building and the sociopolitical realities of Beira and Mozambique more broadly. This divide is proving hard to bridge, which shows parallels with existing anthropological critiques of development programmes and processes more generally (e.g. Ferguson 1994; Mosse & Lewis 2005; Murray Li 2007). Moreover, an infrastructure-centric understanding of resilience-building obscures practices of everyday living with the climate that are often made invisible in urban planning and policymaking (Castán Broto 2022). Providing a fine-grained and unvarnished analysis of the power asymmetries and constraints that undergird adaptation and rehabilitation programmes can then be a first step towards unmaking them.

4. GEOGRAPHICAL CONTEXT

Beira is a city that should not be there. It has everything a city should not have: it is low-lying, flat, and with impermeable soils; it is exposed to significant rains and tides of 7 m. Climate change exacerbates and intensifies this.

(Engineer Gonçalo)

‘This is my personal opinion,’ he added, and not the position of the consortium of international engineering consultants he represented, which was contracted to plan the second phase of rehabilitation of drainage canals. And while Gonçalo’s point of view – that the city should gradually be moved – represented one far end of the spectrum of opinions, it was clear that the geographical, political and socio-economic context made urban planning and resilience-building a particular challenge.

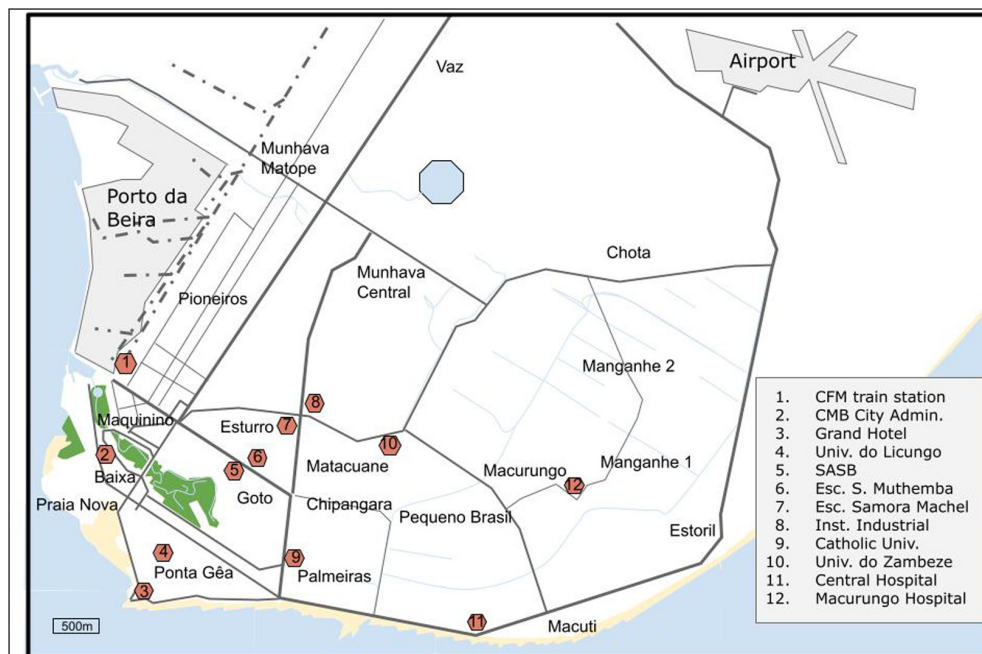


Figure 2: Map of central Beira.

Source: Drawing by author, adapted from Open Street Maps.

Indeed, Beira is a relatively recent city, created not from a pre-existing settlement but one that started as a small military outpost established in 1887 on a mudflat bordered by a shifting sandspit at the mouths of the Búzi and Púnguè rivers. However, it grew quickly to a major regional port and commercial hub as a consequence of the creation, in 1891, of the Companhia de Moçambique (Amaral 1969). This was a largely British-funded, chartered company that received a lease for the then districts (now provinces) of Manica and Sofala, and was tasked and entitled to order and develop the territory. In addition to agricultural exploration inland, this included chiefly the construction and operation of a railway line, linking the rapidly expanding port of Beira to the hinterland and to neighbouring Rhodesia (Amaral 1969; Direito 2020; Lazzarini 2023).

In addition to the vital transport link, Beira also became a popular destination for holidaymakers from landlocked interior areas (Lazzarini 2023: 6–7). So, from the beginning, there was substantial economic and political interest in developing this city, even though it was in an area that was unsuitable: below sea level, flat, and where the soils are either swampy, with groundwater levels as high as 50 cm, or, as the engineer said, impermeable. Accordingly, when Idai hit, it created an ‘inland ocean’, completely flooding the city and the neighbouring districts of Dondo, Nhamatanda and Búzi.

4.1. INFRASTRUCTURAL CONTEXT

As in many colonial contexts across Africa, Beira (Figure 2) was also divided between a core developed city (*cidade de cimento*), reserved for the white population, and the surrounding indigenous quarters, called ‘reed city’ (*cidade de caniço*) in Mozambique (Morton 2019; Noormahomed 2022; Sumich & Nielsen 2020). The legacies of this kind of socio-spatial stratification, or ‘dualist structure’ (Barros *et al.* 2014), which not only defined the quality and style of housing but also the infrastructure and services available, shape the functioning of the city to this day. In the colonial developed core of the city, there are (largely) tarmac roads and a separated sewage and drainage system, surrounded by extensive expansion zones, both planned and unplanned, where water management is a much more improvised affair.

In either situation, the maintenance of this drainage and sewage system is a constant preoccupation. The city’s sanitation service was transformed in 2008 from a branch of municipal administration to a state-held company, the Beira Autonomous Sanitation Service, or SASB by its Portuguese acronym (Muradás *et al.* 2021). The sewage system (wastewater) was upgraded between 2008 and 2012 with EU funding, which included the installation of electric pumps at 11 pumping substations – the city is so low-lying that there’s not enough depth to move water by gravity, like in other Mozambican cities. The wastewater treatment plant was also damaged by Cyclone Idai and is being rehabilitated between 2023 and 2026 with funding from the French Development Agency (Agence Française de Développement n.d.).

The rainwater drainage system was also upgraded (Figure 3), with the first phase of rehabilitation completed just before Cyclone Idai hit. And, still, the system was overwhelmed, with power cuts meaning that the tide locks had to be operated by hand – and this, as residents and sanitation engineers would convey, was at low tide. If the cyclone had hit at high tide, the catastrophe would have been much, much worse. Yet, while the second phase of rehabilitation was slated to start at the end of 2023, with US\$120 million of joint funding by the Dutch government and the World Bank (Henriques 2023), the reality of trying to keep that system functional is insufficiently expressed by the mapping and planning exercises of civil engineers and donors.

Rather, it looks like a typical work day for the SASB cleaning brigades, who try to make the most of the mornings, before the temperatures get too hot, to manually clean out the gutters and manholes – work that is, in theory, planned in advance and according to seasonal rainfalls, but in practice looks ever so much like unblocking the pipes *ad hoc* wherever a blockage occurs.

Or it looks like life in the informal, central neighbourhood of Goto, where Luciano, in his early twenties and out of school and out of a job, semi-regularly cleans out the drainage canals with three or four other youths to try to prevent worse floodings. Some of the smaller canals have been cased in concrete by the municipality, with more or less regularly placed slab covers, but the casing often runs out at the point where the budget ran out, and hand-dug canals take over.



Figure 3: Drainage canals in Goto.

Source: Author.

More problematically, the lanes here are too narrow for vehicle access, and the collection points at the perimeter of Goto often too sparse and far away for the everyday convenience of residents, and, although people often dig their own rubbish pit in the yards of their self-built cement brick houses, the canals are clogged.

There is stagnant water everywhere, sometimes turning green with mosquitos buzzing above the surface. In most places, the air is stagnant and the stench of black water is overpowering. The incidence of waterborne diarrhoeal diseases is very high here.

The irony of this is that Goto is literally abutting a section of Beira's 'Green Infrastructures' – a showcase project of mangrove reforestation along the River Chiveve, complete with publicly accessible, but fenced off, leisure facilities (Figure 4). Publicly accessible, that is, for the symbolic entrance fee of 20 mt (about GB£0.15), which, I was told, 'already keeps a certain category of people out' and prevents the installations from degrading too quickly.



Figure 4: Section of the Green Infrastructures park, with Goto fenced off to the right.

For many I spoke to, these Infra-Estruturas Verdes, a showcase project of the late and venerated former mayor Daviz Simango, are the only visible resilience enhancement in Beira – and that was planned and completed just before Cyclone Idai. The mangroves help absorb tidal water and rainwater, and the landscape park serves to teach city residents about the importance of nature conservancy but, with the linkages from hand-dug and rubbish-clogged tertiary *valas* to a main drainage outlet like the Chiveve so precarious, the spatial and social inequality is indexed quite visibly by the levels of flooding and the speed of drainage during the rainy season.

4.2. INFRASTRUCTURAL INTERDEPENDENCIES

In addition to the challenges of managing pluvial and wastewater, Beira is marked by infrastructural interdependencies that decisively delimit its economic horizons, and thus the possibilities of building resilience in the city. Focusing, as development practitioners tend to do, on the multiple and real existing challenges of unplanned (or incoherently planned) urban extension into flood-prone areas will reveal a cluster of issues, from drainage and sanitation to waste management, to building materials and standards, and general socio-economic deprivation (see the previous section). It is worthwhile highlighting the role and weight of the port and of extractivism in shaping the development trajectories of Beira.

The Port of Beira was historically, and still is, the main driver of urbanisation in the city. Owned by the Mozambican Railway Company (Caminhos de Ferro de Moçambique, CFM), its cargo terminals are operated by Cornelder de Moçambique S.A., a consortium formed between CFM and the Dutch Cornelder Holding B.V., which in 1998 obtained a 25-year operating concession.

With the concession up for renewal in 2024, the port has ambitious expansion plans, including the construction of a new access road that would bifurcate off from the main entrance road to Beira (the EN6) and help decongest this existing road, which is currently beset by long lines of lorries waiting to use the existing turnoff to the port at Munhava. Along the planned new road, an industrial zone of logistics warehouses would be built, making this a prime real estate development area.

One of the questions this raises is about the synergies between the port development plans and Masterplan Beira (van Weelden 2013), elaborated by a consortium of Dutch consultancy firms. Should these synergies be viewed as instrumental? Was the port expansion and new access road recommended in the masterplan to adapt the city to changing weather patterns or rather to serve Dutch commercial interests (via Cornelder de Moçambique)? Is this a case of disinterested, technical ‘best practice’ seeking to ‘avoid the human influence’, or should this be viewed as a ‘trans-local initiative aimed at securing Dutch influence abroad’ (Shannon 2019: 397)? While deliberately leaving this question open here, it should be noted that the continuities between contemporary ‘master planning’ and colonial urban and corridor development plans (Harrison & Croese 2023; Kirshner & Baptista 2023; Lazzarini 2023) are equally manifest in Beira.

The creation of a land development company, suggested by the masterplan, was put into practice in 2018, when the Beira Urban Development Company was constituted. SDUBeira (Sociedade de Desenvolvimento Urbano da Beira) was created with the support of the Netherlands Enterprise Agency (Rijksdienst voor Ondernemend Nederland, RVO) to attract investors and channel these funds into ordered urban development. Fully owned by the Beira Municipal Administration, SDUBeira is in charge of developing the Munhava Industrial and Logistics Park (along with the planned new port access road, a 900 ha concession) and the Maraza Residential Area, a 400 ha development zone wedged between the airport and the EN6 (SDUB n.d.). Yet, even at that institutionalised level, the idea of incremental building for adaptation prevails (see also the next section). SDUBeira is seeking investors for both projects but, so far, none has materialised. In the Maraza project in the Vaz area, a first plot has been prepared for the building of six apartment blocks of 10 flats each. Yet, upon visiting the site with two SDUB functionaries, not much beyond a terraced plot with minor, tertiary drainage canals is visible, with a lone guard in a tent preventing further encroachment on the area, and subterranean drainage and sewers laid, as well as piped water and electricity. As the SDUBeira website proclaims, the project ‘is being implemented in phases, allowing for short investment cycles. The pilot project is currently underway, covering an area of 14 hectares.’¹

But all these best-laid plans are moot without an influx of investment. The port is operating reasonably well, as almost all fuel imports to, and marble exports from, Zimbabwe and central Mozambique are done via Beira. But the city remains extremely vulnerable to economic downturns. This helps direct attention across scales – in the case of Beira, for example, thought needs to be given to how coal consumption in East Asia drives the boom-and-bust cycles of coal production in the inland province of Tete, directly influencing the availability of jobs and money in Beira, and thus shaping the patterns of house-building and ownership in the new expansion zones of the city. Though that is not the whole story – a new railway line was also built from Tete to the northern port of Nacala, diverting coal exports away from Beira and that, as Beirenses will tell you, is part of central government schemes to economically choke their opposition-held city.

Given the constraints detailed here, many of my interlocutors dreamt of a new economic upturn for the city of Beira and projected their hopes onto the rumoured start of gas exploration off the coast of Búzi municipality, which is just a bit further south of the mouth of the Búzi River. This, people were sure, would create a new influx of money and more jobs, and allow them to pursue their plans of socio-economic advancement, including the expansion or completion of their construction projects.

5. ANALYSING THE WORK OF ADAPTATION

Two main factors condition the work of resilience in Beira. One is political, the other more institutional. Empirical evidence and analysis is provided below on both these aspects to show how political and institutional wrangles, more than technical and financial challenges alone, condition the work of climate adaptation.

5.1. POLITICAL CONFLICTS

Politically, the city is one of two cities governed by the opposition, which is a thorn in the side of the ruling Frelimo Party, which has governed Mozambique since independence. A brief background: Frelimo, the Mozambican Liberation Front (*Frente de Libertação de Moçambique*) ‘won’ independence from Portugal in 1975 after its liberation struggle (1964–1974) and installed a socialist, single-party regime. Yet, only two years after independence, the country was plunged into civil war, when the Mozambican National Resistance (*Resistência Nacional Moçambicana*, Renamo) took up arms against the Frelimo state. Renamo was funded by first the Rhodesian, then the South African Apartheid regime as a means to destabilise its Marxist neighbour. Yet despite portrayals as apolitical ‘bandits’ Renamo did in fact tap into and articulate political grievances of a part of the rural population especially in central Mozambique that felt alienated by Frelimo’s urban, socialist, high-modernist and ‘anti-tribalist’ vision of independent Mozambique (Pearce 2020; Wiegink 2020). The civil war also brought about mass displacement of people from the countryside to the cities, which grew rapidly and in an unplanned way (Lubkemann 2005).

After the end of the war in 1992 and the transition to multiparty democracy, Renamo’s share of the national vote continuously decreased, partly also due to Frelimo’s abuse of the powers of incumbency (Pitcher 2020). Yet, in Sofala, Renamo always had its best results at national elections, and decentralisation, though flawed, opened spaces for the opposition to govern at city level. In the case of Beira, Daviz Simango was elected mayor for Renamo in 2003, and re-elected as an independent candidate in 2008, after he was excluded from Renamo by its then leader, Afonso Dhlakama. Daviz then founded the Mozambican Democratic Movement (*Movimento Democrático Moçambicano*, MDM), which sought to position itself as a third force in Mozambican politics beyond the old civil war divide but failed to establish itself beyond its stronghold, Beira (Chichava 2010; Pearce 2020).

Accordingly, many of my conversations were shaded by the notion that the municipal and the national government were jockeying for money and influence in the reconstruction process, with urban residents (and especially public functionaries at the city administration) accusing Frelimo of wanting to ‘strangle’ the city. More recent administrative reforms have further curtailed the autonomy of the city government, by setting up parallel provincial-level structures that are

appointed by the central government and effectively double existing functions, leading to further confusion about how government competencies are distributed between the municipal (city) and provincial levels (Forquilha 2020).

5.2. INSTITUTIONAL PRIORITIES

This struggle for influence and control directly shapes the set-up of reconstruction funding, as the national government created an Office for Post-Cyclone Reconstruction (known as GREPOC, by the acronym for its Portuguese name, Gabinete de Reconstrução Pós-Ciclone) to coordinate reconstruction efforts and money. GREPOC was initially planned as my entry point, to look at the effects of their programmes, especially in the area of housing. Yet, four years after Idai, there were very limited visible results of reconstruction.

Unsurprisingly, an often-heard comment on the situation was that:

All the money for Idai reconstruction has been stolen. Look around you. You don't need a study for this. When Idai hit, they all descended on Beira, all those ministers who had never set a foot here. All the donors came, and TV crews, and the helpers in their helicopters. All the hotels were full, it seemed like a different city. Daviz Simango worked like crazy until it killed him; he also stole, but only a little, to make us believe. But those guys? They stole everything. They come and say they'll give food to the poor, but as soon as the donor has turned his back they'll take even that food. To steal from the poor? You really have to have an evil heart...

Yet the institutional set-up makes for a more complex (and interesting) story than the often-heard tale of corruption and inefficiency. Indeed, an assemblage of actors is engaged in remaking the city along standards of resilience, some more, some less adapted to the local context. The gist of Engineer Gonçalo's comment, cited earlier, was that Beira was being maintained 'against nature', and that it was well and right for the Dutch to build their cities below sea level, as they had the money and resources to do so, but that in the case of Beira this battle against the elements was ultimately doomed to fail. Yet money was poured in *à fonds perdus* because there was a clear interest to maintain Beira as a functioning city governed by an opposition capable of delivering outcomes to continue presenting Mozambique as a *de facto* – and not only on paper – multiparty democracy.

Resilience, as Lorraine Dongo argues, serves as a 'boundary object' here, a malleable concept 'that enables collaboration and dialogue between different actors whilst allowing for differences in use and perception' (Dongo 2021: 54). Most donors and implementing agencies were following UN-Habitat's models of resilient housing and shelter schools, though the humanist, Buddhist, Taiwanese charity Tzu Chi, for example, insisted on adorning its shelter schools with pagoda-like rooftops. Such more humorous details aside, it was probably as much institutional logics and ideology than 'corruption' that led to delays. The Dutch built drainage canals and coastal protection walls, because, as I was told, 'that's what the Dutch do'.

The World Bank, the main funder and actor of reconstruction, for example, had – unsurprisingly – opted for an 'owner-driven reconstruction' process. However, the bank also did not trust the same homeowners to use the cash or vouchers they would have received under such a scheme 'correctly', and so a long-winded public tendering selection and training process of implementing partner organisations was devised, which was still ongoing at the time of research.

More crucially, the World Bank had opted for reconstruction, not the construction of resettlement housing, and to exclude areas designated as prone to flooding in a risk map drawn up by consultants for the Japanese International Cooperation Agency (JICA), thereby excluding significant parts of the city and those residents who did not own their houses. An estimated 290,000 families were affected as per the Post-Disaster Needs Assessment (GREPOC 2019). The budget was sufficient for the rebuilding of only 15,000 houses. Accordingly, choosing the beneficiaries required a relatively laborious survey process to determine the absolutely most vulnerable of the vulnerable among

the potential beneficiaries – female-headed households or those headed by orphan children, the chronically ill or living with deficiencies, etc. Such a targeted selection did, however, not make needs for support less pressing in the areas excluded by donor criteria.

The central neighbourhood of Ponta Gêa, for example, counts as a ‘noble’ area of town, where Beira’s iconic Grand Hotel stands: a looming, derelict hulk that has been occupied by people displaced by the war – who by now form an authentic ‘republic’, as people say – and a popular motif for any foreign photojournalist coming to town (Gillis 2021; Lazzarini 2023). Beyond that, the building stock of the zone is largely colonial, from airy, ‘Indian’ merchant houses and Portuguese *vivendas* to late colonial apartment blocks.

This is an area considered squarely within the developed city, both by donors and the city government. Yet, four years after Cyclone Idai, many roofs are still caved in, windowpanes missing or shuttered with plywood, walls pockmarked by water stains. On an exploratory walk through Ponta Gêa, I spoke with residents of those, still visibly damaged, houses, and none of them had received any assistance. All of them had comparatively secure rights, either owning their house/flat outright, either by inheritance or having bought it shortly after independence, when the state nationalised, then sold off the colonial housing stock at relatively affordable prices to the occupiers, or as durable tenancy rights in housing reserved for state employees (see also Roque *et al.* 2020; Sumich 2018). Yet in all of the cases household incomes were dependent on either meagre widow’s/old-age pensions or *ad hoc*, informal commerce and services, and depended on extra support to partially, if at all, rehabilitate their houses.

Dona Marisa and Senhor Jacinto, for example, were a retired couple who had survived Idai by sheltering with one of their children in a different neighbourhood. The cyclone lifted off the roof and flooded their top-floor apartment. Four of the eight parties pooled money to pay a contractor to redo the roof, but this ate up all of the couple’s savings. Accordingly, they now rented out their flat to a tenant, while they had moved into their lower-ground-level garage that they had rearranged into a very modest, makeshift studio. This was a windowless sleeping area (the actual garage) fronted by the access ramp, now covered with a corrugated iron sheet roof that held a cooking, bathing and dining area, together with one huge, old, buckling wooden wardrobe. They were just about surviving from the rental income from their flat, but their cooking gas had ended the previous week and they had not yet been able to buy a new bottle. While they considered themselves lucky to at least have this garage to live in, they were bitter that any money from the outside had been distributed elsewhere, as Ponta Gêa had been counted with the rich, not the needy.

That’s not to say that everyone in Ponta Gêa is destitute – I also talked to people who had the capital or income to rehabilitate or even expand their houses – but it shows how the seemingly apolitical, technical criteria of vulnerability laid down by donors can lead to exclusion of central, no less vulnerable parts of the urban population.

5.3. WHO DOES NOT HAVE A VOICE?

In a way, such stories of not being heard in the reconstruction process became a constant refrain of fieldwork, across different zones of the city, ranging from formal cement city neighbourhoods like Ponta Gêa and Pioneiros to ordered expansion zones like Manganhe, to more precarious informal outer *bairros* like Munhava Matope or Ndunda 2. Here, in addition to my own walkthroughs and encounters, I benefited from input from third-year anthropology students at Universidade do Licungo, with whom I held a half-semester practical fieldwork course and who went around interviewing residents in selected neighbourhoods of the city, helping me extend my range of coverage.

In some neighbourhoods, a few of the people we spoke to told us they had met with someone who came to survey the damages, but in most cases no *levantamento* (assessment, survey) had been done. Time and again, I heard that ‘the government does not see us’, which stood in direct contradiction to how my interlocutor at the National Statistics Institute (Instituto Nacional de Estatística, INE) talked about the post-disaster survey they carried out:

We wanted to make a contribution for the country. We were seeing the suffering of the *povo* and wanted to contribute with our work. [...] It was pretty challenging [...] the World Bank demanded we do not include the so-called risk areas, or protected areas. [In the survey area] we had 100% of coverage, it was phenomenal. [...] after tidying up the data, we looked at eligibility. That was the difficult part. The bank had budgeted for 15,000 houses, and from the survey we saw that three to four times as many needed help. We had to redefine the most vulnerable, but even with that we were way above.

Despite these limitations, Senhor Júlio felt the survey was a success: the INE learnt a lot in the process, and it was a ‘beautiful, patriotic exercise’. Yet, when I spoke to GREPOC in April 2023, I was told the database had to be updated again, because the donors wanted to avoid ‘human influence’ in the selection of beneficiaries. When I tried to insist on finding out who were the households already identified for reconstruction as per the existing map, I met with some resistance:

I would not [try to speak to them]. People have been waiting for so long already that now one has to arrive with the project ready. Otherwise, there will be some turbulences. Only in the city of Beira, 200,000 families were surveyed, and 6,000 *e tal* will be considered. [I try to insist] We would not recommend it. Even for the (implementing) NGO it will be a difficult task.

This also shows how the logics of inclusion and exclusion imposed by the major donors conditioned the access to post-disaster reconstruction: this city maintained ‘against nature’ is, per the Japanese consultants’ map, considered almost in its entirety as at risk of flooding. This, according to my interlocutors at the municipal administration, misrecognises the nature of the threat: ‘in Beira, no one dies of flooding’. Flooding was minimal, compared to the rural municipalities where residents had to be evacuated by boat; the main cyclone damage was from the wind gusts and rains. As a consequence, cyclone-proofing for the disasters to come will yield very selective results, as such risk assessments not only misread risk but also misrecognise context-specific patterns of dwelling and making a living as risky.

The *bairro* of Praia Nova (New Beach) is a central area of the city that grew on reclaimed land that the Portuguese colonial city government had filled in in front of the central administrative and business area to protect it against spring flood. This is nowadays a fishing community that, because of its exposure to the sea, is considered one of the city’s most vulnerable areas. Here, some non-World Bank, non-GREPOC resettlement projects are under way, and some residents have been resettled to safer areas further inland as part of earlier projects. But, while these residents may be happy to have received a new house somewhere else, their source of income is fishing, which they evidently cannot do from an interior location, so cycles of resettlement go hand in hand with cycles of precarious reconstruction in Praia Nova. However, these shacks are, from the perspective of their users, only temporary shelters for the days they are out fishing from Praia Nova, while the actual home then becomes the new place in the resettlement area.

6. BUILDING ADAPTATION

To illustrate practical challenges of building adaptation, it is worth looking at Beirans’ experiences of post-cyclone urban housing. These are, by the still very incipient state of the reconstruction process in Beira, rendered in very broad strokes. Although there might be better or worse solutions for building adaptation, there are significant material challenges and asymmetries in the production and circulation of knowledge and material means that condition the possibilities for their realisation.

When looking at building practices currently being implemented in Beira, the main challenges were socio-economic, compounded by a dearth of architectural and engineering expertise and uneven quality of building materials. Those who could built higher foundations for their houses and covered them with concrete slab roofs rather than corrugated iron sheets. Local engineers mentioned the tricks of the trade to build cyclone-proof rooftops, much of which had to do with the spacing of roof beams and the types of cramps used to fix the roof sheets to the purlins, and

trying to eliminate entry points for wind gusts. Yet such ‘best practices’ were moot when shops sold their customers 0.4 mm sheets as 0.6 mm sheets, or when artisanal cement blocks crumbled when drilled – or, more crucially, when families that might have inherited property or durable usage rights to a house or parts of it had not one member of the family who was in regular employment (or, even if they were, they did not earn the minimal wage of 8,000 mt, nominally US\$125 per month in the first half of 2023).

Most of those who were engaged in smaller or larger building projects did not have the financial means to see a construction project through from beginning to conclusion, but were building in fits and starts, according to cashflow – often because their own clients, including the state, were late payers. The main issue was access to credit, as commercial banks charged interest rates of 18% on housing loans. Although there were small-scale attempts by non-profit associations to build accessible, resilient low-cost housing, these projects failed to address the large-scale needs of the city. And for every ‘best practice’ that worked there were examples of botched, ill-conceived or incomplete housing projects.

Two examples illustrate the complexity of building better homes for Beira. Casa Real’s low-cost housing project provided about 90 ‘evolutive’ houses in the expansion zone of Inhamitua. Most of these sold for US\$10,000. A few homes were placed on a rent-to-buy scheme funded by another NGO – these were what is called a ‘T0’ house comprised of a small kitchen area, a bathroom and one bedroom. But once people had secured that basic foothold the houses were extendable according to the owners’ capacities and wishes – with extensions done by Casa Real’s own engineer and building teams, so following the same standard of resilience. Casa Real would expand the provision of homes but the adjacent plots were owned by different people and, so far, the municipality had not shown much political will to help solve the contention.

The lack of visible reconstruction in the city means it is worth understanding the resettlement areas in the rural municipalities around Beira. In Guára-Guára, Búzi Municipality, people resettled from the village of Búzi, on the banks of the Búzi River, were living in neighbourhoods called 2000, 2019, 2020 and 2021, after the floods that caused the displacement. UN-Habitat were now training local craftspeople to build resilient houses as part of the adaptation programme, but a resident in a Red Cross-built house in 2019 grumbled: the donors had insisted that all houses should face the road (a sandy path, in fact), which meant that her house was exposed to the direction of the winds and rain. The roof over the veranda was too short, and the second window had no roof at all, so when it rained the water came in. Plus, the adobe bricks had not been plastered over so they became saturated with water and it dripped inside.

7. CONCLUSION

By examining the work of the multiple actors involved in ‘building back better’ in Beira after Cyclone Idai, it becomes clear that the work of building resilience in a city like Beira faces challenges at multiple levels. From the infrastructural inequalities inherited from colonial times to the unplanned expansion of the city during the civil war, to the geographical situation, physical preconditions are challenging in and of themselves. Yet these challenges are compounded by the political competition over limited donor resources and wrangling over influence between the city government (MDM) and the national and provincial governments (Frelimo).

It would be too simple to reduce the problems to the often still dominant narrative of ‘dysfunctional’ African politics. Donor ideology, such as the preferences for large infrastructural projects, a reluctance to resettle residents, and the primacy of ‘owner-driven’ reconstruction, as well as the application of selective and rigid risk criteria produce an urban landscape of uneven resilience-building where, for residents affected by cyclone damage, very little visible progress has been made. Moreover, socio-economic deprivation is often structurally engrained (lack of access to employment and credit), which often impedes residents from adopting more cyclone-proof building practices in their own houses. Finally, economic dependency on big infrastructure (the Port of Beira) and possible future resource extraction do little to shift the perspective from infrastructural adaptation to social adaptation (see also Castán Broto 2022).

This perpetuates a top-down approach to climate urbanism that makes invisible more fluid ways of living with water, as for example in the fishing community of Praia Nova. Future work should, accordingly, pay attention to both the circulation of ideals and the ideologies of technical and capital-intensive infrastructural climate adaptation. Bigger and Webber (2021) suggest possible pathways to do so. Equally, thought and attention must be devoted to the situated, everyday practices of urban residents in the global south that remake the city in the everyday.

NOTES

1 <https://sdubeira.co.mz/pt/project/parque-residencial-da-marraza> (accessed 11 September 2023).

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AUTHOR AFFILIATION

Jon Schubert  orcid.org/0000-0003-1100-8086
Division of Urban Studies, University of Basel, Basel, CH

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In keeping with ethical standards in qualitative social science research, respondents in public functions speaking on the record are identified by their real names when they have given consent to do so; all other interlocutors are anonymised by a unique pseudonym.

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REFERENCES

- Agence Française de Développement.** (n.d.). MOZAMBIQUE: Rehabilitation of Beira's sanitation system. <https://www.afd.fr/en/carte-des-projets/rehabilitation-beiras-sanitation-system>
- Amaral, I.** (1969). Beira, cidade e porto do Índico. *Finisterra. Revista portuguesa de geografia*, 4(7), 76–93. DOI: <https://doi.org/10.18055/Finis2492>
- Arabindoo, P.** (2016). Unprecedented natures? *City*, 20(6), 800–821. DOI: <https://doi.org/10.1080/13604813.2016.1239410>
- Barrios, R. E.** (2016). Resilience: A commentary from the vantage point of anthropology. *Annals of Anthropological Practice*, 40(1), 28–38. DOI: <https://doi.org/10.1111/napa.12085>
- Barrios, R. E.** (2017). What does catastrophe reveal for whom? The anthropology of crises and disasters at the onset of the Anthropocene. *Annual Review of Anthropology*, 46(1), 151–166. DOI: <https://doi.org/10.1146/annurev-anthro-102116-041635>

- Barros, C. P., Chivangue, A., & Samagaio, A.** (2014). Urban dynamics in Maputo, Mozambique. *Cities*, 36, 74–82. DOI: <https://doi.org/10.1016/j.cities.2013.09.006>
- Bigger, P., & Webber, S.** (2021). Green structural adjustment in the World Bank's resilient city. *Annals of the American Association of Geographers*, 111(1), 36–51. DOI: <https://doi.org/10.1080/24694452.2020.1749023>
- Bremner, L.** (2020). Planning the 2015 Chennai floods. *Environment and Planning E: Nature and Space*, 3(3), 732–760. DOI: <https://doi.org/10.1177/2514848619880130>
- Castán Broto, V.** (2022). Splintering urbanism and climate breakdown. *Journal of Urban Technology*, 29(1), 87–93. DOI: <https://doi.org/10.1080/10630732.2021.2001717>
- Chichava, S.** (2010, April). MDM: A new political force in Mozambique. Paper presented at Election processes, liberation movements and democratic change in Africa, Maputo.
- Cretney, R.** (2014). Resilience for whom? Emerging critical geographies of socio-ecological resilience. *Geography Compass*, 8(9), 627–640. DOI: <https://doi.org/10.1111/gec3.12154>
- Dawson, A.** (2019). *Extreme cities: The peril and promise of urban life in the age of climate change*. Reprint edition. Verso.
- Direito, B.** (2020). *Terra e Colonialismo em Moçambique*. ICS Press.
- Dongo, L.** (2021). Contesting and negotiating the 'urban' in climate resilient change: A case study of Beira, Mozambique (Doctoral dissertation, University of East Anglia, Norwich).
- Faas, A. J., & Barrios, R. E.** (2015). Applied anthropology of risk, hazards, and disasters. *Human Organization*, 74(4), 287–295. DOI: <https://doi.org/10.17730/0018-7259-74.4.287>
- Ferguson, J.** (1994). *The anti-politics machine: 'development,' depoliticization, and bureaucratic power in Lesotho*. University of Minnesota Press.
- Ficke, R. E.** (2018a). Infrastructure and colonial difference in Puerto Rico after Hurricane María. *Transforming Anthropology*, 26(2), 102–117. DOI: <https://doi.org/10.1111/traa.12129>
- Ficke, R. E.** (2018b). *Hurricane bomb*. AES Engagement. <https://aesengagement.wordpress.com/2018/02/06/hurricane-bomb>
- Forquilha, S.** (2020). Reformas de descentralização em Moçambique: o papel das instituições na definição dos resultados. <https://www.wider.unu.edu/sites/default/files/Publications/Working-paper/PDF/wp2020-132-PT.pdf>. DOI: <https://doi.org/10.35188/UNU-WIDER/2020/889-4>
- Gillis, A.** (2021). Grande Hotel Beira: Mozambique's white elephant. *Current Anthropology*, 62(5), 647–656. DOI: <https://doi.org/10.1086/716866>
- GREPOC.** (2019). *Mozambique Cyclone Idai Post-Disaster needs assessment*. Government of Mozambique.
- Harrison, P., & Croese, S.** (2023). The persistence and rise of master planning in urban Africa: Transnational circuits and local ambitions. *Planning Perspectives*, 38(1), 25–47. DOI: <https://doi.org/10.1080/02665433.2022.2053880>
- Henriques, B.** (2023). *Beira: International tender launched for 2nd phase of cyclone-ravaged coastal protection works*. 360 Mozambique. <https://360mozambique.com/business/infrastructures/beira-international-tender-launched-for-2nd-phase-of-cyclone-ravaged-coastal-protection-works>
- Hewitt, K.** (1983). *Interpretations of calamity: From the viewpoint of human ecology*. Routledge.
- Kirshner, J., & Baptista, I.** (2023). Corridors as empty signifiers: The entanglement of Mozambique's colonial past and present in its development corridors. *Planning Perspectives*, 38(6), 1–22. DOI: <https://doi.org/10.1080/02665433.2023.2173636>
- Kolb, C.** (2006). Crescent city, post-apocalypse. *Technology and Culture*, 47(1), 108–111. DOI: <https://doi.org/10.1353/tech.2006.0077>
- Lakoff, A.** (2006). *From disaster to catastrophe: The limits of preparedness*. Items: Insights from the Social Sciences. <https://items.ssrc.org/understanding-katrina/from-disaster-to-catastrophe-the-limits-of-preparedness>
- Lazzarini, A. H.** (2023). Re-forming resource entrepôts: Urban investment, extraction, and Beira's Grande and Golden Peacock Hotels. *Environ Plan D*, 02637758231208286. DOI: <https://doi.org/10.1177/02637758231208286>
- Lubkemann, S. C.** (2005). Migratory coping in wartime Mozambique: An anthropology of violence and displacement in 'fragmented wars'. *Journal of Peace Research*, 42(4), 493–508. DOI: <https://doi.org/10.1177/0022343305054093>
- McFarlane, C., & Rutherford, J.** (2008). Political infrastructures: Governing and experiencing the fabric of the city. *International Journal of Urban and Regional Research*, 32(2), 363–374. DOI: <https://doi.org/10.1111/j.1468-2427.2008.00792.x>
- Mikulewicz, M.** (2019). Thwarting adaptation's potential? A critique of resilience and climate-resilient development. *Geoforum*, 104, 267–282. DOI: <https://doi.org/10.1016/j.geoforum.2019.05.010>
- Morton, D.** (2019). *Age of concrete: Housing and the shape of aspiration in the capital of Mozambique*. Ohio University Press. DOI: <https://doi.org/10.2307/j.ctv224twfc>

- Mosse, D., & Lewis, D.** (Eds.). (2005). *The aid effect: Giving and governing in international development*. Pluto Press.
- Muradás, P., Puig, M., Ruiz, Ó., & Solé, J. M.** (2021). Mainstreaming climate adaptation in Mozambican urban water, sanitation, and drainage sector. In N. Oguge, D. Ayal, L. Adeleke, & I. Da Silva (Eds.), *African handbook of climate change adaptation*, 2631–2652. Springer International Publishing. DOI: https://doi.org/10.1007/978-3-030-45106-6_132
- Murray Li, T.** (2007). *The will to improve. Governmentality, development, and the practice of politics*. Duke University Press. DOI: <https://doi.org/10.2307/j.ctv11smt9s>
- Noormahomed, P.** (2022). Towards the definition of an ever-changing heritage: A reading of the (re) appropriation processes of the Torres Vermelhas in Mozambique. *Curator: The Museum Journal*, 65(3), 623–642. DOI: <https://doi.org/10.1111/cura.12506>
- OECD/SWAC.** (2020). *Africa's urbanisation dynamics 2020: Africapolis, mapping a new urban geography*. OECD.
- Pearce, J.** (2020). History, legitimacy, and Renamo's return to arms in central Mozambique. *Africa*, 90(4), 774–795. DOI: <https://doi.org/10.1017/S0001972020000315>
- Pitcher, M. A.** (2020). Mozambique elections 2019: Pernicious polarization, democratic decline, and rising authoritarianism. *African Affairs*, 119(476), 468–486. DOI: <https://doi.org/10.1093/afraf/adaa012>
- Roque, S., Mucavele, M., & Noronha, N.** (2020). The city and the barracas: Urban change, spatial differentiation and citizenship in Maputo. *Urban Forum*, 31(3), 331–349. DOI: <https://doi.org/10.1007/s12132-020-09400-w>
- Schubert, J.** (2020). Wilful entanglements: Extractive industries and the co-production of sovereignty in Mozambique. *Ethnography*, 21(4), 537–558. DOI: <https://doi.org/10.1177/1466138118802953>
- Schuller, M.** (2012). *Killing with kindness: Haiti, international aid, and NGOs*. Rutgers University Press.
- SDUB.** (n.d.). *SDUBeira – Sociedade de Desenvolvimento Urbano S.A.* <https://sdubeira.co.mz/en>
- Shannon, M.** (2019). African urban development in a post-aid era: The 'Dutch approach' to urban restructuring in Beira City, Mozambique. *Built Environment*, 44(4), 397–419. DOI: <https://doi.org/10.2148/benv.44.4.397>
- Smith, N.** (2006). *There's no such thing as a natural disaster*. Items: Insights from the Social Sciences. <https://items.ssrc.org/understanding-katrina/theres-no-such-thing-as-a-natural-disaster>
- Sumich, J.** (2018). *The middle class in Mozambique: The state and the politics of transformation in southern Africa*. Cambridge University Press. DOI: <https://doi.org/10.1017/9781108659659>
- Sumich, J., & Nielsen, M.** (2020). The political aesthetics of middle class housing in (not so) neoliberal Mozambique. *Antipode*, anti.12622. DOI: <https://doi.org/10.1111/anti.12622>
- United Nations Department of Economic and Social Affairs.** (2019). *World Urbanization Prospects. The 2018 Revision (ST/ESA/SER.A/420)*. United Nations.
- van Weelden, P.** (2013). *Beira masterplan*. Deltares.
- Wiegink, N.** (2020). *Former guerrillas in Mozambique*. University of Pennsylvania Press. DOI: <https://doi.org/10.9783/9780812296907>
- Wisner, B., O'Keefe, P., & Westgate, K.** (1976) Taking the naturalness out of natural disaster. *Nature*, 260(5552), 566–567. DOI: <https://doi.org/10.1038/260566a0>

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