GREENWASHING? THE GLOBAL RISE OF SUSTAINABILITY AND FORCED HOUSING
DISPLACEMENT IN FORTALEZA, BRAZIL


BY

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THESIS

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# Abstract

Fortaleza is a lesser-known city of Latin America with over 3.5 million inhabitants, over one-third of whom reside in substandard housing. The city is currently undertaking transportation development projects that are driven by a broader discourse of sustainability, however the outcomes from these projects resemble those associated with urban renewal including slum clearance and public investment for private gain. This study analyzes whether transit projects rooted in sustainability are meeting the triple bottom line of social, economic, and environmental sustainability, with a focus on equitable impacts to both formal and informal settlements. Specifically, this thesis seeks to uncover why infrastructure investments justified as increasing the capacity for sustainability continue to result in the systematic displacement of low-income informal households.

To examine the relationships between sustainable infrastructure investments and outcomes including forced displacement, a mixed-methods approach combining a spatial analysis to verify disproportionate impact and interview and document analyses are employed to reveal unique displacement threats.

Findings suggest that these projects *are* causing disproportionate, negative impact on the urban poor of Fortaleza, and that the experiences of individuals who face that negative impact via threats of displacement manifest in patterns which can be corroborated by documentation. Further, findings suggest that these projects are justified and continued under the justification of sustainability, but social sustainability bias, a crucial pillar to broader sustainability, is missing

from the picture. This is important for urban planners and policy makers, more generally, as the systemic biases against the urban poor and marginalized groups within the urban poor are not only being perpetuated, but are being further rationalized by a cooptation of an otherwise promising concept: sustainability.

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# Contents

# Chapter 1: Introduction

Are sustainability and social justice fundamentally incompatible? While Andrew Dobson (2003) has tried to answer this question in a theoretical sense, the question is presenting itself organically in Fortaleza, Brazil as projects fueled by notions of sustainability are juxtaposed against a landscape of severe inequality. This thesis considers the juncture of social justice and sustainability through the lens of urban renewal, drawing on Marxist understandings of the political economy and ecology as described by Logan & Molotch (1987).

This study uses mixed-methods to explore Fortaleza, Brazil and three of its current sustainability-driven transportation modes currently under development. A spatial analysis establishes that there is a numerical claim to the notion that the development of this infrastructure is placing negative impacts disproportionately onto the urban poor. Then interview and document analyses triangulate these findings of disproportionate impact, showing that the burden is not only numerical; real people have had their daily lives negatively impacted by sustainability-driven infrastructure in Fortaleza.

The discussion of the results explores some of the different ways the results can be understood, particularly diving into whether the impacts of sustainability-driven transportation infrastructure has more potential to harm or to *help* the urban poor. I also discuss the themes uncovered through interviews with informal settlement dwellers and what the lived experience of forceful housing displacement means for urban planning writ large. Finally, I discuss the absence in the projects studied of one essential component of sustainability: social sustainability.

This work is admittedly limited in the questions it can answer; while it addresses three types of large-scale urban projects, it does not represent processes for all types of infrastructure even within this one city, and the people interviewed are not a representative sample that can represent all inform settlement dwellers. However, by using this case study approach I hope to trade these limitations for a depth of understanding of individual experiences of facing and enduring forceful housing displacement that are rarely sought in studies of disproportionate impact.

This work is organized into seven chapters. After this brief introduction, Chapter Two reviews literature of urban renewal, generally, informal housing globally, and the status of sustainability as a concept in the literature. This is followed by the research questions that are pursued, here.

Chapter Three details the methods used by previous scholars to study urban renewal, informality, sustainability, and some of the combinations of those topics, and then describes the methods and analyses chosen for this study. In Chapters Four and Five I present the findings of the analyses conducted, and save the deeper discussion of the importance of these findings for Chapter Six. I conclude the work in Chapter Seven with some recommendations for what planners and policy makers can do, now, in response to the deficiencies identified as well as some suggestions for further research.

This work aims to contribute to the urban renewal and sustainability literatures by providing empirical evidence that urban renewal is not gone, but is being re-justified using new, attractive but shallow discourses. Further, I aim to strengthen the relatively small body of literature that includes accounts from individuals who have personally faced the implications of urban

renewal-via-sustainability.  These contributions, I hope, will steer urban planners away from a

shallow discourse of sustainability toward one which recognizes the inherent contradictions in

existing frameworks and commits to real social change as a means of ensuring an equitable way

forward for current and future generations.

# Chapter 2: Urban Renewal, Informal Housing, and Notions of Sustainability

This chapter will explore three of the urban development trends impacting the city of Fortaleza. I examine urban renewal, informal housing, and notions of sustainability in order to provide context for my analysis. This chapter concludes by presenting the specific questions which I will address within this thesis.

## Urban Renewal

### History of Urban Renewal

The Urban Renewal era in the United States followed about 50 years behind the "Housing of the Working Classes Act" of Great Britain in 1985 (see the search above for many sources). Like the late 1800s, the urban renewal policies of the US saw a flurry of reporting and study. While the British (Squalid Liverpool, 1883)) studies focused primarily on public health and policy analysis to understand why slums continued to persist in spite of policy intervention, the United States saw a focus on the racial dynamics of housing displacement through slum clearance (Pritchett, 2003).

Definitions of urban renewal (sometimes used interchangeably with urban redevelopment) generally agree that the phenomenon involves redevelopment of land, usually a large area that is typically already characterized by high-density use, typically through the clearance of slums, and the actions being done by or benefitting private parties but with sanctioning and often funding from public sources (Pritchett, 2003; Zhang & Fang, 2004). Global in its reach and

dating back to the industrial revolution (Zhang & Fang, 2004; Weber, 2002)[1], urban renewal has

been used to create both physical and political changes within cities (Gotham, 2001). Differing

political perspectives explain the rise and ubiquity of the phenomenon differently, but there is

general consensus about the historical outcomes of urban renewal policies and projects.

 As most understand the term today, urban renewal came significantly onto the scene in the

mid-twentieth century (Teaford, 2000) as a federal program in the United States, put forth as

an answer to urban decay; urban renewal advocates came to understand the only solution to

urban decline to be radical changes in property rights. In a landmark 1954 court decision,

eminent domain was used to take property from one private entity and hand it over to another

private entity who would "use it more appropriately" (Pritchett, 2003). While the general goal

of this approach was a reinvigoration of the city, supporters from different angles each had

their own hopes; business interests saw an opportunity to boost property values that were

lagging, public officials saw a mechanism to increase tax revenues, and progressive reformers

hoped it could solve problems related to slums, particularly providing more and better housing

(Teaford, 2000 and Langley Keyes, quoted in Zhang & Fang, 2004). The passage of the

legislation was attributed to different interest groups making different assumptions about its

nature and purpose (Teaford, 2000).

Urban renewal in other countries resembled that in the United States; large areas were cleared

of existing people and uses and redeveloped according to an alternate vision, often created and

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[1] If not farther; consider the repeated eviction of Native Americans and rebuilding settlements on the Anacostia River described in Brett Williams' *A River Runs Through Us* (2001).

supported by elites (elite but often diverse, including planners along with real estate interests, politicians, and other citizens) (Pritchett, 2003). In Europe, actions were largely taken by government rather than private developers seen taking the stage in the United States, but other details were largely the same (Pritchett, 2003). Reaching China by the 1980s, urban renewal coincided with major structural changes to the economy and original plans to improve living conditions (arguably a farcical motivation (Weiss, cited in Zhang & Fang, 2004)) quickly gave way to real estate interests and megaprojects unrelated to housing (Zhang & Fang, 2004).

Alternative explanations exist for the rise and rapid spread of urban renewal policy approaches. Understood from a Marxist perspective, urban renewal is a natural outcome of the need for capital to accumulate (Weber, 2002) and the neoliberal economic structure that mandates an uninhibited market to maintain and accelerate that accumulation (Logan & Molotch, 1987; Harvey, 2007; Weber, 2002). Capitalism, as an economic system that depends on the pursuit of profit to motivate action, depends upon growth to create profit; without growth, there would never be a production "surplus" to offer profit (Logan & Molotch, 1987). Keynesian economics largely gave way to full-fledged neoliberalism around the 1970s and the increasingly hegemonic economic view was that only an economic system that aimed to approach total market freedom, unencumbered by state interference, could allow for the growth needed to incentivize economic action which would solve the world's problems (Harvey, 2007) (those problems included, for example, inadequate housing, unemployment, hunger). With this "neoliberal turn," all focus shifted to the exchange value of space; with a hyper-focus on open markets that can offer the opportunity to accumulate profit, there was no room for use values to play a role in shaping what should be done with space (Logan & Molotch, 1987). Logan and

Molotch explain this hyper-focus on exchange values through collectives of capitalist interests, or "growth machines." If the original, altruistic aims of some of the urban renewal advocates had been genuine, the ambiguity of the mechanisms had already left large gaps which were exploited by capitalist interests (Teaford, 2000). With the shift to neoliberalism, those claims of use values were pushed completely off the bargaining table in the name of market purity (Weber, 2002). Further, the state as an institution has long been organized to fundamentally support the interests of capital accumulation and, therefore, exchange values rather than use values have always been the top priority even in the legal mechanisms that have driven urban renewal (Klosterman, 1996). Harvey, influenced by Lefebvre's notion of the production of space, explains that real estate interests play a key role in providing continued opportunities for profit by instigating "creative destruction" (Harvey, 2007) which, among other manifestations, is seen in the demolition of communities to make way for private redevelopment. It is certain, then, that exchange values motivated urban renewal projects, at least in part, with use values as the publicly promised result of them but which hang decidedly in greater jeopardy (Teaford, 2000).

While some scholars urge us to see the benefits that urban renewal has brought (Robertson, 1995; Teaford, 2000; García, 2004), most, including some of its most ardent supporters, have come to the conclusion that the project of urban renewal has failed; social reformers detested that people forced from their homes did not have their relocation adequately provided for (Teaford, 2000), and conservatives damned the program as a costly overreach of big government (Zhang & Fang, 2004). Still, patterns can be seen in the objectives and in outcomes of projects as well as the reverberations of these patterns which lasted beyond the explicit use

of urban renewal as an urban policy or program. This section explores some of the patterns of urban renewal that resonate in Brazil and in Fortaleza, demonstrating that even if the policy in name has been put to rest, its approach was successful enough at creative destruction in the name of capital accumulation for private property interests to persist in implementing urban renewal in new forms.

In 1964, Chester Hartman found in his study of urban renewal relocation in Boston several of the negative outcomes of urban renewal projects which have been repeated ever since; families removed from a central location were dispersed toward the periphery of the city; many families continued to live in substandard housing after relocation; many families did not receive relocation assistance; most displaced families incurred increased housing costs (Hartman, 1964). Zhang & Fang's findings in their 2004 article describing the displacement of people in China found showed results that echoed those of Hartman's study 40 years earlier (Zhang & Fang, 2004. As recently as 2012, Patricia Rodrigues Samora mimicked these findings, especially that phenomenon of the displaced, poor families relocating to the periphery of the city, when she wrote about public/private partnerships associated with the 2014 World Cup and the upcoming 2016 Olympics (Samora, 2012), and Lucas Faulhaber's work demonstrated the same pattern just last year (2014) regarding areas impacted by the same two events in Rio de Janeiro (Faulhaber, 2014). Zhang & Fang note that while families have been displaced, many of the spaces left behind in Chinese redevelopment initiatives - and especially those with great locational value - have often been left vacant rather than see the promised housing projects constructed. Fitting with Harvey's theory of creative destruction (Harvey, 2007) and Logan & Molotch's (1987) understanding of the special place real estate holds in that process, it seems

as though the exchange value of those spaces holds greater importance than the modernization and humanitarian reasonings used to remove previous uses. Zhang & Fang go further to demonstrate the parallels between urban renewal in the United States and China, reminding the reader that the program was used to build luxury housing and the percentage of projects allowed to be allotted for nonresidential uses increased steadily.

As Zhang & Fang, Samora, and Faulhaber hint, urban renewal is not gone, in spite of United States officially discontinuing the program in 1974, twenty years after passing of the Housing Acts in 1949 and 1954. Naomi Carmon characterizes the period of the Housing Acts as the first of three "generations" of urban renewal, followed by the "rehabilitation" efforts that followed (Carmon, 1999) with the likes of Community Development Block Grants and Urban Development Action Grants (Teaford, 2000) in the United States but characterized by similar types of interventions in other countries (Carmon, 1999). The third generation coincided with the neoliberal turn and economic restructuring of the 1970s, characterized by an open-market, openly business approach to redevelopment. This shift is manifest in the entertainment facilities which have characterized much of the urban redevelopment since the 1970s (consider Glasgow's arts-centered redevelopment, done explicitly with intension to mimic the leisure-focused redevelopments of Baltimore, Denver, and Minneapolis (García, 2004) or Syndey's and Barcelona's redevelopment focused on hosting the Olympic games (García, 2004 and González, 2011).

Still today, slums are being cleared without their residents' needs being accounted or accommodated for, the vacant spaces slated for redevelopment by private interests, and with support (often financial) coming from public sources; urban renewal continues to be with us.

Examples of this include direct displacement as well as indirect displacement with direct causes including projects which more explicitly value a spaces potential to accumulate capital (or lack thereof, thus the need to redevelop), such as Chicago's use of Tax Increment Financing (TIF) mechanisms to demolish and rebuild. Indirect displacement can be witnessed in cases of "gentrification," whereby an area is either intentionally or unintentionally revalued and displacement occurs when the housing market pressures from the affluent inflate rents and other cost-of-living prices to the extent that the previous residents are pushed out, like the cases of the working-class, private renters, and the elderly in London (Atkinson, 2000).

These continued urban renewal efforts also face resistance, for example, residents have resisted demolition of high-rise public housing in Harlem in the name of gentrifying the area (Hyra, 2008) and have resisted regeneration of low-income estates in London (Lees, 2014). Still, the renewed focus on attracting capital leads local governments to shift priorities away from social equity and to implement tax incentives only available to elite, private interests to spur urban redevelopment (Gotham, 2001); this has depoliticized decision-making by strengthening the power that holders of capital have (Gotham, 2001) and has led to uneven development that disproportionately places negative burdens on the poor and benefits the well-off (Carmon, 1999). Today, urban renewal has new names, such as "revitalization," "gentrification" (Carmon, 1999), and as I will argue later "environmentalism" (see below, "Greenwashing? The Global Rise of Sustainability"); however, the outcomes still match the definition of urban renewal. Resistance efforts continue, adding pressure for the familiar outcomes of urban renewal to be reimagined as new, publicly accepted goals, such as sustainability.

Perhaps the identification of the problems with urban renewal – the repeated failure to address the needs of the poor; the prioritization of exchange values of use values; the steady shift toward open markets which produce that greatest of abuses which is to treat unequal people equally (Harvey, 1992) suggests the reason for its persistence: the elite who have enough power to instigate urban renewal projects end up benefitting from them regardless of other beneficiaries, and thus they are never incentivized to change course, even when evidence suggests to do so. As economic elites make up a growing proportion of the political elite in the neoliberal economy (Logan & Molotch, 1987) political opposition to urban renewal faces ever more difficulty in stopping this policy in spite of its demonstrated failures.

## Housing Informality

Informal settlements go by many names; slums, squatter settlements, illegal housing, and shantytowns are a few, and many know the Brazilian name: *favela.* The housing falling under this umbrella can have many different kinds of characteristics; some informal housing looks very much like other housing but the route by which it was acquired, either by the owner or the residents, may be in question; some has been in place for decades but simply lacks the formal legal title; other forms of informal housing match the images that likely come to mind: lack of connections to city water and sewer systems, lack of regulation of street sizes and housing sizes such that tiny homes are divided by tiny pathways. Legal structures that house high numbers of occupants are also considered "informal." Even public housing estates, as legal living spaces, lack many elements of "formality," such as schools, health facilities, community and leisure infrastructure, and transportation (Budds & Teixeira, 2005). Not all slums are occupied illegally, but illegal occupancy, which makes up the majority of informal housing, has been categorized

as either "squatting," where residents have no prior right to the use of the space, or "semi-legal," "irregular," or "unauthorized" (these three descriptors making up the second category) where the resident has purchased rights but the settlement violates some planning or building regulations (Harris, 2013). As one may expect, addressing the variety of types of informality is a complex task. While different kinds of initiatives have been taken to address issues of informality, none of them have accounted for the "use value" of these areas. Perhaps this is why we see the persistence of inadequate housing in informal settlements; the exchange value approach may simply be unable to account for the reasons people live in these places, and thus exchange values will never be enough to compensate informal housing dwellers enough to enable them to participate in the formal market. The formal real estate market has yet to be accounted for in a way that produces meaningful changes in the living standards of informal housing residents, and this task falls to public policy, at least in part, via, an accounting for use values.

The ubiquity of informal settlements in poorer countries (Bolay, 2006) is vitally inked to processes of urban renewal because they are easily defined as the "unwanted," providing easy fodder to the process which requires destruction. The wide spread of this type of housing that crosses geographical, political, and cultural boundaries hints at macro-patterns of vulnerability to displacement among other troubles, such as basic concerns of equity in decision-making and the right to the city. As planners become ever more concerned with sustainability, it is striking that the urban renewal processes which frequently befall informal settlement dwellers like a recurring illness are not new, but the pairing of urban renewal and sustainability is. In the next section, I consider the rise of sustainability discourse as a force driving urban decision-making.

## Greenwashing? The Global Rise of Sustainability

Appearing to value environmental sustainability above all else has reached an exalted status on the slate of governmental concerns, competing with hunger, education, potable water, and jobs for state resources and public attention (Gunder, 2006). It is related to urban renewal in the way that it justifies the continuing emergence of projects which lead to slum clearance and public investment for private gain (Quastel, 2009), even as policy strategies for this type of project have been effectively debunked by 50 years or more of scholarship (Pritchett, 2003), and it is related to Fortaleza as the politics of the new millennium have seen a the development of the city take on a "green" turn. This section reviews several frameworks for understanding sustainability and some of the problems that emerge even at the stage of definition. Next, I highlight the social justice backlash that has occurred against environmental sustainability policy. Then I connect notions of "green," neoliberalism, and urban renewal. Finally, how the global policy trend of sustainability has reached Fortaleza will be explored in greater detail.

### Frameworks for Understanding Environmental Sustainability

Michael Gunder in his 2006 article, "Sustainability Planning's Saving Grace or Road to Perdition?" is one of the biggest critics of the current treatment of environmental sustainability in planning practice. Often understood to mean "sustainable development," most notions of sustainability are tied up in institutional interests of continued economic growth. The most commonly encountered rubric for understanding sustainability is the "triple bottom line" of economic, environmental, and equity (or social) sustainability, occasionally seen with the variant of creativity as a forth bottom line element. This framework largely disregards the notions of the Earth's carrying capacity and reducing consumer behavior in favor of trying to

balance social and environmental goods while ensuring that economic growth is able to continue. The "development" sustainable development makes this explicit, but proponents of this understanding of sustainability are not shy to admit that growth is a necessary component of their commitment to the task; those associated with business are some of the most likely authors to touch the subject (such as John Elkington who developed the triple bottom line, (Elkington, 1997)), and "sustainable growth" is used interchangeably with "sustainable development" (Slaper & Hall, 2011). Further, the integration of economics into the triple bottom line assumes *market* economics (Elkington, 1997), which depends, inherently, on growth (Logan & Molotch, 1987).

Moldan, Janoušková, & Hák, review several conceptions of sustainability in their 2012 article, "How to understand and measure environmental sustainability: Indicators and targets." The Rio Declaration of 1992 definition is two-fold, as it is anthropocentric and focused on the previously identified three pillars: "Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature (Moldan, Janoušková, & Hák, 2012)." In this understanding, sustainability is focused on human well-being above all else and considers those values for future generations of humans. This understanding is decidedly pro-market and pro-human, as the declaration was made with an explicit goal of "protecting the integrity of the global…development system" (Rio Declaration, 1992). This continued commitment to growth via "development" and human productivity is backed by a long-standing priority for economic growth; it has been the "most important policy goal across the world for the last five decades" (Moldan, Janoušková, & Hák, 2012).

A third understanding, also provided by the Moldan et al. article, seems to have been largely cast aside; it argues that "humans must recognize the world's nature resources as finite, with limited capacities to support life" (Moldan, Janoušková, & Hák, 2012). Even this understanding sets the objective of conserving resources in the aim of ensuring continued development. As the authors explain, the objective is to conserve resources to ensure continued development; this notion is supported by other authors who go to great lengths to defend the notion that finite resources could, possibly, fuel something infinite (Heal, 1975; Heal, 1993).

Dobson differentiates the environmental concerns with the human concerns in his understanding, arguing that sustainability is concerned with preserving and/or conserving the non-human environment while the environmental justice movement is concerned with dividing up the "worked environment," or the parts we humans interact with, in a fair way (Dobson argues that these two goals are essentially incompatible, in the end) (Dobson, 2003).

Finally, Olpadwala & Goldsmith contend that environmental problems are not actually problems of their own, but that by disaggregating society into competing groups it becomes apparent that environmental problems are actually just people (social and political) problems (Olpadwala & Goldsmith, 1992). They argue that every entry point for analyzing environmental sustainability is linked to human uses and that detriments to the environment are the result of competing interests among human groups. They argue that, especially within a poor country context, making real change toward environmental sustainability means making social change which addresses inequalities.

### Social Justice Backlash

As Dobson wondered, can efforts of sustainability even be compatible with social justice? He argued, "no," after seeing so many resistance efforts focused on redistributing environmental bads (primarily) and goods. Gunder argues that sustainability lacks a clear definition, giving it the status of a ubiquitous good or transcendental ideal (2006). By taking on this status, alongside its brethren such as the notion of "motherhood," sustainability can be applied to any concept and it, by association, must also be good – sustainable cities, sustainable regeneration, and sustainable development must all be good because sustainability is good!

But even when a definition *is* articulated for sustainability, Bauriedl and Wissen (2002, cited in Gunder, 2006) observe that it is assumed to be in everyone's interest without regard for the fact that what can be sustainable for one can threaten another; politicizing sustainability by asking, "whose environment?" and "whose development?" and a historical perspective of environmental problems, approaches, and debates is crucially missing. By assuming that whatever sustainable thing in question (sustainable transportation, sustainable housing, etcetera) is in the best interests of everyone, those who use sustainability rhetoric or goals to justify actions ignore the point that not all people have an equal stake in that thing; it stands to benefit some more than others and hurt some more than others.

More explicitly, Beauregard noted that social justice has been written out of the planning agenda with the rise of sustainability, as concerns for environment, future populations, and economic growth are assumed to cover all the bases (cited in Gunder, 2006) (other understandings of the triple bottom line include "social justice" instead of "future generations" or "equity." Gunder cites several scholars who argue to the extent that social justice is ever

considered, it is a distant priority to the other two). Even the environmental justice advocates cannot solve this problem if their ultimate objective is to fairly distribute environmental ills and goods; the "environment" component of the triple bottom line can be argued to address that need, if not that of equity. Left unresolved are the social equity issues.

<p align="center">Sustainability in a Neoliberal Headlock -Linking Green, Urban Renewal, and Urban Policy</p>

More fundamental to the social justice backlash to sustainability is its (*un*necessary) links to the neoliberal agenda; Harvey and Hajer, cited in Gunder, 2006, argue that the automatic placement of "development" after the word "sustainable" is a product of "Northern elites" and the neoliberal imperatives of competition, growth, and globalization. As Harvey and Hajer argue, these are the social factors responsible for inequality and environmental degradation and thus social justice will never be compatible with this understanding of sustainability. Neoliberal values of scientific and legal knowledge have pressured a shift away from social concerns and design in planning, and by 1999 sustainability had become the "ultimate planning goal" (Gunder, 2006).

This line of connection between neoliberal economics and sustainability is mirrored by the parallel found between neoliberal economics and urban renewal; just as neoliberal economics requires that sustainability be based on growth and the accumulation of capital (Logan & Molotch, 1987; Olpadwala & Goldsmith, 1992), so too does neoliberal economics require that urban renewal be aimed at growth-led revitalization (Weber, 2002). As environmental sustainability, or "green" discourse grows ever more ubiquitous, the discourse becomes a convenient explanation for business as usual (Gunder, 2006) – the clearing of slums to regenerate capital.

Even if considered an independent phenomenon, we see that planning policy no longer sees

the triple bottom line to be balanced with development; development is the anchor around

which environmental and social goals are to be pursued (Norman & MacDonald, 2004). The

sustainability objectives of planning policies are being achieved through redevelopment of

already in-use land (Gunder, 2006) and this discourse is driving urban renewal in cities like

Vancouver (Quastel, 2013) and Singapore (Hoyle, 2000) both of which have implemented

environmentally friendly projects which happen to increase exchange values but

simultaneously push residents out through increasingly unaffordable property values.

But sustainability does not have to serve as a justification for pro-market activities; while

Gunder focuses heavily on the strong links which have been made between neoliberal values

and sustainability discourse, he briefly mentions that sustainability without "development" was

(and can be) focused on non-growth, non-accumulating interests. Olpadwala & Goldsmith

(1992) argue that a focus on social change can be the route to achieving sustainability

objectives, and even business ethicists like Norman & MacDonald argue that any true corporate

commitment to sustainability would entail opening the organization up to real costs, unlike the

vagaries of the triple bottom line.

## Ripe for Study: the Intersection of Urban Renewal, Sustainability, and Informal Housing

From this review of literature and broader understanding of urban processes and problems in

Fortaleza we learn that urban renewal projects often lead to displacement of the most

vulnerable groups in the area—be it by economic standing, race, ethnicity or gender (Faranak

Miraftab establishes that among the poor, women fare worse when considering access to

shelter and general well-being; this is attributed, in part, to gender bias in housing policies in programs (2001)) (Olpadwala & Goldsmith, 1992), by political influence that is largely linked to economic wealth, or in the case of Fortaleza, often by one's claim to use values, approximated by land tenure (in)security. However, the literature reviewed here leans primarily on analysis of policy, while there is often a gap between policy and reality (Garmany, 2009); vulnerability remains in any study that relies only on assessing policy for determining the state of things. Legal reviews and economic studies have mitigated this gap in the literature to some degree, but individual, ground-level perspectives which validate the everyday reality of these urban processes continues to be missing. After a review of the urban renewal history, generally, and Fortaleza's urban context and progressive policies which have been instituted to protect the interests of the poor (and, specifically, informal settlement residents), it is still unclear whether a claim can be substantiated that the sustainability-driven projects currently underway in Fortaleza have hurt the most vulnerable groups of living in the city more than others.

## Research Questions

This research examines the social equity implications of infrastructure investments that are justified as being sustainable in their scope and nature. Specifically, I examine the rationale for sustainable transportation infrastructure in Fortaleza, Brazil, focusing on the ways in which the planning and implementation of these improvements are reflective of (or not reflective of) the core tenets of the triple bottom line of sustainability. I aim to explore the claim that the sustainability-driven projects currently underway in Fortaleza have disproportionately negatively impacted the most vulnerable groups of living in the city while creating

disproportionate positive benefit for well-off residents.  To test this claim, I focus around three

questions:

1. To what extent are urban renewal processes disproportionately causing the

   displacement of informal settlement residents in Fortaleza?

2. What are the impacts of displacement for residents of informal settlements?

3. What role is sustainability playing in the justification of this disproportionate impact via

   displacement?

In the next chapter I describe my approach to answering these three questions.

# Chapter 3: Methods

Since the late 1800s, scholars have acknowledged the link between a negative public perception of slums and the likelihood that people would be displaced from their homes ("Squalid Liverpool," 1883). Studies from this time and into the early decades of the 1900s focused on establishing the public health concerns associated with slums (Fayrer, et. al, 1981), how housing was related to labor supply (Macrosty, 1898), and analyzing policy for the shortcomings that allowed slums to persist (Clarke, 1931).

In 1930 a new housing act was passed in the United Kingdom (Clarke, 1931) spurring a new flood of reporting and study. At the same time, people were being rehoused in the United States in the face of the Great Depression, American research amplified the discussion (Adie, 1933). Studies of housing displacement shifted toward economics, with many demonstrating benefits of public housing initiatives (Burns, 1930). With the new focus on public welfare that accompanied the national crises, social science received more attention regarding housing issues, and questions of equity began to emerge such as tradeoffs between minimum aid acceptable and the cost this poses to taxpayers (Adie, 1933) and questions of racial disparity in aid and housing (Johnson, 1935). Moving into the second half of the twentieth century, studies of housing displacement more dominantly focused on equity concerns, and these largely manifested studies of racial disparities and housing (see Nesbitt, 1949 and Wirth, 1944).

Studies up until the 1950s largely relied upon analysis of policies to demonstrate the adequacy or inadequacy of a policies like the Public Works Administration housing and slum clearance programs (Johnson, 1935), on quantitative data to demonstrate success or failure of a particular action like increasing control on immigration (Burns, 1930), or surveys of living

conditions to explore qualitative aspects of housing issues (Abercrombie, 1935). Since then, urban renewal strategies dominated the conversation of American housing displacement and the number of studies exploded, exploring innumerable aspects of the phenomenon. For the purposes of determining the methods best suited for this study, I reviewed studies of housing displacement that tried to answer questions of disparate impact, personal outcomes, and environmental sustainability.

The vast majority of studies considering disparate impact of housing displacement have been conducted in or in reference to the United States and racial disparities, although the impact on the poor is the subject of a notable minority of the studies. A great number of these studies have been found in law review journals, such as "Integrative Lawyering: Navigating the Political Economy of Urban Redevelopment" (Foster & Glick, 2007) which explores the appropriate role of lawyers when environmental justice organizations shift from reactionary to proactive in redevelopment conflicts, and Foster & Glick offer a reason for this: highly legal/regulatory scope of the actions have the potential to disparately impact different groups (2007). Other studies, still mostly in the realm of reviewing legal decisions, explored the factors that enabled or failed to assist parties to make a case for disparate impact, as did Lever &Espinosa (2006). The resulting conclusion from the review was that statistical evidence was essential if disparate impact were to be found by a judge (p 261). Notably, environmental justice is an emerging theme in the disparate impact segment of housing displacement literature; scholars have begun to explore environmental legislation, like a cap-and-trade system, would disproportionately impact people with low incomes via influences on transportation and housing costs (Super, 2010) and how the location of housing relates to environmental hazards (Foster & Glick, 2007).

Although being displaced is not inherently bad (one can imagine a situation where someone is not opposed to a different geographical location, is able to secure the same or more use value from a different location, and is compensated for their property handsomely, thereby finding a positive result from being displaced), displacement largely falls on the poor who are least able to realize these positive outcomes.

Even decades ago, there was general consensus that urban renewal had led to negative outcomes; social reformers detested that people forced from their homes did not have their relocation adequately provided for (Teaford, 2000), and conservatives damned the program as a costly overreach of big government (Zhang & Fang, 2004). Today, urban renewal projects produce much the same outcomes, and in places where informal housing is abundant, those residents face these negative outcomes more than others. This is true in Latin America, generally, where informality makes up a large portion of housing (an estimated 40% of Latin America's population lives in inferior housing (Klaufus & van Lindert, 2012)), and in Fortaleza in particular.

What is not found in the review of studies regarding disparate impacts of housing displacement are accounts of displacement occurring outside the United States or accounts from the perspectives of the people who experience the phenomenon. While the legal qualifications for claiming disparate impact are established, the role of spatial information in informing what may constitute an advantage versus a disadvantage is not addressed by disparate impact literature. These questions, though, have begun to be addressed through a different collection of research: studies of peripheralization. This body of literature is markedly more international,

including studies of Mexican (Peralta & Hofer, 2006), French (Lévy & Andreyev, 2003), Turkish (Erman, 2011), Scotish (Doucet, 2009) and other cities, in addition to those in the United States (Chaskin, 2013). These studies, in contrast to the law reviews of the disproportionate impact literature, much more diversely include individual perspectives, like Doucet does in "Living through gentrification: subjective experiences of local, non-gentrifying residents in Leith, Edinburgh" (2009). Spatial considerations of housing equity also arise when environmental considerations are included in research on the topic, since environmental hazards and amenities are typically immobile in nature and pose clear benefits or harms to those who are housed nearby (Issel, 1999).

The second category of studies reviewed included studies of personal outcomes or trajectories of the people who have been or faced housing displacement, and Doucet (2009) has reviewed the well-known literature which has established that the outcomes for people who are displaced are usually negative, including homelessness, community conflict, and loss of affordable housing. Peter Marcuse, as one of the dominant scholars in this body of work, has demonstrated that the *fear* of displacement is one of the significant negative consequences, which he called "displacement pressure (cited in Doucet, 2009)." Examples of negative outcomes of housing displacement are plentiful, varied, and go back decades; recall the examples offered in the *History of Urban Renewal* above; Chester Hartman found families removed from a central location were dispersed toward the periphery of the city, continued to live in substandard housing after relocation,; did not receive relocation assistance, and most incurred increased housing costs (Hartman, 1964). Zhang & Fang's found results that echoed those of Hartman's study 40 years earlier (Zhang & Fang, 2004), and as recently as 2012,

Patricia Rodrigues Samora mimicked these findings, especially that phenomenon of the displaced, poor families relocating to the periphery of the city (Samora, 2012). Lucas Faulhaber's work demonstrated the same pattern just last year (2014) regarding areas impacted by the same two events (Faulhaber, 2014).

It must be acknowledged that the negativity of displacement has been questioned, though; Atkinson (2002) and Vigdor (2002) have both posed the question, in relation to gentrification, explicitly; findings of Atkinson's systematic review of previous studies, most of which utilized census data but only about one-third of which included interview or ethnographic approaches, revealed that while positive impacts exist, they are largely experienced at the group level, such as a municipality enjoying greater tax revenues, or by the new occupiers of the space, such as the stabilization of declining areas. In comparison, the negative impacts were felt by individuals who were previously established, and these impacts were more commonly cited and greater in number. Vigdor uses a quantitative method to demonstrate economic outcomes, and those who are displaced clearly suffer negative economic consequences. Studies which explore the experience of facing or enduring displacement, then, largely depend on quantitative data to demonstrate economic outcomes or demographic data to demonstrate social change (Atkinson, 2000), with interviews and case studies representing a small portion of the research.

Based on this rich history of negative outcomes of urban renewal-led-displacement, this study assumes that displacement or threat of displacement of informal settlement dwellers leads to negative outcomes. It is much more likely that those with more economic negotiating power have an opportunity to gain, rather than lose, from the process. This is particularly true based

on the greater proportion of exchange value (versus use value) that residents of formal areas

are able to realize from property due to more desirable locations (Freitas, 2009), more secure

land tenure (Gonçalves, Ribeiro, & Freitas, 2013), and weaker connection to use values of space

(Logan & Molotch, 1987)). For the sake of consistent comparison, this potential for positive

displacement outcomes of residents from formal areas is also is not considered; all threats of

displacement and displacement outcomes are treated as negative.

Finally, the methods others have used to understand environmental sustainability surrounding

housing displacement were reviewed. As mentioned above, environmental justice was found as

an emerging theme of the literature that considers disproportionate impact of housing

displacement (Super, 2010 and Foster & Glick, 2007). Explicit connections between

sustainability and housing displacement are few, with only a single study mentioning

sustainability explicitly in the context of sustainability of community networks being threatened

by housing displacement (Atkinson, 2000a); this arguably relates to environmental

sustainability via a triple-bottom-line paradigm (Gunder, 2006). However, when searching for

"urban renewal" or "gentrification" as a pair term with "environmental sustainability,

thousands of studies result.

The greatest number of studies at this intersection work to make urban renewal projects more

environmentally friendly in some way; policy analyses attempt to identify more durable policy

mechanisms for environmental outcomes (Bunker, 2008), surveys have attempted to show

higher quality of life associated with high-rise living in Singapore as a sustainability strategy

(Yuen, 2009), application of process tools aim to produce more consistently-accepted proposals

for environmentally-friendly designs (Lee & Chan, 2007), and summaries of previous research argue for more green cities in the name of quality of life improvements (Swanwick, Dunnett, Woolley, 2003), although the equitable distributions of benefits mentioned in these studies are not matched with any analysis of the distribution of burdens to create the projects. New Urbanists, specifically, see events that others argue are the causes of housing displacement as great opportunities for environmental sustainability (Michna, 2006 and Hebbert, 2003). But, as Michna notes in an analysis of a plan for post-Katrina New Orleans, those skeptical about the promises of New Urbanism have reason to question; a notable gap exists between how New Urbanist developments are envisioned and how they manifest in reality. Hebbert reviews the history of the movement in order to resituate its priorities; he notes that social inclusion and environmental concern have been highlighted by the paradigm and connected to urban design, but does not attempt to demonstrate these principles are manifest. Others, too, consider urban renewal strategies to be opportunities for environmental sustainability, but echo, through brief reviews of notable initiatives in sustainability, the failure to substantially consider what this "opportunity" means for equity concerns or to critically evaluate what is meant by the term "sustainability" (Brand, 1996).

Some studies consider the impacts of land use changes and their effects on marginalized groups, such as a study of landfilling techniques and their impact on rice growers (Hara, Takeuchi, Palijon, & Murakami, 2008), and several studies support the conclusion that alternative transportation systems are key to environmental sustainability through surveys (Powe & Gunn, 2008) and fiscal analysis (Mohan, 2008), although these are less successful at

considering equity concerns, favoring economic and environmental indicators much more heavily.

Other studies of environmental sustainability that acknowledge housing displacement consider whether greening strategies have succeeded at simultaneously addressing equity concerns, finding that while some housing concerns are incorporated into new buzzword strategies such as "smart growth," equity issues are largely oversimplified (Gray-O'Connor, 2009). Gender equity is starting to appear as a natural product of discussions around housing and environmental sustainability through conferences, but the intersections were said to be in the embryonic stage and the literature sparse (Brand, 1996).

Lastly, a significant subset on the literature regarding sustainability and housing displacement tackles questions of equity head-on; of the studies surveyed, those directly addressing equity universally found the notion of sustainability as it relates to equity generally and housing displacement, specifically, to be inadequate. This was demonstrated via philosophical evaluation (Cornelius & Wallace, 2011), through a survey of stakeholders (Chan & Lee, 2007); through roundtable interviews (Clarke et al., 2006); critical analysis of environmental discourse (McDonald, 1998); by presenting a feminist critique of existing agendas, theories and governance (Booth & Gilroy, 2001), and by recounting personal experiences as a participant in social movements (Ansley, 2001).

Studies at the intersection of housing displacement and environmental sustainability have been optimistic about the value of an environmental focus but have largely failed to consider equity concerns on any broad scale. Those studies which do consider equity largely point to the disconnect between equity and paradigms of sustainability purporting to include it. None of

these studies, however, compares concepts of sustainability and the paradigm by which it is being implemented in a particular case to the social concerns of the people immediately threatened by that implementation.

After reviewing the methods used in previous research to study the three elements under question here, namely, disproportionate impacts of urban renewal projects, the specific impacts of displacement, and the role sustainability plays in justifying urban renewal, three gaps in the literature are apparent:

1. Studies of disparate impact do not include personal accounts of how that disparate impact is experienced;

2. Studies of personal trajectories when facing or having endured displacement include some of these individual accounts but still relatively few; and

3. Most continue to depend upon economic and demographic data to build a convincing argument that individuals are worse-off after the phenomenon.

These studies primarily expand the body of literature demonstrating disparate impact but our understandings of what this means for actual people continues to be shallow. Studies regarding environmental sustainability and housing displacement generally fail to bring conceptualizations of the discourse into contact with the realities of implementation, and the consideration of this particular cause of displacement (green transportation) in conjunction with lived experiences is absent from the literature surveyed. Given this, the method best-suited for addressing the gaps in the literature is a mixed-methods approach which can combine statistical analysis of disparate impact to substantiate the phenomenon (as Foster &

Glick deemed necessary) with the mostly missing component: primary accounts of what it means to experience housing displacement in the name of so-called sustainability (Cresswell, 2009). A mixed-methods approach is particularly well-suited to the study of Fortaleza, as it is a city where access to quantitative data as well as official and up-to-date policy data is challenging to obtain and the multiple research methods allow for conclusions from incomplete data sources to be triangulated with personal accounts (Cresswell, 2012).

## Research questions and approaches

This research mixes a quantitative component, used to measure whether in Fortaleza, threats of housing displacement are measurably borne by the urban poor (specifically, those living in informal communities) in greater proportions than by the non-poor, with a qualitative component to explore the ways threats of displacement are experienced. First, a spatial analysis of select existing, under-construction, and proposed infrastructure projects and their intersections with informal settlements is conducted to statistically establish whether or not environmentally-justified urban renewal projects in Fortaleza are causing disproportionate impact on informal housing dwellers (asserted to be a population that represents the "urban poor" of Fortaleza). Once this is established, two qualitative components – an analysis of interviews conducted during fieldwork and a document analysis of government press releases, academic works, and mass media – are used to contextualize both the disparity and the experience of displacement in Fortaleza. The combination of these methods was used to test the following hypotheses:

1. Threats of housing displacement from sustainability-related urban renewal projects are being suffered predominantly by the urban poor.

2. Accounts from individuals facing or enduring displacement reveal important and unique patterns not found through other research methods.
3. This displacement is largely justified in the name of "greening" the city of Fortaleza, but the commitment to sustainability remains shallow.

Below, I describe in detail how these general research methods were applied to each of the three research questions.

### Question 1: Assessing Proportionality of Displacement Threats

I hypothesize that threats of housing displacement from sustainability-related urban renewal projects are being suffered predominantly by the urban poor. In keeping with scholars like Johnson and Vigdor, I use a quantitative analysis of spatial information to explore whether housing displacement threats are being experienced differentially by different groups; the groups of interest are informal settlement residents and formal area residents, where informal residents approximate "the urban poor" and the formal residents represent people with higher income levels, although it is acknowledged that this bifurcation is simplistic. The analysis considers three types of infrastructure that are currently under construction in the city and the way they interact with informal settlements of Fortaleza. The three categories of infrastructure identified by Mayor Roberto Cláudio as priority projects for creating a more sustainable city – rail, BRT, and cycle – were included in this analysis ("Roberto Cláudio dá palestra sobre sustentabilidade em São Paulo," 2014). For each of the three types of transportation, an attempt was made to analyze existing infrastructure, projects approved and possibly under construction or partially complete, and projects proposed but not yet begun. The most complete analysis possible given the available data was conducted. Table 3.1 indicates the type of infrastructure and the analysis conducted.

*Table 3.1. Type and Status of Infrastructure Included in Spatial Analysis*

| Type of Infrastructure | Project Statuses Analyzed | Comments |
|---|---|---|
| Rail | Proposed | It is known that some projects have begun, but no reliable data was found to determine what quantity of projects were begun or completed. |
| BRT | Proposed, Approved | It is reported that one or more BRT routes are in operation. However, it is not clear what portion of which routes this may be. Government reports indicate what percentage of the four BRT routes associated with World Cup 2014 projects are complete, but this information omits the status of the other 9 BRT routes in the city. |
| Cycle | Proposed, Approved, Existing | A government presentation detailed which routes fall into each category. |

## Working Definitions

The spatial analysis considers an area of "impact." The area is defined as ¼ mile or 0.4 kilometers from the route based on walkability to a source of transportation (*Transit Capacity and Quality of Service Manual. (2003).* While the Transit Capacity and Quality Service Manual and other alternative transportation advocates treat this area as decidedly a positive measure – within 0.4 kilometers of transit is considered "walkable" and therefore, an amenity – it is considered a *negative* impact area in this analysis, since this is the area also likely to need clearing for construction, and if not, likely to change in value and nature very rapidly due to the addition of a new amenity. I have described at length, above, the potential for this indirect influence, or "gentrification," to cause Fortaleza's urban poor to be displaced. Based on this historical context of direct and indirect impacts of urban renewal projects, the "impact area" identified in this spatial analysis is assumed to bring negative consequences.

"Displacement" is another term which may harbor several meanings. In this analysis, "displacement" is taken to mean a change in the physical location of one's home based on a compulsion by government and not by one's own choosing. Displacement is assumed to be a negative result, although, as explained above, some groups have decidedly greater potential to reap positive results from the change.

For each of the types of infrastructure and each individual project status, as listed in Table 3.1 above, the following measures were calculated:

1. The number of unique informal communities intersected by routes
2. The number of unique informal communities falling within an area of impact of the given infrastructure, defined as 0.4 km buffer around the route
3. The percentage of informal city space falling within the impact area of a given infrastructure.
4. The percentage of formal city space falling within the impact area of a given infrastructure.
5. The percentage of the impact area itself which is informal
6. The percentage of the impact area which is formal

### Questions 2 and 3 – Impacts of Displacement on Informal Settlement Dwellers and the Role of "Sustainability" in Justifying Disproportionate Impact

The second and third research questions are addressed by a qualitative research component. In Fortaleza, informal communities are many and diverse. As Cresswell describes (2009), a multiple case study design offers the opportunity to explore a more holistic account of the cases which were selected (details about case selections are included in *Results*) to demonstrate this diversity by highlighting communities that have one thing in common (informality) but otherwise represent great differences. Direct observation in the natural setting gave me, as the researcher, an opportunity to interpret participants' understanding of displacement by engaging directly with these people. Within each case, it was possible to reach

this degree of depth with the multiple case study design, as each case was studied via multiple in-person visits and in-depth research with secondary sources.

## Data Collection

The spatial analysis was conducted using secondary data; spatial data of informal settlements was used from the Plano Local de Habitação de Interesse Social (PLHIS)[2] conducted in 2010 while spatial data and project status information was gathered from a combination of map images presented by government officials and available via PDF, government press releases, and news reports.

As suggested by Cresswell (2009), multiple data sources were used in order to conduct the case study research; both primary (semi-structured interviews with community residents, interviews with those who do not reside in the community but associate with them, other primary data such as photos and audio and video recordings), and secondary data (government documents regarding the communities and projects that have affected or will affect them, and other, more general media) were collected regarding each case community. Although secondary data were collected in early and late 2014, the bulk of the data collection, including all of the primary data collection, occurred during an 11-week field visit from May 31st, 2014 to August 15th, 2014. A summary of data collected is provided in table 3.2.

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[2] The spatial data of informal settlements was elaborated by the PET research group at the Department of Architecture and Planning of Universidade Federal do Ceará, coordinated by Dr. Clarissa Sampaio Freitas. It was elaborated based on preliminary data provided by the municipality and contains minimal differences from the final version of PLHIS.

*Table 3.2. Data Collected, Characteristics and Sources*

| Question Addressed | Primary or Secondary Data | Data Description | Data Source Category | Sources in Category |
|---|---|---|---|---|
| 1 | Secondary | Maps | Government Presentations | 3 |
| 1 | Secondary | Government Press Releases | City of Fortaleza and State of Ceará websites | 4 |
| 1 | Secondary | News reports | O Povo, Globo newspapers | 4 |
| 2 | Primary | Semi-structured interviews | Fortaleza residents living in informal housing | 17 |
| 2 | Primary | Semi-structured interviews | Fortaleza residents living in formal areas | 4 |
| 3 | Primary | Public meeting recordings taken during fieldwork | Audio Recordings | 4 |
| 3 | Secondary | Government Press Releases or other Notices | Hard copies provided by personal contacts; government websites | 11 |
| 3 | Secondary | Mass media | Hard copy newspapers; online news sources; blogs; other mass media products | 63 |
| 3 | Secondary | Academic works | Published journals; academic databases of unpublished works | 54 |

Data Analysis

Quantitative spatial data were analyzed using a geographical information system (GIS) to calculate interactions between the two entities of interest, informal areas and selected infrastructure projects. Once raw calculations were obtained, statistics were calculated using Microsoft Excel.

Analysis of the qualitative data was an ongoing and iterative process beginning immediately following the first collections of photos and government documents and continuing through the writing process (Cresswell, 2009); a more formal coding process was used to identify themes explored in this research. This formal coding process was an inductive process (Cresswell, 2012), starting with several readings of the raw data which were then grouped into categories and further reduced to themes through several coding "cycles" (Saldaña, 2009). Although the division somewhat oversimplifies the influence that primary and secondary data had on one another, this approach was used for both the primary data, reported below in the "Interview Anaylsis[3]" in section R.2, as well as for secondary data, reported in the "Document Analysis" in section R.3.

Data validation procedures followed suggestions given by Cresswell (2009). Evidence reported below has been triangulated against the multiple other sources of data; several accounts have been sent to participants and have been exposed to other researchers familiar with the cases in order to ensure accuracy of specific finding and descriptions; a longer field visit allowed for a richer and more nuanced understanding of cases, and the results begin with rich, thick descriptions of the cases to allow readers to assess validity of the findings semi-independently of the researcher. Yet, as with any research, bias exists in the findings, and potential sources of bias are identified, next.

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[3] To respect the privacy of respondents who did not wish to be fully identified, some names have been changed in the results.

## Biases and Limitations of this Research

The primary limitations of the quantitative component of this research comes in the

accessibility of data. While data was available for all three types of infrastructure analyzed, the

sources and content of these data were disparate.  With each, the most complete analysis

possible was conducted in an attempt to illustrate as complete a picture of proportionality of

impact as possible. However, sources of infrastructure data were images; routes were

recreated in geographical information system (GIS) software which inherently involves created

inaccuracies.  All possible efforts were made to match maps as accurately as possible.

Additionally, there is a limitation in how comparable one type of infrastructure is to another

based on the differences in the data. For example, bicycle infrastructure data included detailed

maps of routes which already exist, those which have been approved for construction but are in

varying states of completion, and those which have been proposed but which have not,

necessarily, been approved. The data for rail was not available at this level of detail, thus the

ability to compare rail and bicycle infrastructure is limited. Further, any individual data source is

subject to questions and caveats that influence the accuracy of the findings of this research,

especially in a political context where transparency is limited and often under scrutiny by

critics; details regarding data limitations are considered, individually, in the *Results* below.

Secondly, the spatial implications for each type of infrastructure and how those affect the

people in surrounding areas may not be equal, even though they have been treated as equal,

numerically. Assumptions were made regarding the area of spatial impact of the infrastructure

analyzed and these assumptions may not bear out; it is likely that different types of

infrastructure would have differing areas of impact; while some impacts can be presumed to be

negative, others may be positive; as such, the numerical approximation of "impact" is limited.

This bias is partially mitigated by the qualitative components of the study which explore the ways that "impact" is experienced, whether positively, negatively, or neutrally. Still, because of this research's focus on negative impacts, it is possible that positive ones have been underrepresented.

Biases in the qualitative components of the research stem largely from language limitations (the author conducted fieldwork and document analysis with an intermediate level of Portuguese) and the limited sample of a case study. Nuances of language, and the inability to catch them when one is not fluent in a second language, cannot be overstated. While the study method allowed for depth, it traded greater breadth; I have not represented every case nor does this research offer a statistically significant sample from which to draw conclusions. As such, in both the interview analysis and the document analysis, it could certainly be possible to identify counter-cases in which the findings presented here do not resonate. The use of mixed-methods is one step this research takes to mitigate this bias; by demonstrating the quantitative evidence for the phenomenon of disproportionate burden on the poor, even if individual cases exist which may not resonate with the qualitative results of negative impacts of displacement, these would need to be understood within the context of a quantifiably greater burden carried by informal settlement dwellers.

## Chapter 4: Fortaleza and its New Transportation Infrastructure

This research was conducted in Fortaleza, Brazil, located in northeast of the country in the State of Ceará. The location is distinct in geographic, cultural, political, and demographic ways from the rest of the country and from the contexts in which many other studies regarding housing displacement and sustainability. In this chapter I describe some of the features of Fortaleza which make it a distinct research context.

Fortaleza covers about 315 km$^2$ and slightly less than 40 km$^2$ of that space is occupied by informal settlements[4] (about 13% of the city). The city of Fortaleza and the state of Ceará are located in the notably dry northeast of the country; multi-year droughts have always troubled the rural inhabitants, making agriculture and animal husbandry a precarious way of life (Gondim, 2004). Distances to other cities are long and the isolation leads to perceived delays in advances in technology and other forms of civil progression. The city developed relatively late considering its nearest metropolitan neighbors, seeing most of its growth since around the 1950s, but since then the growth trajectory has been steep (Gondim, 2004). The city is near the equator and is known by Brazilians and Europeans as a year-round beach destination; the economy of the city, today, is largely driven by tourism (Garmany, 2011).

Fortaleza's culture is deeply tied to its geography, specifically, the water; references to beaches, fishing, surfing, and *jangadas,* or small fishing rafts, pepper the tourist markets as well as the leisure schedules of locals*.* Taddei & Gamboggi write about the political culture of the Brazilian northeast which has been influenced by the harsh climate; *machismo* is valued and a masculine,

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[4] Calculated by the area measure function of ArcGIS software applied to the PLHIS shapefile of all informal settlements in the city.

hardliner approach to business and politics is favored. The non-male culture is one of passivity

and deference, which includes strong influences from colonization by Catholic missionaries.

These scholars have noted, though, the dependence on feminine expressions of power and

political finesse - for example, the leaning on social networks, which have been relied upon to

help families survive through times of hardship such as prolonged droughts. Thirdly, Fortaleza

has a long and unique history of grassroots organizing (Gondim, 2004; Cabannes, 1997;

Garmany, 2011), specifically around housing issues. Political turmoil and popular dissatisfaction

with government has been paralleled with transparency and capacity issues in the government

and following the return to democracy in 1985, Brazil's population has been very politically

vocal (Gondim, 2004).

The city is home to about 3.5 million people, having increased by almost 1 million in less than

20 years (Gondim, 2004; Garmany, 2011). About one-third of the city's population lives in

informal settlements, and economic inequality is high, with the worst Gini index of the nine

metropolitan areas of Brazil (Gondim, 2004). The city has been segregated by class since its

establishment, and growth from rural areas exacerbated this separation (Gondim, 2004).

Fortaleza's geographic, cultural, political, and demographic characteristics make it a unique

setting for the research conducted here. In spite of the distinctiveness, Fortaleza is often

overlooked for research regarding urban issues in favor of Rio de Janeiro or São Paulo

(Garmany, 2011), global cities with larger populations and urban problems influenced by a

different set of factors (albeit, along with some factors in common with Fortaleza).  This

research was conducted in Fortaleza to grow the body of empirical evidence from a diverse set

of environments in order to understand the reach – and the limits based on context – of urban policy phenomena.

## Urbanism and Fortaleza

The history of urbanism in any nation is likely to be complex and multifaceted; Brazil is no exception. This section aims not to give a full account, but to highlight some of the key political moments in Brazil's and Fortaleza's urban history that are seen as closely related to this research. First, I consider a brief history of urbanization in the Brazilian Northeast, then lead into a discussion of the economic policies of the mid- to late twentieth century; I finish with the most recent and optimistic mechanism enacted in 2001, the City Statute which both shows the character of recent public opinion and helps explain the legal context in which actions are taking place. The subsection, "Informality" will show how the populous has reacted in the face of these economic policies. The policy flavor is then contrasted with what scholars have seen empirically. Finally, I will demonstrate that "sustainability" has become one of the most recent policy objectives on the scene in preparation for a deeper exploration of that topic in the next section.

To set the context of urban renewal and its global reach (Zhang & Fang, 2004; Weber, 2002), Fortaleza, too, has been touched by this phenomenon via common policy trends. In Fortaleza, projects like Iracema Beach (a redevelopment of the beachfront to attract tourism) in the 1990s and Dragão do Mar (a cultural center including a planetarium, museums, and theaters) following just a few years later in the late 1990s (Gondim, 2004) suggested the city's "buying-in" to the urban renewal fashion as these projects resembled, in aim and form, those in the

United States (like Baltimore's Inner Harbor Project that includes a festival market, an

aquarium, and a historic ship (Robertson, 1995)); Canada (Toronto's Waterfront

Redevelopment (Hoyle, 2000)), and, famously, Spain (Barcelona's use of the 1992 Olympics as a

catalyst for urban renewal (González, 2011).

Brazil's urban history has been shaped by geography, economic policy, and religion. While most

scholars interested in Brazil have focused their research efforts regarding urban poverty and

citizenship on the huge population center that is Rio de Janeiro and São Paulo, the distance to

Fortaleza, extremeness (in terms of people affected and nature) of the poverty found there,

and the geographical uniqueness of the Brazilian Northeast argue for the city to not be lumped

together with conclusions drawn regarding the former two cities (Garmany, 2011).

Brazil's population is concentrated in several urban centers on the coast of the Atlantic Ocean.

This urbanization has been particularly rapid since the 1950s; with over 83 percent of Brazil's

people live in cities (Fernandes, 2007). In the northeast where Fortaleza sits, climatic challenges

including droughts make agriculture risky, and the precariousness of rural livelihoods due to

geography and, later, agricultural policy, has driven the rural poor to the city; Fortaleza, in

particular, has seen a "swelling" since the 1930s, and a 1960 plan mentioned the spreading

shantytowns and the low proportion of the city (only 12 percent) connected to city water mains

(Gondim, 2004).

Linda Gondim offers a brief history of housing and grassroots organizing in her article, "Creating

the Image of a Modern Fortaleza: Social Inequalities, Political Changes, and the Impact of Urban

Design" (2004). The poor were organizing, with the help of Catholic priests, to create political

pressure for social and economic solutions by the late 1950s and the response by the mid-1960s was to stimulate industrial development via tax incentives and to provide federal financing of low- and medium-rent housing. However, the persistence of a huge numbers (over 1 million people) who do not have access to the formal housing market or subsidized housing suggests that these policies were not successful. The heavy hand of the military dictatorship which lasted from 1964 – 1985 engendered a sense that the government was the enemy, a political condition furthered by the connections of the poor with the Catholic Church which has greatly influenced Brazilian life and governance since the arrival of the Portuguese.  Fueling the dissatisfaction was the patronage-style management of government under military leadership at all levels, the end of the military dictatorship saw great support for candidates of political parties that had been gathering steam with the urban poor for years; Fortaleza's first female mayor, elected in 1985, was the Partido dos Trabalhadores (Worker's Party) candidate and political sentiment, generally, was committed to ending the cronyism that had characterized the preceding decades. This mayor with such great support from the poor, though, suffered great criticism from elites, the middle class, and even grass roots social movements, and what followed was an era of neoliberalisation (Garmany, 2011). The strong legacy of organized poor which differentiated Fortaleza from cities of the Brazilian South was weakened by this political fallout, and municipal programs further weakened urban resistance movements working for social goals by co-opting community leaders who were willing to work with the governor's administration (Garmany, 2011).

All the while, during the second half of the twentieth century, low-income communities suffered demolition and neglect; while the dominant policy of the military governments was to

remove settlements and, at best, resettle residents to public housing buildings on the city periphery (Aragão, 2010), as the Fortaleza was rapidly expanding, many urban poor families were also removed from the outskirts of the city to allow for middle class growth (Gondim, 2004; Garmany, 2011). The division of the city into east and west in the first half of the century is largely blamed for the ensuing class segregation observed by many (Gondim, 2004) (Garmany (2011) cites Castells' work, *The Urban Question*, as characterizing all Latin American urbanization as inherently segregated by class), and as time marched forward, the more affluent areas saw acceleration of property values through infrastructural investments and high-density development while the poor, eastern side lacked these investments but continued to grapple with the ill-effects of industry situated there (Gondim, 2004).Projects with urban renewal characteristics in Fortaleza reflected global trends, including the two entertainment projects mentioned above, Dragão do Mar and Iracema Beach. After several years of neoliberal focus for the city, including a rebranding effort as the "Miami of the Brazilian Northeast," (Gondim, 2004), Fortaleza continues to see areas with high locational value cleared for redevelopment by private interests; today, an aquarium is being built along the beach (Duffield, 2013) and several urban transportation projects are in various stages of planning and completion which have and will require the removal of the urban poor from their homes (CE, 2013).

## Brazilian Efforts to Address Informal Housing Problems

Many efforts have been undertaken by the Brazilian government to attend to the issues of informality. Housing policy mechanisms have proven particularly important for engaging with informality at differing levels of government; the National Housing Bank had been in place

under the military government to provide low- and medium-cost housing (Gondim, 2004), but

by the end of the military dictatorship, the formal housing market was still only reaching about

a third of the population in Brazil (Maricato, 2008). In 1991 a census of favelas was taken in

Fortaleza and 314 favelas were identified, inhabited by 108 thousand families, estimated at

about 30% of Fortaleza's population (Pequeno & Freitas, 2012).  At the time roughly half of

Fortaleza's population was working in the informal sector (Gondim, 2004) and formal

employment has been demonstrated to be crucial to formal land tenure in Brazil more

generally, even if one's income is comfortable (Budds & Teixeira, 2005). Although attitudes are

changing, the primary means of "de-favelizing" the city was removal of those residents to areas

on the periphery of the city (Pequeno & Freitas, 2012).

However, some programs did aim to help informal housing residents; the *mutirão* ("effort")

program was launched immediately following the fall of the dictatorship in the mid-1980s and

in response to pressure from urban social movements (Cabannes, 1997).  This program offered

grants to community organizations as a self-help mechanism to buy building materials. Land

tenure, though, was not a part of the program, so homes built under the program continued to

have precarious legal status. This program was halted at the federal level a few years later, but

continued in Fortaleza under another program, *comunidades.* This distinction is important

because under the *comunidades* program, the *mutirões* were able to demand that the land be

given to the residents, existing groups could manage the funds rather than the requirement

that new groups be created, development was not limited to houses but included surrounding

areas and could include other kinds of features like schools, workshops, and leisure areas,

income generating components were integrated, and the program aimed at community

strengthening and job provision in addition to just housing.  About 10,000 houses were built

through this program but it fell far short of its goal of 150,000 (Cabannes, 1997). One of the

biggest limitations, though, of this program was that it did nothing for existing informal

settlements and their residents; it only supported new settlements.

*Casa Melhor* (better house), a program that followed *Comunidades* and *Mutirão*, answered the

several of the gaps left by the previous programs. In addition to reaching those people already

living in informal settlements, it was a fund that would reduce dependence on government

subsidies that may not be reliable via the mechanism of credit that was largely unavailable to

many of the urban poor, due in part to their lack of formal land tenure. This mechanism,

explicitly intended to build a bridge from no engagement in formal financial institutions to full

engagement with them, was expanded in 1995 into the *Programa de Apoio à Autoconstrução*

(Self-Help Support Program)*,* or PAAC. PAAC operates in very much the same way as *Casa*

*Melhor* but offers slightly different amounts for the savings, subsidy, and loan inputs of funding,

and the sources for subsidies are different (Cabannes, 1997).

Living in an informal settlement carries vulnerabilities that go beyond the obvious risks

associated with housing inadequacies like lack of sewer connections and inability for emergency

vehicles to traverse narrow pathways; the status of informality puts residents, especially those

in Fortaleza, in a vulnerable position because the state does not compensate them with any

consideration for the land value, but only the value of the houses built. Government does not

consider informal housing dwellers to be owners of the land (Fernandes, 2007; Freitas,

forthcoming). Their status as lower-income residents of the city (although income levels can

vary quite widely and some informal settlement dwellers earn what might be considered a

"middle income" (Budds & Teixeira, 2005)) makes *favelados* vulnerable to displacement and its harms due to their reduced economic influence, but the added element of land insecurity makes this group especially vulnerable; deficiencies of informal housing such as the lack of a formal address and formal credit subject residents to political manipulation (Gonçalves, Ribeiro, & Freitas, 2013). With Fortaleza's high proportion (over one-third) of the population living in informal settlements, there is a great number of people susceptible to the negative impacts of urban renewal-generated housing displacement.

Since the late nineties, neoliberal leanings have dismantled what much of the financial and administrative support that came from the government for housing issues. But the discourse around informal settlements had been ongoing in the whole country for decades, and the *Estatuto da Cidade* (the City Statute) was passed in 2001 which gave legs to provisions in the 1988 constitution to account for use values of space. The *Estatuto da Cidade* has required cities to update their municipal master plans to formally include provisions for the reinforcement of the social function of the property (Maricato, 2010). Indeed, the change has been seen in many cities around the country (Pequeno & Freitas, 2012) via the introduction of a variety of mechanisms, in particular, zones of special interest, or ZEIS[5] (*Zonas Especias de Interesse Social*). However, use of this mechanism reflects varying interpretations and the continued resistance to the socially progressive move; land speculation continues in spite of the new zoning (Pequeno & Freitas, 2012) and its implementation often misses the point (in Fortaleza, in

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[5] ZEIS, or Zones of Special Interest, are those created in response to the City Statute which demands that spaces plan for use values as well as exchange values of properties in Brazilian cities. ZEIS areas specifically respond to housing needs (Maricato, 2010).

particular) of accounting for the use value of space that informal residents experience instead of only accounting for the exchange value of that space (Maricato, 2010).

Informal residents tend to be uniquely positioned to realize use values of a space that may not have much exchange value, or to see a space as holding more worth in what it can be used for than what it can be sold for (Logan & Molotch, 1987). This unique perspective on the value of space comes, in part, from the original value of the space being of use rather than of economic gain and because of their distance from formal property markets (of course this is not universal; informal residents regularly derive exchange values from their space as well, including but not limited to "unauthorized" rent gathering). Space, in contrast to other goods exchanged in markets, is unique in that it is indispensable; while one can forgo a meal if they do not have enough money or walk barefoot if they cannot afford shoes, at no time can someone forgo *being somewhere.* For this reason, having secure tenure inherently carries with it the ability to *exchange value* of a place for some other thing, while not having secure tenure leaves only the ability to derive value from the use of a place (Logan & Molotch, (1987). Due to this uniqueness in the way that the urban poor have a special interest in use value over exchange value of space, the *Estatuto da Cidade* was explicitly created and intended to improve the living standards of the urban poor and provisions within it address specific issues such as *favelados*' lack of treatment as property owners; by legally recognizing the use values of space rather than only exchange values, it was hoped that poor people could not as easily have the lives upturned when the government decided that their space could be put to better exchange value (Maricato, 2010).

## Development in Fortaleza sees Influence from "Sustainability"

Urban renewal has been making its way around the globe, leaving examples in the US, Canada, England, China, and, it seems, even in Fortaleza, Brazil (see examples in preceding sections). The urbanism of the Fortaleza has shown parallels through the past several decades to the evolution of urban renewal elsewhere, particularly through strategies of state-led slum clearance to make way for private economic gain. Concurrently, an agenda of environmental sustainability has emerged ("Roberto Cláudio dá palestra sobre sustentabilidade em São Paulo," 2014; "Prefeito Roberto Cláudio recebe representantes do Banco Mundial," n.d.; "Prefeito Roberto Cláudio discute crescimento sustentável de Fortaleza," 2015) with an uncanny likeness to urban renewal in its relationship with the neoliberal agenda (Gunder, 2006).

Sustainability discourse has influenced the approval and implementation of projects in Fortaleza, too; for example, the city's is currently developing passenger rail, one of the most fuel efficient forms of transportation available (Haven, 1974). Fortaleza has planned to convert existing rail lines into a passenger system at least since 2010 when the current plan was posted to the state's website (da Escóssia, 2010). However, rail lines are conceived and operated by METROFOR, a public/private company linked to the state (and not municipal) government. Although the plans have been long in place with slow, grudging progress ("Obra do VLT Parangaba-Mucuripe terá nova licitação em dezembro," 2014), the old plans fit well into an evolving national strategy of sustainability; Law Number 12.587, of January 3, 2012, Guidelines of the National Policy of Urban Mobility, articulated three priorities (SEINF, 2014):

1. Priority to non-motorized modes and collective public transport services;
2. the integration between modes and urban transport services;

3.  **Reduce the environmental, social and economic costs of shifts in the city.**

The third priority is a direct reflection the "sustainable development" even though the exact

term is not mentioned. Although the age of the passenger rail plans suggest that they were

likely developed before the current stage of commitment to sustainability, evidence from Law

Number 12.587 and by Fortaleza's mayor, Roberto Cláudio (Lopes, 2014) suggest the current

policy climate of commitment to sustainability is a continuation and expansion of a previous

green vision; in spite of mounting difficulties of the rail project, commitment to it is

unwavering.

The timeframe of sustainability's appearance on Fortaleza's policy agenda is not clear, but by

now the importance of environmental sustainability is well-established nationally in Brazil

(Prefeitura de Fortaleza, n. d.) and more locally; Fortaleza's current mayor, Roberto Cláudio

spoke at a national forum in November of 2014 on how to live more sustainably, specifically

citing more sustainable transportation as a key action for cities to take (he specifically called for

more rail, exclusive lanes for collective transport on roadways (known broadly as "Bus Rapid

Transit" or BRT), and more bicycle lanes and paths, all of which are public projects underway in

Fortaleza) ("Roberto Cláudio dá palestra sobre sustentabilidade em São Paulo," 2014).  As

urbanization of Fortaleza continues and urban redevelopment shows no signs of slowing, it

seems that this focus on environmental sustainability is already being used as one of the latest

justifications for urban renewal as usual. In Fortaleza, sustainability seems to be the justification

for developing public works that entail a large amount of displacement of low-income informal

settlements (further defined in the next section). These projects are aligned with the urban

renewal agenda of reinforcing the exchange value of space, in spite of the progressive

instruments from the *Estatuto da Cidade*, which, thus far, have not worked to hinder this

uneven process. Table 4.1 summarizes the theoretical costs and benefits that might be

expected for residents of the city whose location falls within 0.4 km of a new transit route like

those analyzed here.

| Infra-structure Type | Formality Status | Costs | | | | Benefits | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | *Physical* | *Economic* | *Psychological* | *Social* | *Physical* | *Economic* | *Psychological* | *Social* |
| Cycle | **Formal** | Possible Construction Displacement<br><br>Stress from construction logistics (e.g. noise, detours) | | | | New amenity available | Likely property value increase, **leading to financial gain** | Esteem for home | Enhanced physical links to social network |
| | **Informal** | Likely Construction Displacement<br><br>Stress from construction logistics (e.g. noise, detours) | Likely property value increase, **leading to forceful displacement or gentrification** | Stress of threat of tenure challenge | Social network and social values disrupted if displacement occurs | New amenity available *if not displaced* | Potentially greater connectivity to labor/consumer markets *if not displaced* | Esteem for home *if not displaced* | Enhanced physical links to social network, *if not displaced* |
| BRT | **Formal** | Possible Construction Displacement<br><br>Stress from construction logistics (e.g. noise, detours) | | Potential harm caused by a move | Possible loss of social ties | Likely to have access to the new amenity | Likely financial net gain in compensation for construction<br><br>Likely property value increase as a part of a new Transit-Oriented Corridor | Lower commute times<br><br>Esteem for home | Enhanced physical links to social network |
| | **Informal** | **Unlikely** to have access to the new amenity - Likely Construction Displacement<br><br>Stress from construction logistics (e.g. noise, detours) | Likely loss of economic value if home is demolished<br><br>If home is not demolished, rising property values likely to lead to displacement | Stress of threat of tenure challenge<br><br>Stress of uncertainty of timing<br><br>Lack of alternative housing options | Social network and social values disrupted if displacement occurs | New amenity available *if not displaced* | Potentially greater connectivity to labor/consumer markets *if not displaced* | Lower commute times *if not displaced*<br><br>Esteem for home *if not displaced* | Enhanced physical links to social network, *if not displaced* |

| Rail | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | by gentrification | | | | | | |
| | **Formal** | Possible Construction Displacement<br><br>Stress from construction logistics (e.g. noise, detours) | | Potential harm caused by a move | Possible loss of social ties | Likely to have access to the new amenity | Likely financial net gain in compensation for construction<br><br>Likely property value increase as a part of a new Transit-Oriented Corridor | Lower commute times<br><br>Esteem for home | Enhanced physical links to social network |
| | **Informal** | **Unlikely** to have access to the new amenity - Likely Construction Displacement<br><br>Stress from construction logistics (e.g. noise, detours) | Likely loss of economic value if home is demolished<br><br>If home is not demolished, rising property values likely to lead to displacement by gentrification | Stress of threat of tenure challenge<br><br>Stress of uncertainty of timing<br><br>Lack of alternative housing options | Social network and social values disrupted if displacement occurs | New amenity available *if not displaced* | Potentially greater connectivity to labor/consumer markets *if not displaced* | Lower commute times *if not displaced*<br><br>Esteem for home *if not displaced* | Enhanced physical links to social network, *if not displaced* |

(Table 4.1 Continued )

## Result 1 – Proportionality of Displacement Burden by Formal versus Informal Areas

A spatial analysis was performed to determine how environmentally friendly infrastructure is interacting with informal spaces in Fortaleza compared to formal spaces.

### Spatial Data Sources

As noted in above, data was not available for all three forms of transportation in the same format or degree of completeness. Details about the data sources and calculation strategies are listed by transportation type below. For each, the information about informal settlements was sourced from the "Plano Local de Habitação de Interesse Social de Fortaleza," The Local Plan for Housing of Social Interest of Fortaleza. In order to plan for social housing a data bank was created specifically regarding informal communities in the city. This data was collected in 2010 and is available via HABITAFOR, Fortaleza's housing authority. In this resource, 848 spatially unique communities have been identified. Ten of them are not named in the data set, and thus calculations which depended upon finding unique communities fail to accurately represent the ten unnamed informal communities.

For the purposes of this analysis, this spatial data of informal areas of the city sourced from the PLHIS is assumed to represent a complete picture of informal space in Fortaleza and all other space is assumed to be "formal"; however, there are other spaces within the city for which the status is unknown, and these spaces are not categorized or catalogued on a map and could not be accounted for (C. Sampaio Freitas, personal communication, January 10, 2014).

***Bicycle Infrastructure.*** A Master Cycle Plan was proposed by "tectran," a consulting firm to the Secretaria Municipal de Infraestrutura (SEINF, or Municipal Secretary of Infrastructure) in early

2014. This proposal included maps detailing existing, "in project," and proposed (but not yet

approved) cycle routes. This data was used in conjunction with PLHIS data which details the

spatial boundaries of all informal settlements in Fortaleza (among other characteristics). Open

Street Map, available through ArcGIS software, was also used as a reference for spatial analysis

of bicycle infrastructure.

*Figure 4.1. Existing, Approved, and Proposed Cycle Infrastructure for Fortaleza, Brazil*



*Source: Plano Diretor Cicloviário de Fortaleza*

This analysis assumes that bicycle infrastructure will have a negative impact on people

surrounding it based on literature which has shown that transit-oriented (TOD) development

often leads to gentrification (Rodriguez & Tovar, 2013; Belzer & Autler, 2002; Soursourian,

2010; Hyra, 2012) and based on indications from the city's master plan (Plano Diretor de Desenvolvimento Urbano, (n.d.)) that some areas have been designated for "densification," an urbanization process that Soursourian (2010) and Hyra (2012) have linked to displacement of the urban poor (see the discussion of the results for an expanded consideration of the potential for negative impacts from bicycle infrastructure). However, it should be acknowledged that this is not a given; bicycle infrastructure may have differential impacts based on the circumstances under which it was created (in this analysis, the status of the project), as well as for different groups of people; further, any given project could have a combination of positive and negative impacts on the area around it. Existing infrastructure may not have the same "area of impact" as bicycle infrastructure created in the future, since future projects seem like they may be attached to projects for BRT or other alternative transportation modes (Lauro Vieira Chavez public meeting recording, July 25, 2014; Dias & Resende, n.d.). Still, transition of an area to be considered a Transit Corridor has been linked in other studies to displacement and other negative effects for the urban poor(Rodrigues & Tavor, 2013; Júnior, 2003) and thus existing cycle infrastructure is considered by this analysis to have had or likely to have negative impacts.

*BRT Infrastructure.* The routes considered for this analysis were depicted in a presentation made by Fortaleza officials (DIAS & RESENDE, n. d.). The map of routes in this presentation are considered to be "proposed" if they list resources for the project as "still being defined" and those which have resources identified are considered to be "approved." Not all "approved" routes have associated data regarding the status of construction; those routes for which I found evidence of construction progress are only those which were agreed upon as a condition for Fortaleza to host a portion of the World Cup 2014 games; progress is reported at

. Because of the inconsistency in information

about the completion of "approved" routes, no analysis was done on "existing" BRT routes. This

said, Table 4.2, below, indicates the percentage of World Cup-related BRT routes being

reported as complete by the Portal Transparencia; clearly, while this analysis does not indicate

any impact already endured, this is not reflected in reality.

*Figure 4.2. General Map of Bus Rapid Transit Routes for Fortaleza, Brazil[6]*



*Source: Dias & Resende, no date*

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[6] Due to illegibility, the legend has been excluded from this data source. All colored features represent BRT routes which either partially currently exist, have been approved for development, or are proposed but not yet approved, with the exception of the dark yellow route depicted on the right side of the map; this is a BRS route and was omitted from analysis. One route which was analyzed based on the source document was erroneously omitted from this source map and was drawn in GIS manually.

The Dias & Resende data regarding BRT routes included 16 distinct projects, 15 of which are

BRT routes (two routes are not explicitly indicated as BRT but due to their placement within the

data they are assumed to be BRT routes). One BRT route is excluded, as mentioned above, due

to lack of spatial data available to analyze; one other exclusion is made for the a bridge and

BRS, or "Bus Rapid Service" route, differentiated from a BRT by the use of a dedicated lane for

buses that is retrofitted into existing infrastructure without, necessarily, the need for physical

modifications of the roads except for painting and signage (although stations may be distinct,

they are not necessarily so) (Schlaikjer, 2011). Importantly, one BRS route piloted in Fortaleza

("MOBILIDADE URBANA: DESAFIOS E ALTERNATIVAS," n.d.) may have required construction of

terminals or pay stations, but did not require the expansion of avenues to include a new,

divided lane for buses as BRT does; these expansions for BRT necessarily require more space

and thus may cause displacement while a BRS system may not require displacement of

surrounding residences and other uses. While there is still a serious potential for indirect

displacement through the creation of a "Transit-Oriented Corridor" (Rodriguez & Tovar, 2013),

an equal possibility exists that a BRS system could present a positive change for current

residents surrounding it through better access to transportation. The BRS line has been

excluded from this analysis based on the lack of necessary direct displacement required for

implementation.

In total, 14 BRT routes were analyzed. Details are included in Table 4.2, below.

| Status | Route/Street Name | Type of Project | Included/Excluded | Percentage Complete |
|---|---|---|---|---|
| Approved | Antônio Bezerra/Papicu | BRT | Included | Unknown |
| Approved | Augusto dos Anjos | BRT | Included | Unknown |
| Approved | Sen. Fernandes Távora/Expedicionários | BRT | Included | Unknown |
| Approved | BR 116.Aguanambi | BRT | Included | Unknown |
| Approved | BRTCOPA - Alberto Craveiro | BRT | Included | 75 |
| Approved | BRTCOPA - Dedé Brasil | BRT | Included | 9 |
| Approved | BRTCOPA - Dr. Raul Barbosa | BRT | Included | 16 |
| Approved | BRTCOPA - Paulinho Rocha | BRT | Included | 72 |
| Proposed | Vital Brasil/ Emílion de Menezes | BRT | Included | Unknown |
| Proposed | Coronel Carvalho/Pres. Castelo Branco | BRT | Included | Unknown |
| Proposed | Av. Perimetral | BRT | Included | Unknown |
| Proposed | Av. Juscelino Kubtischek | BRT | Included | Unknown |
| Proposed | 1st Anel Expresso | Unknown, Assumed BRT | Included | Unknown |
| Unknown (Treated as Proposed) | Corredor Troncal Francisco Sá | Unknown, Assumed BRT | Included | Unknown |
| Proposed | Ponte Atilano De Moura | Bridge/BRS | Excluded; non-BRT project | Unknown |
| Unknown | Coronel Matos Dourado/Carneiro De Mendonça | BRT | Excluded (spatial data missing) | Unknown |

*Rail Infrastructure.* For this analysis, all rail lines for passenger travel that are above ground were considered for their potential impact on surrounding areas. This definition excludes a metro line that has recently been constructed and is in experimental operation in Fortaleza,

Figure 4.3. Planned Rail Infrastructure for Fortaleza, Brazil



Source:  METROFOR, http://www.metrofor.ce.gov.br/index.php/mapa-das-linhas
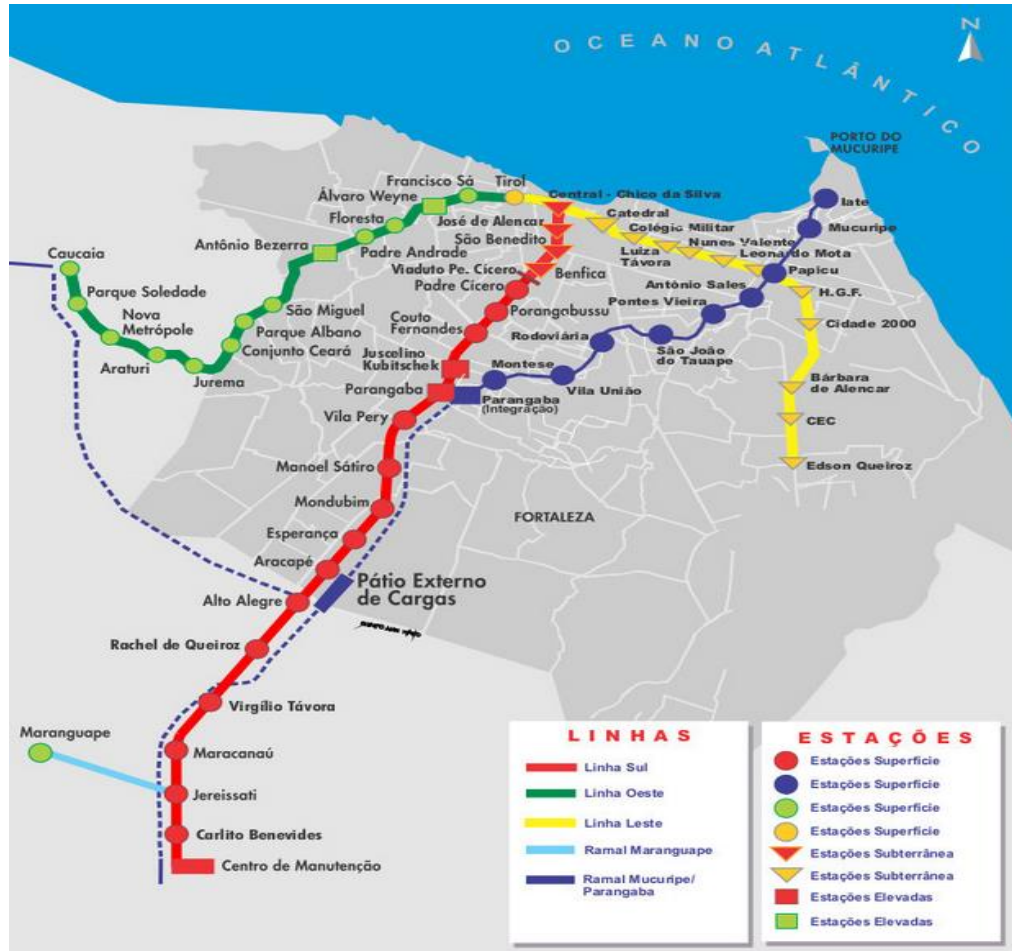
and this infrastructure likely had impacts which are not included in this analysis.

The rail routes listed in planning maps generally follow existing rail routes in the city of Fortaleza, with exceptions being those routes and stations planned to be underground. Information about rail routes is provided by the state government of Ceará ("Ramal Parangaba-Mucuripe avança com construção de vigas," 2010). This map includes stations and routes which are underground, surface level, and elevated above ground and all elevated and surface-level

routes were analyzed. Although it was visually confirmed and verified via government and news reports that at least one rail project was underway ("Obra do VLT Parangaba-Mucuripe terá nova licitação em dezembro," 2014), no data was found which indicated the status of rail lines for passenger transport in the city as a whole. As such, no calculations were made for existing or approved rail lines.

Although many rail lines for transportation were planned long ago (the map provided by the government of the state of Ceará posted the rail line plan map in 2010) and the plans cannot, therefore, be attributed to the sustainability discourse of the current leadership of the city, rail transportation is one of the most fuel efficient forms of transportation available, and this information has been available for decades (Haven, 1974). Fortaleza has planned to convert existing rail lines into a passenger system at least since 2010 when the current plan was posted to the state's website (da Escóssia, 2010). However, rail lines are conceived and operated by METROFOR, a public/private company linked to the state (and not municipal) government. Although the plans have been long in place with slow, grudging progress ("Obra do VLT Parangaba-Mucuripe terá nova licitação em dezembro," 2014), the old plans fit well into an evolving national strategy of sustainability; Law Number 12.587, of January 3, 2012, Guidelines of the National Policy of Urban Mobility, articulated three national priorities associated with transportation, the last of which identifies environmental goals explicitly (SEINF, 2014): **Reduce the environmental, social and economic costs of shifts in the city.**

Rail line plans continue to be active projects in the city of Fortaleza in various stages of planning and continue to threaten those in the planned routes with displacement; questions of the origin of these plans and their continued priority in relation to a discourse of sustainability will

be considered in the document analysis results and discussion sections, below, but in spite of

not being a product of the current local government's focus on sustainability, this analysis

treats passenger rail as a project driven by sustainability discourse.

The calculations conducted regarding formal and informal spaces only considered space within

city limits of Fortaleza; it is known that informal settlements (as well as formal spaces) exist

beyond this boundary (Júnior, 2003) and three of the proposed lines run significantly outside of

the city boundary. This analysis is thus restricted to implications of projects within Fortaleza

while they certainly extend beyond its limits.

### Findings

***Fortaleza at Large.*** Several of the calculations below include comparisons to information about

the city as a whole. The total area of Fortaleza is about 315 km$^2$ with slightly less than 40 km$^2$ of

that space covered by informal areas[7] or about 13% of the city. This leaves about 275 km$^2$ of

the city, or 87%, that is formal space[8]. In contrast to this small amount of space, it is commonly

reported that about a third of Fortaleza's population lives in informal settlements (Garmany,

---

[7] Calculated by the area measure function of ArcGIS software applied to the PLHIS shapefile of all informal settlements in the city.

[8] This is an overly simple classification of "formal" and "informal" space, as some space that falls into the "formal" category, here, is comprised of rivers and riverbanks and environmentally protected spaces, or yet undeveloped land. Fortaleza's administrative boundaries do not include any rural area, but still comprises some undeveloped land. Contrasting with the various spaces that comprise the "formal" category, all "informal" space in this analysis was enumerated as an established informal settlement with residents. Still, as in the case of Alto da Paz, an occupation may create an informal settlement on what is considered "formal" city space, and thus the numbers used in this analysis can only be considered approximations.

2011) (statistics are only available at the census tract level via the Brazilian Institute of
Geography and Statistics (IBGE)).

**Bicycle Infrastructure**. Of the 848 informal communities enumerated in the PLHIS data, 51 were
directly intersected by existing cycle routes and 71 fell within the impact zone of existing bike
lanes. Of the bicycle routes underway, 39 informal communities are directly intersected by one
of the approved routes while 79 informal communities fall into their impact zones. Proposed
routes intersect at 35 informal communities with an additional 40 informal communities
(bringing the total to 75) falling within the impact zones.

*Figure 4.4. Cycle Infrastructure Impacts on Informal Settlements in Fortaleza, Brazil*
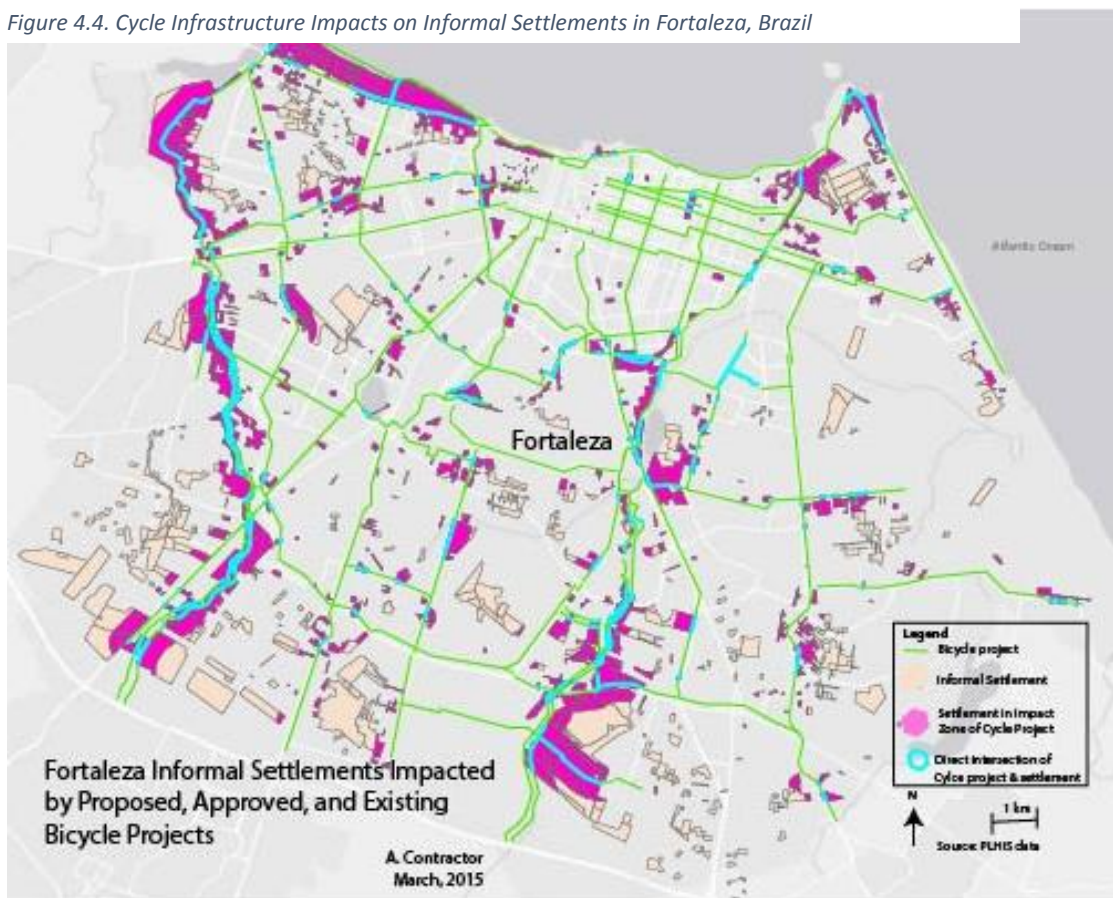
The space impacted by this network of routes is substantial for the whole city and for informal settlements in particular, with 24.78% of all informal space in the city falling within 0.4 kilometers of an existing route.  If cycle lane infrastructure were to impact formal city space and informal city space proportionally, that is to say, the policy for implementing this infrastructure was conscious of the informality within the city and intended to avoid altering the ratio of

| Table 4.3. Impacts of Existing, Approved, and Proposed Cycle Infrastructure in Fortaleza | | | |
|---|---|---|---|
| | Infrastructure Status | | |
| Measure | Existing | Approved | Proposed |
| 1. The number of unique informal communities intersected by routes | 51 | 100 | 48 |
| 2. The number of unique informal communities falling within cycle route areas of impact, defined as  0.4 km buffer around the routes | 262 | 334 | 258 |
| 3. The percentage of informal city space falling within the impact area | 25 | 38 | 19 |
| 4. The percentage of formal city space falling within the impact area | 21 | 25 | 23 |
| 5. The percentage of cycle route impact area which is informal | 15 | 18 | 10 |
| 6. The percentage of the cycle route impact area which is formal | 85 | 82 | 90 |

formal to informal space in the city, we would see that measures 3 and 5 in Table 4.3 would be right around 13% (the amount of city space that is currently "informal") and measures 4 and 6 would be around 87%. Instead, additional bicycle infrastructure that has already been approved and is "in project" according to the cycle plan (SEINF, 2014) is slated to impact an additional 38% of the city's informal space, and proposed routes could impact an additional 19% of the informal space of the city. In summary, of the 13% of the city that is informal space, about a quarter of it is already impacted by cycle lanes, 38% of the space is already on the docket to be impacted, and almost one-fifth of the space will be impacted if proposed infrastructure gets approved.

In terms of formal space, existing bicycle lanes and paths impact 21% of the formal space in the city, while 25% more formal space is slated to be impacted by cycle lanes that have already been approved, and proposed lanes possibly impacting an additional 23% of formal city space.

Formal space makes up the bulk of existing cycle infrastructure's impact area (85% of it, approximately proportional to the percentage of the city as a whole comprised of formal space), and approved projects currently underway follow roughly match that of existing cycle infrastructure in terms of the formal/informal split within the impact area; 82% of the impact area that surrounds cycle routes is formal space. In the impact areas of proposed lanes formal space falling in the impact zones of potential lanes is even higher at 90% of the impact area of proposed bicycle routes.

**BRT Infrastructure**. As mentioned above, "existing" portions of BRT routes were not reliably

| Table 4.4. Impacts of Approved, and Proposed BRT Infrastructure in Fortaleza | | | |
|---|---|---|---|
| | Infrastructure Status | | |
| Measure | Existing | Approved | Proposed |
| 1. The number of unique informal communities intersected by routes | Not Analyzed | 40 | 39 |
| 2. The number of unique informal communities falling within route areas of impact, defined as 0.4 km buffer around the routes | Not Analyzed | 187 | 191 |
| 3. The percentage of informal city space falling within the impact area | Not Analyzed | 12 | 15 |
| 4. The percentage of formal city space falling within the impact area | Not Analyzed | 17 | 3 |
| 5. The percentage of route impact area which is informal | Not Analyzed | 9 | 15 |
| 6. The percentage of the route impact area which is formal | Not Analyzed | 91 | 85 |

discernable from the data and were thus not analyzed. Eight approved routes and six proposed routes were included in this analysis. Twenty-two unique informal communities are directly

intersected by the routes of approved BRT routes, while the impact areas around those

approved routes impact 55 unique informal communities. Approved routes' impact areas were

9% informal space and 91% formal space. In terms of the city as a whole, approved BRT routes

impacted 12% of informal areas (judging by the impact areas) and as much as 17% of the formal

space of the city.

*Figure 4.5. BRT Infrastructure Impacts on Informal Settlements in Fortaleza, Brazil*
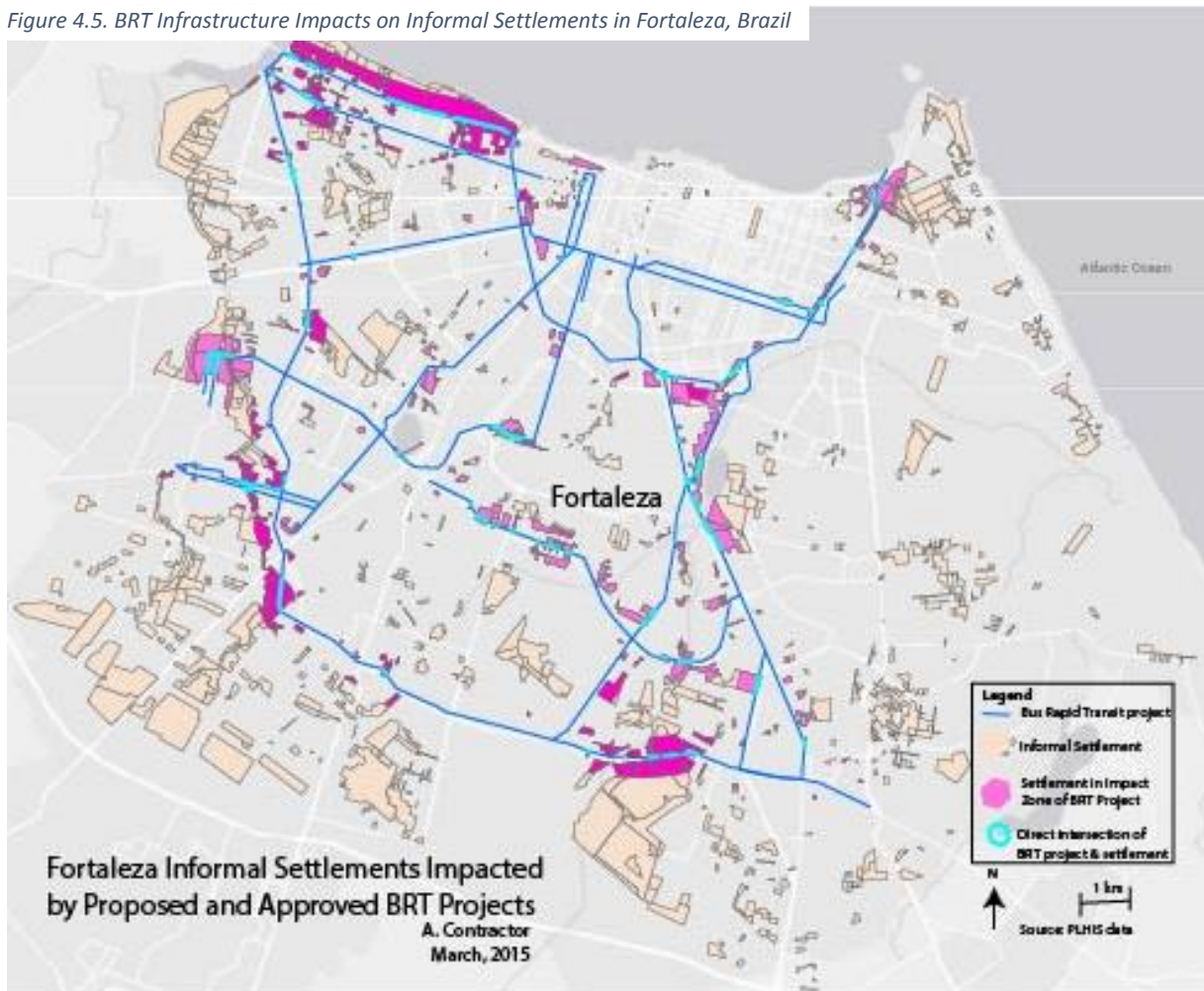


Proposed routes intersected directly with fewer informal communities (only 15), but the impact

areas reached 44 unique informal communities. The area of impact of the proposed routes is

15% informal and 85% formal; an increase in informal area impacted by percentage from the

last iteration of routes to be resourced for construction. While the total amount of informal

space in the city impacted by the proposed BRT routes is 15%, proposed routes are only slated

to impact 3% of the city's formal space.

*Rail Infrastructure.* All rail has been considered "proposed" for this analysis (see above for

explanation). Three above-ground rail routes are included in plans which were made available

via the state of Ceará's website in 2010; two additional routes, not considered here due to

differences in assessing impact, are subterranean. A map of the proposed rail lines can be seen

*Figure 4.6. Rail Infrastructure Impacts on Informal Settlements in Fortaleza, Brazil*
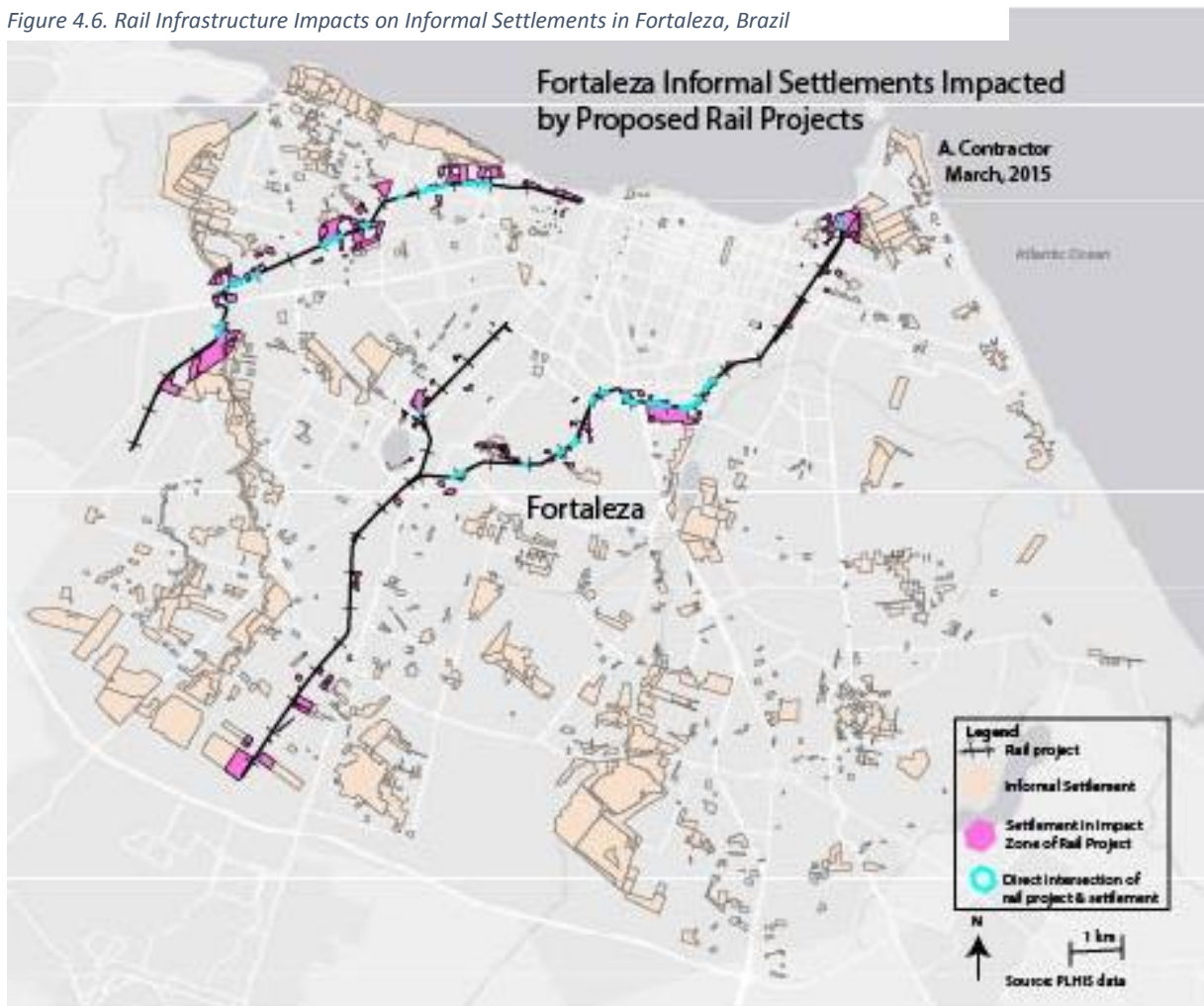


in

Figure 4.3. Note that the rail lines in this source map extend beyond the municipal boundaries

of Fortaleza (denoted by the darker grey area); rail lines were only analyzed within city

boundaries for this research.

Considering the three lines analyzed (seen in green, red, and blue in Figure 4.3), rail

infrastructure intersects 13 informal communities directly and the impact areas surroung them

impact 49 informal communities. Of those impact areas, 35% is informal space and the

remaining 65% is formal space.  Of the city at large, rail infrastructure analyzed has the

potential to impact 26% of the total informal space of the city, but only threatens 7% of the

formal space of Fortaleza. Calculations are summarized in Table 4.5, below.

| Table 4.5. Impacts of Proposed Rail Infrastructure in Fortaleza | | | |
|---|---|---|---|
| | Infrastructure Status | | |
| Measure | Existing | Approved | Proposed |
| 1. The number of unique informal communities intersected by routes | Not Analyzed | Not Analyzed | 23 |
| 2. The number of unique informal communities falling within route areas of impact, defined as  0.4 km buffer around the routes | Not Analyzed | Not Analyzed | 143 |
| 3. The percentage of informal city space falling within the impact area | Not Analyzed | Not Analyzed | 26 |
| 4. The percentage of formal space falling within the impact area | Not Analyzed | Not Analyzed | 7 |
| 5. The percentage of rail route impact area which is informal | Not Analyzed | Not Analyzed | 35 |
| 6. The percentage of the rail route impact area which is formal | Not Analyzed | Not Analyzed | 65 |

Of the three types of infrastructure analyzed here, each directly intersected informal

communities, with bicycle infrastructure intersecting the greatest number of informal

communities. While rail lines had the smallest number of direct intersections with informal

communities, the number of routes analyzed (three) is also markedly lower than other types of

infrastructure (14 BRT routes and more than 30 bicycle paths and routes). Of the 818 unique informal spaces (determined by removing any spaces with exactly the same name), all impact areas influenced over 100 individual informal communities.  Approved bike lanes influenced the greatest number of informal areas – 334 of them.

Considering the formal/informal split of the areas of impact, each type of infrastructure impacted more formal space than informal space, but not proportionally speaking. Rail lines impacted informal areas very disproportionately; while 13% of the city's space is categorized as "informal," 35% of the impact area of rail lines is "informal." Existing and approved bike lanes, as well as proposed BRT routes, most proportionally impacted informal areas when compared to the city at large (15% for existing and 18% for approved bike routes;  15% for proposed BRT routes). Proposed bike routes and approved BRT routes impacted informal areas less than would be expected given the city's split; roughly 10% for each.

To compare the rate of impact caused by each of these types of infrastructure in contrast to the city as a whole, a measure of total city formal/informal space impacted was taken. This measure shows that all three types of infrastructure have some projects which impact a much greater share of existing informal space than formal space: bike infrastructure that is approved is slated to impact 38% of informal space versus only 25% of informal space; proposed BRT routes could impact as much as 15% of informal space but only 3% of formal space; and rail impact zones cover 26% of informal space but merely 7% of formal space. To a lesser degree, existing bicycle infrastructure follows suit; 25% of the impact areas are informal while 21% are formal. This pattern across the analysis is countered by the approved BRT routes (12% informal

impact vs. 17% formal impact) and by proposed bicycle routes (19% informal impact vs. 23% formal impact).

## What this Analysis Cannot Answer

This spatial analysis measures the split between informal and formal space in the city of Fortaleza that falls within a 0.4 km buffer of proposed transportation routes. This buffer has been used as a measure based on urban planning literature and tools which assume that this space surrounding new transportation routes will receive impacts; typically these impacts are assumed to be positive, but in this analysis there is an assumption that, especially for the people residing in the informal spaces, the impacts will be negative. I will discuss this at more length in Chapter Six. This analysis does *not* measure whether the impacts themselves are positive or negative nor does it give any numerical measure of the proportion of negative to positive impacts. Further, this analysis does not measure, quantitatively, the potential positive and negative impacts by status of formality. Thus, the conclusions that can be drawn from this analysis are limited to a basic understanding of the formality/informality split of the occupancy of the spaces immediately surrounding the given transportation routes and further analysis would be needed in order to quantify the positive and negative bearings on each type of space.

# Chapter 5: Triangulating Disproportionate Impact with Experience

The previous chapter provides an introduction to Fortaleza's context, the three case study communities, and some numerical evidence that informal settlement dwellers are facing impacts of sustainability-focused transportation more than residents of formal areas of the city. In this chapter I share the results of the qualitative portion of the study which includes an analysis of interviews conducted with 20 participants, 17 of whom live in informal settlements, as well as a document analysis which considers a variety of media sources that build the discourse driving Fortaleza's urban decision-making.

## Result 2 – Effects of Displacement Threats Experienced by Informal Community Members

Because informal residents are at greater risk of displacement than formal residents of Fortaleza, it naturally follows to ask, what does this mean for those residents? What *are* these effects, especially if displacement has not yet occurred? The following describes the results of the qualitative study aim to explore this question.

Three informal settlements were selected as cases to further explore how threats of displacement were being experienced by informal housing dwellers. The three cases were chosen with the commonality of previously or currently facing displacement threats. In choosing cases, geographical, historical, and character diversity were sought. Once identified, several visits were made to each community and with community members (sometimes outside the community). Interviews were conducted with community residents which often included the review of news, government, and community-generated documents and other media. Below I describe the three case communities; then, results from the semi-structured

interviews are presented. For further details about the respondents whose contributions are included here, please see the **Appendix: Respondent Descriptions**.

### Community 1: Alto da Paz

*"[Alto da Paz] foi calma, ninguém foi lutando; foi tantas familias."*

*[Alto da Paz] was calm, nobody was fighting; there were lots of families.*

*– Lidianne, Alto da Paz Resident*

This community was completely demolished in February of 2014 and residents have dispersed

*Figure 5.1. Location of Alto da Paz*



to other communities, some nearby and some far outside the city (Raquel, personal communication, July 3, 2014). The area was cleared not as a direct result of a green project, but because the land had been identified for building a housing estate to accommodate those displaced from another community due to an urban renewal project called "Aldeia da Praia" (Barreira, 2013) (see more in Community 2: Serviluz). The link to green transportation infrastructure is indirect but present; the BRT and cycle infrastructure that is threatening Serviluz is the reason for proposed construction of a housing complex on the Alto da Paz site for those displaced; this, in turn, has displaced the residents of Alto da Paz.

After displacement, many residents were forced to live on the street after the demolition of their homes (Raquel, personal communication, 24 July 2014). Advocacy and independent media

organizations captured the destruction on video and still camera, as did many residents. As the

youngest of the three informal communities studied Alto da Paz was established two years

prior to complete demolition in February of 2014 (Nígeria, 2014), Alto da Paz was a product of

the overcrowding found in other, nearby, informal neighborhoods. This challenge of informal

settlement is formally recognized via the designation of ZEIS type 3 areas, those designated for

vacant land (Pequeno & Freitas, 2012). Families who had outgrown their current locations built

homes on a vacant plot because they could not afford formal housing and had no more space

to expand their existing informal communities (Glaucia, personal communication, July 24,

2014).

Seen in the spatial data collected by the PLHIS (see Figure 4.4, above), Alto da Paz was located

on previously vacant land in the northeastern side of the city where there is a great

concentration of informality. No resident had formal title to the land, evidenced by the eviction

that occurred (the eviction of February 2014 would have seen legal recourse if occupants had

held title to the land) and some former residents referred to the community as "the

occupation" (Glaucia, personal communication, July 24, 2014), in keeping with other acts of

resistance among those without sufficient housing (Garmany, 2008).

 Alto da Paz was identified prior to fieldwork via contact with Urucum, a collective of lawyers

which previously worked with residents on claims of human rights abuses. By the time of the

field visit the entire community had been demolished, though Urucum staff continues to be in

contact with several of the former residents. These former residents reported jobs like parking

attendant, restaurant server, or construction worker. Although it was not possible to visit Alto

da Paz when structures were still standing for this research, videos show housing made of brick

and plaster with tile roofs, the same construction found throughout the city in formal and informal neighborhoods.

The area has been dominated by polluting industries, such as a petrol refinery, for decades due to the nearest access to the coast from this part of the coastal city being characterized by a cargo port (Freitas, 2004). Moving south along the coast, though, one finds beaches and *barracas,* or beach huts, that are the heart of the beach culture of the city (Barracas, n.d.); proximity to these beaches is highly desirable and has been fueling the growth of high-rise apartment buildings in this area (Freitas, 2004) as informal communities and their notorious reputation as dangerous areas (Sousa, 2004) persist in the nearby areas deemed inappropriate for development, such as in the sand dunes. Topographically, this part of the city is hilly while the rest of the city is quite flat; sand dunes which are in constant shift make the area difficult for construction which may have led to the delay in demand for the area (Freitas, 2004). It is still a checkerboard of developed and vacant property, and some of the vacant properties have been designated as ZEIS by the municipal master plan of 2009 ("Comitê Técnico vai definir critérios para regulamentação das ZEIS," 2014) that followed recent City Statute guidelines.

### Community 2: Serviluz

*"O Serviluz já tem uns 70 anos, nessa faixa, então por que a gente gosta de morar aqui? Porque aqui nós temos nossa ilha, nós temos o mar, nós temos o mar onde a gente, oh, a gente cria nossos filhos aqui, a gente não tem uma praça, a gente não tem um salão de futebol, uma quadra, não temos. Mas nós temos o mar, a beira da praia, nossos filhos já nascem querendo ir pra praia, entendeu?... Nós gostamos daqui porque tem a vizinha do lado direito e tem a vizinha do lado esquerdo, que quando eu não tenho o óleo, quando eu não tenho a farinha, quando eu não tenho o arroz, a vizinha me dá um pouquinho e eu dou um pouquinho à vizinha, entendeu? Quando eu vou sair e não tem com quem deixar meus filhos, a vizinha olha. Quando eu não tenho dinheiro,*

*eu só vou receber daqui a um mês, eu vou ali na mercearia e digo: "Anota aí num caderninho, porque eu só vou lhe pagar final do mês". Eu não vou morrer de fome.*

*Serviluz has been here for 70 years. Why do we like living here? Because here we have our island, we have the ocean. We have the ocean where we raise our kids. Even though we don't have a square or a football pitch, but we have the sea. Our children are born wanting to go to the beach…We like it here because we have neighbors on the right side and on the left side that when I don't have oil, when I don't have flour, when I don't have rice, my neighbor gives me a little and I give a little to my neighbor, understand? When I need to go out and I don't have anywhere to leave my kids, my neighbor will watch them. When I don't have money and will only receive it here once per month, I go there to the market and say, 'can you mark down in your little notebook because I can only pay at the end of them month.' I won't have to go hungry.*

*-Meire, Serviluz Resident*

Serviluz, the second community selected, is currently threatened with displacement by a

project agreed upon with FIFA as a condition for Fortaleza's privilege of hosting several World

Cup, 2014 games. This project

includes a cruise-ship port, tourist

plaza, and road widening to

accommodate BRT (Portal da

Transparência - Copa 2014, (n.d.)

and an accompanying cycle lane.

The modifications planned call for

the demolition of beachfront

homes but lack promises of



Figure 5.2. Location of Serviluz

improvements for many of the homes or infrastructure a few rows inland (see video prepared

by the city of Fortaleza and sponsors, "Projeto Aldeia da Praia", n.d.). While news reports have

cited City Hall's intention to benefit 2,100 families out of the 21,000 residents in Serviluz with

improved homes (Oliveira, 2011), details for how residents will be compensated for the loss of their homes is missing and other agreements for informal settlement dwellers do not instill a basis for trust (see description of Lauro Vieira Chavez, below). Residents facing removal for these projects have been promised that housing will be built to accommodate them (see the reference in the "Projeto Aldeia da Praia" video), and that housing is to be located in the area from which Alto da Paz residents were removed.

Located near Alto da Paz on the eastern coast of Fortaleza, Serviluz was chosen for this research because of its residents' long history and strength for resisting displacement, as well as many active connections to academic and advocacy liaisons, this community is a symbol of the fishing and *jangada* (small fishing boat with a sail) culture that characterizes the whole state of Ceará ("Centro Dragão do Mar de Arte e Cultura," n.d.) as well as surf culture that has dominated popular identity there for decades ("Fortaleza recebe Surf City, evento que debate aspecto cultural do esporte," 2014). Serviluz has produced several world-class surfers; professionals such as André Silva (Barreto, 2010) and João Carlos Sobrinho (Andrade, 2010) were born or cut their teeth (or first waves) here and many households continuing to rely on fishing for income and sustenance. But the water-based culture is no less robust and a source of pride with a 2010 news story reporting 20% of the population of Serviluz depending on fishing for their livelihood (Moscoso, 2010); the *jangadas* are still the dominant vessel in use up and down the coast of the state of Ceará and are an icon of handicrafts, songs, and stories that betray their cultural importance within and beyond Serviluz ("Centro Dragão do Mar de Arte e Cultura," n.d.). The fisherman are considered brave and tough, and those who are skilled can make a good living. Fishing is a necessity in this community, too:

*"Nosso paraíso é o mar aqui, entendeu? Nós gostamos daqui, porque aqui nós temo nosso peixe. Quando é época de piaba, o peixinho bem pequenininho, a gente pega o peixe. Eu não vou morrer de fome."*

*Our paradise is the sea, here, understand? We like it here because here we have our fish. Even in times of poverty, we can get the small, tiny fish… if my pay is late, I know I won't live with hunger.*

*– Meire*

During the period that Serviluz has faced removal for the cruise ship port, beachfront plaza, and road widening, residents have resisted displacement in through protests, grassroots organizing, and engaging in the development of alternative plans (Barreira de Vasconcelos, 2013); residents reported that the location of their homes is unique and crucial to their well-being and livelihoods. Meanwhile, homes continue to be physically marked for demolition. With its long and documented history, its wealth of leadership but persistently fractured nature and continuingly violent reputation in spite of the positive attributes, Serviluz offers a unique lens into how and why threats of displacement happen.

The PLHIS data enumerated 679 households in Serviluz which are divided into at least three distinct communities, but Serviluz is often thought of as a single unit by outsiders, according to Meire. She relayed that the communities composing Serviluz have distinct leaders, priorities, and problems, with some areas even being referred to as *the favela of the favela*.  Homes within Serviluz vary widely in terms of style and quality; as with most informal settlements I saw in Fortaleza, there is no visible distinction between styles and quality of the formal neighborhoods adjacent. Certainly, within Serviluz one may notice streets and homes that are particularly small or dilapidated, but these can also be found in formalized areas of the city.

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Holding a legacy of one of the oldest informal communities in the city with at least 70 years of history (Moscoso, 2010), Serviluz has a reputation both as an icon and as a persevering entity (Maia, 2013). With origins as a fishing village (Moscoso, 2010), Serviluz and its component communities have always been characterized as "informal" and the area has been enumerated as such by HABITAFOR (HABITAFOR, 2010).

Located directly on the beach, Titanzinho, one of the sub-communities of Serviluz, is plagued by constantly blowing sand such that homes left unattended are consumed by dunes and streets require periodic plowing or clearing by trucks in order to be passible (Mariana, personal communication, August 6, 2014). Situated very near an existing cargo ship port, the other side of Serviluz abuts an oil refinery of the state-run oil company, Petrobras. Due to environmental hazards like this and the struggle with the sand, the desirability of the beachfront area is tempered. Still, the area has been threatened by removal repeatedly:

> *"Então é por isso que entra governo, sai governo e nós somos ameaçados, ameaçada, ameaçada, ameaçada à remoção...A gente entende que o interesse deles, do capitalismo, o interesse empresarial, o interesse da especulação imobiliária dentro da área que a gente moramos é de expulsão mesmo."*
>
> *The government comes in and we are threatened, threatened, threatened, and threatened. With removal…We understand that that their interest is capitalism. Business interest. Property speculation interest within the area where we live and they want to expel us.*
>
> *– Meire*

Areas immediately surrounding Serviluz have already seen high-end development; to the south-east, the beach is booming with restaurants and resorts capitalizing on the natural features of sand and water. Just inland from Serviluz, high-rise condominium buildings have been built since the 1970s (for images from that time, see "Pretérito passado, 2012").

## Community 3: Lauro Vieira Chavez

*"...se for removido, que tenha alguns benefícios, né, o benefício para melhorar
a situação da gente porque,assim, não adianta fazer uma mudança dessas
pra você se mudar de seu local...você já tem uma vida muito boa e nós temos,
né. Mas se você já não tem uma vida muito boa, não tem uma estabilidade
boa, e aí você ser retirado do seu local vai se tornar pior do que você está,
então isso não tem lógica, né?"*

*...if we are going to be removed, we should have some benefits, right? The
benefits to improve the situation we are in because there is otherwise no point
in making a change in your location...if you already have a good life like we
do. But if you do not already have a good life, have much stability, and you
leave this location it will be worse than where you are, then this is not logical,
right?*

- *Ivanildo, Lauro Vieira Chavez resident*

*Figure 5.3. Location of Lauro Vieira Chavez*



While Alto da Paz has already endured a wholesale removal and Serviluz has been threatened for years but has yet to endure evictions, the Lauro Vieira Chavez community is somewhere in the middle, having been threatened by removals several times and having endured removal of some residents but not all who were initially threatened. The Lauro Vieira Chavez community was threatened with displacement due to its locational conflict with plans for the VLT (Veículo Levesobre Trilhos, or light rail; one of the lines analyzed, above). Residents negotiated reductions in the number of demolitions from 203 buildings (40% of the community) to 66 (13% of the community) but only 53 houses have been demolished and space where the other 13 sit is reportedly not needed for the VLT any longer (Melo, 2014), so only 53 homes have been demolished for the project (10.5% of the community) (Freitas,

forthcoming). Those 53 homes were demolished in 2013 (Matos, n.d.), but other features of the

negotiation, such as the housing promised to some of the displaced families and planned for

construction on a nearby vacant plot, have yet to progress; this was visually confirmed via a

visit in July of 2014 to the site where housing is to be constructed (G. Matos, personal

communication, July 1, 2014). In July of 2014, Lauro Vieira Chavez community leaders learned

of a new threat; an avenue is to be constructed that will require most of the homes in the Lauro

Vieira Chavez community to be demolished (Cláudio, personal communication, July 2014). This

avenue will accommodate an exclusive BRT lane as well as an exclusive bicycle lane. Community

leaders were able to obtain planning documents that indicated intentions for the avenue, but

details were scarce.

The research relationship with this community was founded on connections with academics

who had been working with Lauro Vieira Chavez and knew of the community's history and

success organizing and negotiating against the threat of displacement posed by the VLT. A

rather small community, official numbers say that there are 506 households (HABITAFOR,
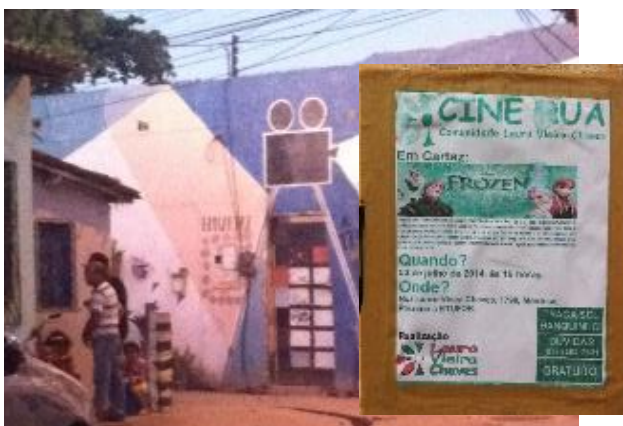
2010); while residents report that the neighborhood



*Figure 5.4. "CineRua" decorated exterior wall and event poster advertising the upcoming screening of "*Frozen*", July 2014.*



*Figure 5.5. Entrance to Lauro Vieira Chavez, July 2014.*

hosts a smaller number of households (Ivanildo, personal communication, August 7, 2014) and that the remainder are actually a part of a different community. Lauro Vieira Chavez is much denser than Serviluz with only about one-third as much land area but three-quarters the population. Lauro Vieira Chavez homes are mostly two stories and are characterized by the common brick and plaster architecture and clay tile roofs of much of the city. When the neighborhood was established, it was far from the city; the airport (adjacent) decided to locate there precisely for the distance from the city (Gonçalves, Ribeiro, & Freitas, 2013).

Within many other informal communities as neighbors, Lauro Vieira Chaves carries a reputation for danger and disorder that were neither observed during visits nor reported by residents or by other scholars (Gonçalves, Ribeiro, & Freitas, 2013). The specific location is important to residents; their proximity to city services like major bus stops, hospitals, schools, and businesses are crucial to residents' livelihoods and lifestyles. Although the community is informal, many people own businesses in the community or in a formalized property nearby. The community is near three ZEIS areas, two which have been characterized as "vacant" (ZEIS III) and one which is a ZEIS II, or joint municipal area (Pequeno & Freitas, 2012).

Interview Analysis

Eight major themes were identified in the semi-structured interviews (conducted with 17 residents of informal settlements and 4 residents of formal areas of Fortaleza) and supplemental material reviews; the four most prominent themes (those with the greatest

Table 5.1. Qualitative Themes and Selections.

| Theme | Number of Subthemes | Number of Comments Within Theme |
|---|---|---|
| Class Discrimination* | 16 | 43 |
| Power* | 12 | 50 |
| Meaning of Home* | 10 | 34 |
| Failure of Government* | 7 | 24 |
| Value of Location | 6 | 15 |
| Speculation | 6 | 15 |
| Gender Disparities | 2 | 9 |
| Security | 2 | 8 |

*Items with an asterisk are included in this analysis.*

number of subthemes in the interviews) are included here and listed in Table 4.6 as most

germane to the question of how the threat of displacement is felt by members of informal

communities.  This section includes the results of the interviews with support from

documentation, while the majority of the official narratives, found in government press

releases and mass media, are reserved for the "Document Analysis" which constitutes the

following section.

***Class Discrimination***

Class discrimination is one of the most commonly mentioned perceptions mentioned as a result

of displacement threats. In interviews with informal community residents, this theme emerged

43 times within 16 subthemes and was raised by residents of all three case communities as a

way that respondents understood why they were facing these threats.  From Alto da Paz,

Raquel told me that having been removed from the community was, fundamentally, about a

lack of respect for her and her neighbors as people. She said, *"Eu ouvi ele falar que queria tirar*

*os ricos de nós, do meio dos pobres." (I heard [the mayor] say he wanted to get rich from us,*

*from the poor.)* Rubens, also having been displaced from Alto da Paz, said, *"Os pobres são*

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*almeaçadas sempre. Voçê nunca está seguro."* (*Poor people are targets over and over again.*

*You are never safe.*)

From Lauro Vieira Chavez, three different participants mentioned feeling discriminated against.

One female respondent who asked for identity to be protected said, *"É um projeto muito antigo*

*da cidade, procurando meios a tirar-nos a sair* (*It's a really old project of the city, trying to get us*

*to leave.*)  Ivanildo said,

> *"Remoção, quem remove é lixo né, lixo é que é removido, né, e a gente é ser*
> *humano, a gente não é pra ser removido. Mas eles dizem que quer remover a*
> *gente, eles tratam os moradores, as comunidades como um lata qualquer, ou*
> *uma garrafa de PET, que está no meio da rua, e remove dali ou chuta pra bem*
> *distante."*
>
> *(Removal is for trash, right? Trash gets removed. But we are human. We are*
> *not a thing to be removed. But they say they want to remove us. They treat*
> *the residents, the communities, like a can or bottle in the middle of the street,*
> *and remove us from here to some place far away.)*

And Cláudio, told me

> *"Normalmente os mais penalizados e os que pagam pelo progresso são os*
> *pobres... desse poder econômico, que tinham o dinheiro, eles também por ter*
> *o dinheiro, ele dominavam outros aspectos da sociedade. Dominava a política,*
> *dominava a cultura, dominava a economia, determinava tudo isso aí.*
> *Dominava os meios de comunicação de massa e fazia com que os demais, sem*
> *esse poder econômico, ficassem a mercê deles.*
>
> *E como há uma necessidade do poder local de desenvolver a cidade,*
> *desenvolver uma série de projetos, aí eles vão procurar aqueles locais de*
> *ocupação, porque é mais barato, porque não tem a resistência daquelas*
> *pessoas abastadas pela, porque quem é abastado tem bastante poder. Tem*
> *gente influente, e aí é mais difícil mexer. Aí eles vêm exatamente pra esses*
> *locais de ocupação.*
>
> *dirigentes, ele reflete uma classe social, que é a classe social dos de cima, dos*
> *que tem poder político e econômico. Eles são espelho dessa classe. Então essa*
> *classe vê com os pobres como os fracassados e se nós somos pobres, a culpa é*
> *nossa. A visão que eles normalmente tem assim, obviamente que tem uma ou*

*outra pessoa mais avançada, que são da classe de cima, que sabe que isso aí é um fator social. Tem fatores históricos envolvidos, mas normalmente eles pensam que 'oh, a culpa de ser pobre é deles mesmo.'"*

*(Usually the most penalized and those who pay for progress are the poor… those with economic power dominate other aspects of society. They dominate politics, culture, determine all of this. They dominate means of communication, and caused the other, without this economic power, to stay at their mercy.*

*..As there is a need for local authorities to develop the city, develop a series of projects, then they will seek those [informally occupied] places, because it is cheaper, because it does not have the resistance of those wealthy people; for who is wealthy has power; influential people are more difficult move. Then they come to exactly these occupation sites.*

*…the leaders reflect a social class, which is the class of the above, those who have political and economic power. They mirror this class. So this class sees the poor as the failed and we are poor, it is our fault. The vision that they usually have is that obviously they are more advanced people, which are of the top class, you know that there is a social factor. Has historical factors involved, but usually they think "oh, it's their fault they are poor".)*

And from Serviluz, Ribamar and Meire offered concrete examples:

*"No Titanzinho aqui nós temos mais de 200 famílias mora ou cohabitado ou mora alugado. Aí a prefeitura quer tirar nós que moramos aqui pra dar espaço a o quê? A uma praça. Como é que a pessoa tira mais de 500 família, que já tem uma história, que construiu o bairro, que tem seus laços familiares, certo, seus laços das amizades, certo, possui uma colônia de pescadores, a maior parte são pescadores aqui, pra dar espaço pra uma praça. E aí a prefeitura ainda diz que está beneficiando o bairro, que está beneficiando a comunidade.*

*As remoções, nós temos doze comunidades, entre o bairro da Parangaba e a Mucuri, que é aonde passa o VLT, certo, Veículo Leve sobre Trilhos, certo, imposto pelo governo estadual. Então são doze comunidades sendo atingidas, na média de 22 mil – 25 mil pessoas, que vão ser obrigadas a sair de suas moradias no corredor aonde passa o trilho, certo. Então o pior de tudo é que aonde tem comunidade, eles removem, mas onde tem os muros dos ricos eles não mexem. Então eu tenho um terreno e eu sou rico, certo, eu digo não, eu só vou vender meu terreno por tantos milhões. E aí o governo não mexe. Mas aí eu tenho a comunidade que está lá plantada a 20, 50 anos, eles tiram de qualquer jeito, eles tiram de qualquer jeito."*

*(In Titanzinho [a sub-community of Serviluz] more than 200 families live or cohabitate or rent. Then the city wants to take us who live here to make room for what? A square. How can someone take more than 500 family members, who already have a history that built the neighborhood, who have family ties, right, ties of friendship, right, have a colony of fishermen, (most here are fishermen), to make room for a square? And then the city still says it is benefiting the neighborhood, which is benefiting the community!*

*We have twelve communities on the line between Paranagaba and Mucuripe which is where the VLT, right, the Light Rail, is going to pass…So there are twelve historic communities – average of 22,000 – 25,000 people who will be forced to leave their homes in the corridor where the trail goes, right. Then the worst of all is that where there's community, they remove, but where has the walls of the rich they do not move. So I have a plot and I'm rich, right, I say no, I'll just sell my land for so many millions. And then the government does not move [them]. But then I have a community that is there for 20 or 50 years and they take anyway, they take anyway.)*

*– Ribamar*

*"Esse é um governo que ele só trabalha pro rico. Se a gente avaliar hoje, tem muita gente morrendo, muitos moradores de beira de pista, de estrada, no Brasil, que chora pela uma, pela uma, pela uma passarela pra atravessar a BR. O nosso governo tá fazendo passarela, uma passarela em frente o Iguatemi, uma passarela em frente ao Centro Social, Centro de Eventos e uma passarela na Bezerra de Menezes em frente o Colégio Militar. Ele tá favorecendo quem? Só o rico, né?"*

*(This is a government that it only works for the rich. If we evaluate today there are a lot of people dying, many residents living beside the BR [highway] in Brazil. For each one, there are cries a walkway to cross the BR. Our government's doing a catwalk, a footbridge across the Iguatemi, a walkway in front of the Social Centre, exhibition center and a walkway on Bezerra de Menezes in front of the Military School. He's favoring whom? Only the rich, right?)*

*- Meire*

In Fortaleza, over 30% of the population lives in informal housing (Garmany, 2011) and that informal housing has recently seen demolitions primarily for tourism infrastructure (Dip, 2012); this tourism infrastructure includes roadway updates leading to the football stadium, aquariums, and hotel upgrades Portal da Transparência, n.d.). In contrast, projects for social

housing have stalled and mention of improving infrastructure within informal areas, such as installing basic sanitation like sewerage, is virtually absent from the policy conversation, in spite of this being a dominant concern for members of each informal community included in the study (Glaucia, personal communications, 24 July 2014; Ivanildo, 7 August 2014; María Fatima, 6 August 2014).

While research participants spoke about their experience being discriminated against almost exclusively in terms of social class (Ivanildo and others frequently used the term "class apartheid"), it is hard not to wonder if there is a racial element to the discrimination they feel. Barros (1995) has demonstrated that racial discrimination is a pervasive phenomenon in Brazil and is often linked to the treatment of *favelados* (slum dwellers). Remembering Brazil's colonization by the Portuguese but also significantly by Germans, many Brazilians have a Caucasian appearance. By contrast, the history of informal settlements in Fortaleza is largely that of emigration from the interior of the northeastern countryside (Gondim, 2004), a place notorious for its harsh desert geography (Ferreira, 2001) and known to be an area of the country home to many of Brazil's native peoples. Locally, Meire mentioned that *"Que jovem vem da periferia, porque é negro, porque ele é pobre, ele é sempre é preso, entendeu?" (…young men come from the periphery, because they are black, because he is poor, he is always stuck, you know?)*

At least one participant from each of the three case communities relayed their own history of immigrating to the city from the interior or that of their parents, and several specifically mentioned their native lineage (personal communications, Meire, 6 August 2014; Rubens, 3 July 2014; Cláudio, 7 August 2014). While formal residents may very well have genealogical links to

Brazil's interior, too, formal areas lack the systemic history of emigration from these places dominated by dark-skinned groups of people; instead, the history of Fortaleza's formal area has been that of settlement by the "ruling classes"(JÚNIOR, 2003) which, in Brazil, was a group linked to European heritage (Gondim, 2004).

It is difficult not to notice, when one enters Alto da Paz or Serviluz or when speaking to former residents of Alto da Paz, the darker skin tones of the people. In a country beset with racialized class history (Brazil was the last nation in the world to outlaw slavery, with people of African and indigenous decent being enslaved) (Skidmore, 1993), the lack of mention of racial dimensions to the discrimination felt by Fortaleza's informal residents may not represent the whole picture of the treatment they receive.

### *Power*

Notions of power and who holds it was the second most prominent theme identified in the interviews, having 12 subthemes and receiving at least 50 comments from participants. The most significant of these subthemes was what power informal housing residents felt they were able to wield and why these participants felt they had a different amount and kind of power than other people; they aren't the first to notice: Epstein, writing about governance conflict around land use, says, ""The persons who have a stake in local government decisions often do not have anything close to equal representation or access to the political process" (2009). Two notable but more minor subthemes included the intersection of power with economics and obligations of the powerful. I will explore each in turn, below.

#### *What Power do the Urban Poor Have?*

*"...fica muito mais fácil pra eles mexerem com essas pessoas. O que resta pra essas pessoas é a resistência, é a organização. E é isso que nós fazemos."*

*(It is much easier for them [the government] to mess with these people [living in informal communities]. What is left for these people is the resistance, is to organize, so that's what we do.)*

*-Cláudio, Lauro Vieira Chavez resident*

Brazil passed the city statute in in 2001, a landmark decision to recognize the right people have to *use* space as well as to *exchange* it for monetary gain (Maricato, 2010). One of the most important mechanisms by which people can claim the right to use space even if they are not demonstrating the exchange value, via this law, is the right to participatory processes by the government. In spite of the statute approaching its 15th anniversary, residents have not been able to successfully hold government bodies accountable for effective participatory processes; in response to a new threat of displacement in Lauro Vieira Chavez, a BRT line which threatened to remove most of the homes in the community, leaders asked the municipal government to come to a community meeting and explain the project.  In spite of agreement to do so, the representative who arrived was a social worker prepared only to inform community participants of the value of registering their homes on an official list; this representative had no information about the project which threatened the community. Speaking of a similar but different threat of displacement, one participant said

*"Bom isso aconteceu em vários bairros de Fortaleza, é, muitos bairros que sempre estiveram ameaçados de remoção." Sempre, há anos, que as pessoas há 50 anos existe uma discussão de que 'Ah o governo vai fazer um projeto, vai tirar vocês'. Isso não aconteceu. Mas aí dessa vez, aconteceu.*

*Primeiro aconteceu muita falta de informação. As casas das pessoas eram marcadas, e ai a partir disso que as pessoas sabiam que poderia acontecer alguma coisa. Ai na hora de fazer uma reunião com a comunidade para discutir o projeto, o que acontecia é não discutia o projeto, o governo*

*simplesmente apresentava... ou fazia uma apresentação muito superficial que não dizia que as pessoas realmente iam sair, quem ia sair, porque, quando, ou então, assim, era coisa da burocracia do projeto, essas coisas que eram apresentadas. E aí era isso que eles botavam no papel: 'fizemos vinte reuniões', como se tivesse discutido bastante."*

*(This is very typical. Many neighborhoods in Fortaleza have always been threatened with removal. Fifty years ago there was an argument that 'Oh the government will do a project, it will take you.' That did not happen. But then this time it happened.*

*First came a lot of lack of information. People's houses were marked, and from this that people knew what something really could happen. A time was set for a meeting with the community to discuss the project, but what happened is not discussing the project, the government simply did a very superficial presentation that was not saying that people really were going out, who was going out, why, when, or anything else. It was a thing of the bureaucracy of the project, these things that were presented. And that was what they were putting on paper, 'did twenty meetings', as if it had been discussed enough.)*

*- Patrícia, member of advocacy organization, URUCUM*

Research participants regularly cited a lack of faith in government institutions as a reliable way to get their needs met. Rubens, a former resident of Alto da Paz, said,

*" O único lugar proibida é HABITAFOR. Não temos poder. Não temos arquivos. Se eu vou lá sozinho...? Se eu ir lá e falar que eu vivo em Alto da Paz, eles vão rir de mim."*

*(The most forbidden place [in the whole city] is HABITAFOR [the public housing authority]. We don't have power. We don't have files. If I go there alone…? If I go there and mention I live in Alto da Paz, they will laugh at me.)*

As a result, participants from every community mentioned that their only choice was to organize among themselves, and fight for their rights. Meire, from Serviluz, mentioned that informal residents must fight to defend constitutional rights that are constantly under attack[9].

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[9] Commonly cited constitutional rights from article 5 of Brazil's constitution can be reviewed at http://www.planalto.gov.br/ccivil_03/constituicao/constituicao.htm.

Pervasive in the comments about power were the notions that informal residents must constantly struggle, that they are engaged in a fight, and some even characterized it as a war.

*"Então, assim, eu aprendi que nessa luta a gente dorme com uma batalha vencida, e você acorda com uma guerra pra travar. Então todo dia é uma luta, que não acaba nunca né, que é sempre constante. E é isso, a gente tá aqui pra brigar pelo direito de moradia né, que moradia não só é as quatro paredes né, não é só a casa, e sim todo o consenso que tem em volta da moradia, né, que são os laços de família, os laços de amizade; são os comércios que tem ali dentro da comunidade, que usufrui desses produtos, né, e tudo isso é moradia, né, e a gente tá brigando constantemente por causa disso, por causa da moradia."*

*(So, I learned that in this struggle we sleep with a losing battle, and you wake up with a war to fight. So every day is a struggle that never ends, you know, that is always constant. And that's it, we're here to fight for housing rights, right, that house is not only the four walls, you know, is not only the house, but all the consensus that has around the house, you know, which are the bonds family, the bonds of friendship, ties that you have there in the community, you know, and all that is housing, right, and we're constantly fighting because of that, for the cause of housing. )*

*– Ivanildo*

*"E nessa luta ela vem desde 87, né...Até porque a minha primeira moradia foi através da ocupação, certo. No conflito quase morro, né, através de conflito nessa ocupação. Mas sobrevivi e para mim a sobrevivencia me deu mais força para me ajudar, mesmo sem condição financeira, mas ajudar quem precisa de moradia, né. Ajudar de uma forma a organizar, certo, a orientar como lutar pelo seu objetivo, que é direito garantido por lei nacional e que é violado a todo momento pelos políticos que estão no poder, certo, no dia-a-dia."*

*This fight for housing comes from '87...II got my first house through occupation, but I almost died in the conflict. But I survived and for me the survival gave me more strength to help, even without the financial condition, but to help those in need of housing, right? Help in a way to organize, right, to guide how to fight for their goal, which is a right guaranteed by state law and is violated at all times by politicians who are in power, right, on a day-to-day basis.*

*– Ribamar*

In spite of the sense of constant struggle, informal residents felt they had power to claim their rights and shape their communities and their city. Comments like *change only comes through struggle* from Ivanildo and *the struggle is working* from Cláudio convey the sense that these informal residents believe in their ability to defend themselves. These two, both residents of Lauro Vieira Chavez, were key community leaders who, with help, negotiated drastic reductions in the number of homes to be demolished for the VLT project that was slated to run directly through the neighborhood, so they have good reason to feel powerful.

But the sense of influence does not stop with this success story; even former Alto da Paz residents feel they have gained power through resistance and organizing, in spite of the entire community having been demolished by bulldozers.

*"O que eu já aprendi até agora, hoje, eu posso passar pra uma vizinha minha que não sabe de nada né.*

*Encontro meus vizinhos, quase todo dia, todos. Me comunico por telefone, pergunto a situação, sei que não é fácil. Pessoas ainda com suas coisas emprestadas na casa de alguém, talvez até desconhecida, como eles relatam né. Fazemos reuniões. Chamo pra cá, recebemos, graças a Deus, doações de alimentos. Tentamos ajudar de alguma forma. Com o que nos ajude, nós estamos repassando a ajuda. Fazemos reuniões e entregamos cestas básicas. Doações de roupa tão chegando. Eu ligo, passo mensagem via celular, facebook, que eu tenho meu facebook particular pra muitos deles do Alto da Paz. Hoje em dia eles tão me trazendo respostas do que aconteceu no Alto da Paz, entrevista, fico sabendo por eles. Documento chega aqui, que alguém deu uma entrevista, tá na internet, eles me trazem. Então assim nós tamo formando uma coisa assim que tá prefeitura evitar foi entender que tamo na luta pra voltar pra lá.*

*Vamos fazer o novo cadastro que a Habitafor pediu, de 550 moradores mesmo. Não vai ser um trabalho cansativo, porque tá dentro de mim ter essa força pra fazer um cadastro que eles pedir ou mil, ou mil. Eles pedindo, eu fazendo. Que eu quero mostrar assim, dessa minha força vai sair a minha casa. Não vai ser com corrupção, eu não vou usar de má fé contra ninguém pra conseguir meu objetivo, a minha moradia."*

*(I have learned a lot and what I have learned I can pass along to my neighbors who don't know. Now I am meeting my neighbors almost every day. I communicate by phone, ask the situation, I know it is not easy. People still need to borrow your stuff, sometimes their own stuff is in someone else's home perhaps even unknown. We have meetings. We try to help in any way, delivering food baskets, donations of clothes as the come. I call, leave messages via cell phone, Facebook, I have my Facebook, particularly for many from Alto da Paz. Today they bring me answers as to what happened in the Alto da Paz through interviews; I learn from them. When documents arrive here, if someone gave an interview on the internet, they bring it to me so that we are forming something for the prefecture so we can avoid what happened and make them understand that we are in the fight to get back there.*

*HABITAFOR asked for a count of the people. It will not be a hard job because inside me have this power to make a record that they ask for. They ask for a thousand counts, or a million. They ask, I do. I want to show so that my strength goes beyond my house; they cannot destroy me by destroying my house. It will not be with corruption, I will not use bad faith against anyone to achieve my goal, my house.)*

*– Raquel*

But this sense of power through organizing and resisting perceived injustice and rights violations is against a constant threat: a perception of helplessness. Contrasted to the accounts of activism and empowerment, three out of four research participants who were not residents of informal communities conveyed that residents of informal settlements have no options.

*"It's hard for the poor people to have a voice. Even when the protests happened, it wasn't primarily about that - although it was related. The protests were mostly healthcare, and education, and public transportation which were really terrible…*

*[In response to housing removals] People are angry, but not much happens in terms of action. People don't know what to do. There is a Facebook frenzy of pictures, emails, petitions like change.org. But what can you do? There is a general feeling of helplessness for what you can do for your city… I think if people were seeing it happening, more people would get involved. The people that live around would try to get involved."*

*– Mateus, formal resident of Fortaleza*

*"Os chefes das grandes empresas são os únicos com o poder; não ativistas."*
*(The bosses of big companies are the ones with the power; not activists.)*

*– Natércia*

No informal residents from currently unthreatened communities were interviewed as a part of this research, and thus it is unknown if the sense of power is a direct result of engagement in resistance efforts. However, many participants reported a sense of control over their homes and communities even if they were not leaders in organizing efforts. Still, it is possible that members of informal communities which have not been threatened with displacement (or have not been threatened for a long time) or those who have not been members of active resistance efforts or negotiations over government projects may mirror the sense of helplessness assumed by residents of formal areas of the city.

### *How or Why Is the Power of the Poor Different?*

Informal residents consistently reported feelings of empowerment as a result of resisting threats of displacement (with the caveat mentioned, above), but it was almost always qualified as a kind and quantity of power to influence the city and the more immediate community that differs from that held by other residents. Informal residents identified different channels of power, the ways they learn to have influence, and the different rules that apply to them in order to see their actions make change.

Formal residents have several mechanisms by which to be heard, including writing editorials to newspapers, utilizing neighborhood or homeowners' groups, access to political voices via formal land tenure, or traditional political engagement (How Can Citizens Participate?, 2014). While these doors are not entirely closed to informal residents, problems of recognition of self-

organizing groups and risks of a grassroots organization's cause being coopted and subverted

by government officials have been noted by residents (Patrícia, personal communication, 12

June 2014) and scholars (Holston, 1995); specifically, Holston notes that the privatization of

space – via shopping malls, gated communities, and increasing transportation via private

vehicles – reduces the availability of public space which is the space available for the public (but

especially for those whose rights are not always acknowledged, such as those without land

tenure) to be politically active. Because of the lack of practical access to traditional channels of

influencing decision-makers and the increasing privatization of space, informal residents have

learned via trial and error how to exert their collective power in ways that work; churches, as

long-standing and name-recognized institutions were a source of leadership that have been

able to break through bureaucracy when other attempts have failed (María Fatima, personal

communication, 6 August 2014). Organizing as a group, rather than speaking up as an

individual, continues to be the singular most effective strategy mentioned among residents of

the three case communities.

> *"Só você sozinho você não consegue mudar. Então tem que ter a união tanto
> da liderança quanto dos moradores pra poder fazer com que as coisas
> mudem. E só a luta é que pode mudar esse nosso país."*
>
> *(Alone you cannot change. So you have to have the marriage of both the
> leadership and the residents to be able to make things change. And only that
> struggle can change our country.)*
>
> *– Ivanildo*

Informal residents also learn how to hold and exercise power over outcomes for their

communities in different ways than formal residents might; in each community, participants

noted that they started out lacking knowledge about policy, procedure, and what rights were

guaranteed but learned through trial and error (Ivanildo, personal communication, 7 August 2014; Raquel, personal communication, 3 July 2014; Meire, personal communication, 6 August 2014). Formal residents might learn how to navigate bureaucracy through other means such as formal legal advice, schooling, or notification or instructional guidance offered by the government. By learning through experience, informal residents gain courage to face their opposition and valuable contacts along the way to make their actions effective; these lessons of experience may be lacking for people who do not learn how to organize in such a direct manor. Researchers have noted that while Brazilian grassroots organizers often face failures, those who continue to organize see rapid increases in their rates of success due to the experiential learning they undergo (Hall, 1994).

Informal residents have noticed that they play by a different set of rules than other people when they want to see something happen for their community. For one, while formal residents may be able to garner adequate political influence within their existing group to influence change, informal residents need the backing of outsiders to get heard; Lauro Vieira Chavez, the great success story of the cases studied in this research, have welcomed numerous documentarians, local scholars, and politicians who are sympathetic to their situation and have gained it global notoriety (for example, the see the letter written by the UN Special Rapporteur on adequate housing after her visit to the community: Rolnik, 2012). Raquel, the Alto da Paz community organizer, raves about the influence Facebook has offered her in gathering information about the community as well as turning that back around to a larger audience who can make noise on behalf of the community (personal communication, 3 July 2014).

More positively, Ivanildo and Cláudio of Lauro Vieira Chavez both mentioned democratic

methods that they and their committee have employed to which they attribute their successful

movement; they see the acts of putting community decisions to a vote, asking community

members for their opinions, being future-thinking, collective, and constantly communicative as

both essential to success and in great contrast to the way the city and state governments

operate (personal communications, 7 August 2014).

<u>*Economic Power*</u>

The discussion of power would be incomplete without mentioning the ubiquitous

acknowledgement by informal residents that the people who hold money hold power in

Fortaleza.

> *"Normalmente os mais penalizados e os que pagam pelo progresso são os*
> *pobres...que tinham o dinheiro, eles também por ter o dinheiro, ele*
> *dominavam a política, dominava a cultura, dominava a economia...os meios*
> *de comunicação de massa e fazia com que os demais, sem esse poder*
> *econômico, ficassem a mercê deles."*
>
> *(Usually the most penalized and those who pay for progress are the poor…*
> *those with economic power dominate politics, culture, the media, and cause*
> *the other, without this economic power, to stay at their mercy.)*
>
> *-Claudio*

With the Fortaleza serving as a host city for several World Cup games during my fieldwork in

2014, this was evident; against the backdrop of the 30% of the city living in slums, private

helicopters delivered some of the world's wealthiest people to the tops of high-rises in the city

center (Paulo, 2014) and a multi-kilometer radius was established surrounding the city stadium

inside of which residents had to provide proof of residence to enter; all local commercial

activities were halted in favor of the contracted vendors for the games ("A Copa de 2014: de

que estamos falando?" 2014). It would be dishonest to paint the resistance efforts of informal

community residents in too rosy a light; failures have been real, numerous, and recent in the

struggles against housing displacement, while the city has lost millions on incomplete contracts

for projects which were not likely to help the city's poorest, anyway ("Obras do VLT estão

paralisadas e sem previsão para retomada, denuncia Férrer," 2014). For city projects, informal

communities are unabashedly the choice areas due to the lower cost of removing people from

them (Barros & Afiune, 2013), and in spite of the rights to use values of space guaranteed by

the *Estatuto da Cidade*, plenty of evidence remains that real estate speculators continue to

control vacant property within the city, even those cites designated specifically to benefit the

poor (Pequeno & Freitas, 2012).

But from the ashes of one of the most economically power-ful and power-concentrating events

a country can undertake, that is a mega-event like the World Cup (Cornelissen, et al., 2011), a

phoenix rises; due documented and perceived rights abuses, the World Cup of 2014 saw

unprecedented social resistance from all corners, and the momentum generated by four years

of resisting the Cup (Patrícia, personal communication, 12 June 2014) has left Brazil and

Fortaleza with a large and motivated population of social activists hungry for economic justice,

now equipped with experience and tools that could make their next fight more refined and

effective.

### *Obligations of Those in Power*

The organizing efforts undertaken in the three case communities has offered lessons to

community leaders about how to lead with justice; some of these ideas were shared above.

Beyond feeling a duty to their communities to guide with democratic principles, community

leaders and members have a clearer sense of what is possible to demand from political

representatives.

> *"Na palavra líder, dentro da comunidade, a qual eu entendo e fui capacitada é você poder levar informação, né? Colher informação e poder imediar essa informação da melhor forma possível. Entendeu? Se, se eu pensar em líder dessa forma, as pessoas vão aprender como é os seus direitos, entendeu?... . Então a concepção de ser líder é poder orientar, é poder ensinar os caminhos, é poder ensinar fazer um ofício, né? Porque muita gente acha que ser líder, a comunidade, ela ainda tem uma concepção dentro da comunidade, que ser líder é tomar conta de um tudo, é passar na frente, é ser dominador, é manipulador, e não é isso. Na minha concepção não é isso. Na minha concepção, ser líder é poder sim ajudar a comunidade a qual eu moro, mas de que forma? Eu sei que a política de direito de moradia me dá direito a viver melhor, a ter uma condição de vida melhor... Eu acho que liderar é mostrar o povo que ele tem poder de tirar um vereador, de dizer que não quer mais esse governador, de ir pra rua, de gritar pelos seus direitos, né?"*

> *(The word leader I understand as being able to take information, right? Gather information and power and mediate this information in the best possible way. If I think of leading that way, people will learn their rights, get it?...So the concept of being a leader is being able to guide, to teach the ways to make a trade, right? Because many people think that being a leader is to take care of everything, is to be domineering, is manipulative, and it is not it. In my design is not it. In my mind, it's not this. Being a leader is being able to help the community in which I live, but how? I know that the housing right policy entitles me to live better, to have a better quality of life...I think a leader shows the people that they have the power to take on a politician, to say that they don't want this governor anymore, to go to the streets and shout for their rights, right?)*

> *– Meire*

The final word on power I give to Ivanildo who has continuing faith in the people.

> *"O que eu quero falar é que fico... você insista, persista, e não desista. Nunca, né. Então é isso que eu tenho que falar; que as pessoas que futuramente vão ver esse vídeo se conscientize que lutar é preciso, sempre, né. Porque não só como no Brazil como no mundo, uma frase que um companheiro meu da liderança sempre fala, que é o Cláudio, que diz que quem ainda tem o poder é*

*a minoria. A maioria ainda não tem o poder, a maioria é o povo, né, então a minoria é que manda, que são os empresários, são o pessoal das televisões, são os bancários, né, são os industriais. Que a minoria é que tem o poder, então se você não abrir o olho e não lutar, esse pessoal vai passar por cima de você. Com unhas e dentes mesmo, vão passar por cima sem nem medir esforço. Então é sempre você estar de olho aberto, sempre observando, vendo o que está se passando hoje em matéria de jornalismo, pra saber o que está acontecendo, o que vai acontecer. E sempre procurar, dentro da sua cidade, o que é que tem de projetos pra serem feitos que vai impactar alguma comunidade. Por que se você se antecipar a ele, você vai estar um passo a frente. Então você nunca saia dessa guarda, pra ficar sempre atrás, sempre tem que estar um passo a frente desse pessoal, porque eles são muito astutos, né. Eles vivem criando projetos, criando alguma coisa pra poder beneficiar a si próprio, enquanto o resto da população fica a mercê deles. Então voce sempre tem que estar um passo a frente pra poder não ser pego de surpresa, né. E aí numa guerra, eu sempre gosto de falar, que na guerra enquanto o inimigo está dormindo a gente está caminhando pra poder não ser pego de surpresa."*

*(What I want to say is you must insist, persist, and do not give up. Never, right? People in the future will see this and become aware that we must fight, always. Because not only in Brazil but everywhere in the world, a phrase that a fellow my leadership always says that who still has the power is the minority. Most are the people, you know, so the minority's bosses are entrepreneurs, are the staff of televisions, are the bank, right, are the industry, but the minority has the power, so if you do not open the eye and not fight these people will pass over you. If you fight tooth and nail it will go over without even measured effort. So whenever you're on the lookout, always watching, seeing what is going on today in the field of journalism, to know what is happening, what will happen. And always look within their city, what has projects to be made that will impact any community. Because when you anticipate it, you will be one step forward. So you never get caught off guard, always have to be one step ahead because they are very clever, you know. They live creating projects, creating something to qualify himself while the rest of the population is at their mercy. So you always have to be one step ahead so you won't be caught by surprise, you know. And then a war, I always like to say, that when in war while the enemy is sleeping we're walking so I cannot be caught by surprise.)*

*– Ivanildo*

*Meaning of Home*

When interviewing research participants about their experiences facing threats of displacement, the meaning of home was mentioned at least 34 times; these mentions were grouped into ten subthemes and the major subthemes about notions of home were the independence one's home offers, the history that ties people into a place, and the social connections that make a place a home. As residents faced threats of displacement, many questioned how (or really, whether) these communities values could possibly be compensated for.

Overwhelmingly, the independence offered by one's own home was identified by former Alto da Paz residents; in fact, every single participant from the community mentioned the importance of becoming independent and no longer relying on family and friends as one of the greatest values offered by their former homes. Other participants from Serviluz and Lauro Vieira Chavez reinforced the theme of independence with their own mentions of this value, but Alto da Paz residents felt this impact of having been displaced (losing their independence) acutely.

> *"Eu não posso nem manter minhas roupas porque estou vivendo em casa de outra pessoa ... Meu sonho esta minha própria casa. Agora eu não vivo em minha casa, então eu não posso fazer o que eu gosto, entendeu?"*
>
> *(I can't even keep my clothes because I'm living in someone else's house... I dream of my own house. Right now I don't live in my house, so I can't do what I like, understand?)*
>
> *– Rubens*

In addition to the independence lost on a personal level, Raquel relayed a story of losing even the *chance* of an independent home through her removal from Alto da Paz:

*"Minha situação era melhor do que os outros, porque eu tinha um lugar para ir...Porque assim, se eu vou na prefeitura, converso, saiu de lá, aí uma pessoa usa de má fé e diz assim: "Olha, essa menina não precisa de moradia, porque ela tem uma moradia na Abolição". E aí diz esse aí: "Ah, então a gente vai logo tirar ela desse cadastro, porque ela tem uma casa". Aí a casa dos meus pais, se tornou a não ser minha desde o dia que eu fiz família. Com 14 anos de idade eu já fiz família, e tive que me afastar né. Vou lá a passeio, a visita, mas a casa não é minha."*

*(My situation was better than others because I had a place to go [father's house]..But I went to talk to the city. After I was evicted, the say, "look, this girl does not need housing, because she has a house on Abolition [Avenue]." And then this one says: "Oh, so we'll just take it out of this database, because she has a home." The house there is my parents'. It hasn't been mine since I started a family. I was 14 years old when I started my family [and have been waiting for HABITAFOR to offer me a place to live], but now I have to walk away. I go there to pass by, to visit, but the house is not mine.)*

The other two case communities, Lauro Vieira Chavez and Serviluz, have rich histories going back many decades. These histories and the traditions built within them arose many times. Ivanildo said of the 40 years he has spent in Lauro Vieira Chavez, a community with roots going back at least 60 years,

*"...todos os meus amigos a gente cresceu junto, brincou junto no meio da rua, entao hoje todos meus amigos que já cresceram, já constituiram família, que já tem filho – tem deles que já tem até neto – mas eles todos ainda moram dentro da comunidade. Então a gente preserva muito essa amizade que já vem de muito tempo né. E que nós aqui, a comunidade aqui é que nem uma árvore, né, a gente tem a raiz sulcada da comunidade, raizes profunda, que agora o governo do estado e a prefeitura da cidade querem arrancar essa árvore. E são esse laços de família, esses vínculos de amizade, que são bons demais... A gente preserva uma tradição que é muito velha, muito antiga, e a gente preserva aqui, que são as rodas de conversa que a gente tem nas calçadas, a partir das 4 da tarde. As pessoas sentam pra conversar, a gente é muito receptivo; todas as pessoas que chegam de fora aqui dentro da comunidade são muito bem recebidas, sao muito bem acolhidas, né, a gente é muito acolhedor com esse tipo de coisa porque a gente preserva muito essa tradição que a gente tem, né."*

*(...all my friends we grew up together, played together in the street, so now all my friends who have grown, and constitute family; and they all still live in the*

*community…. And we here, the community here is that not a tree? You know,*
*we have the grooved root of the community, deep roots. Now the state*
*government and the city council want to uproot this tree. And it is this family*
*ties, these bonds of friendship that are too good… We preserves a tradition*
*that is very old, very old, and we preserve here, which are the talk of wheels*
*that we have on the sidewalks, from 4 pm. People sit to talk, the people are*
*very receptive; all the people coming out here in the community are very well*
*received, are very welcomed, you know, the people are very warm with this*
*kind of thing because we really preserve this tradition that we have, you*
*know.)*

Serviluz residents spoke frequently and fondly of their roots as a village of fisherman and the

maintenance of that tradition that sustains them, today. Although the sea wind and the blowing

sands corrode household items, Meire tells me that the sea is paradise to the people who live

there. She spoke of how the sea offers assurance against hunger, along with neighborly ties and

trust; that when others are struggling, they can look to the sea to keep them fed. The history of

a surf haven, too, is a source of pride for Meire and other Serviluz residents; it is further

evidence of the strong connection the community has to this location and the deep roots, here.

This, Meire told me, will not be something that social housing could replace (personal

communication, August 6, 2014).

Lastly, social ties were the root of home for most of the research participants. Even for those

who cried for the independence of their own places to live, the friends and family nearby that

were trustworthy (Camila, personal communication, 7 August 2014), sources of support (Julia,

personal communication, 24 July 2014), and the social safety net that provided what the

government failed to, such as food in times of hunger and housing when people did suffer

displacement (Meire, personal communication, 6 August 2014) made each community "home"

for participants.

*"Então nós somos felizes porque nos amamos o nosso bairro, entendeu? Eu não falo só por mim, eu falo pela comunidade, que eu sei que quem mora. Nós temos um costume aqui de dizer assim: "Quem sai de Serviluz, sai, mas volta". Então é dito e certo. Muitas famílias que tentaram ir se embora daqui, voltaram. Voltaram por quê? Porque se identifica, sabe? Porque aqui a gente pode andar no pé no chão, entendeu? Podemos dependem um do outro."*

*So we are happy because we love our neighborhood, you know? I do not speak only for myself, I speak for the community. We have a custom here to say: "Who leaves Serviluz, leaves but comes back." So is said and it's right. Many families tried to go away from here come back again. Why? Because here we can walk on foot to the floor, you know? We can depend on one another.*

*– Meire*

To the participants in this study, facing displacement was and is much more than a question of economic calculations; displacement means breaking ties to what one knows and loves. Several participants have mentioned that not only has the specific community – its location, composition of its members, and the common projects, situations, and struggles that residents face together – have not only been crucial for their survival but for their happiness. Threats of displacement threaten these lives more than economically, but socially and emotionally in deep ways that are rooted in the identities of the people who face them.

### *Failure of Government*

Threats of housing displacement were seen as both causes of and generators of government failures; this theme was mentioned 24 times in interviews and the comments were grouped into seven subthemes. Unfulfilled promises dominated this theme and corruption and secrecy also received several mentions. As a way of experiencing housing displacement, many respondents saw these government failures as the things that should have been done which would have prevented the need for displacement in the first place.

Broken promises are easiest to spot amongst the informal residents who have been displaced.

Both Alto da Paz residents and the portion of Lauro Vieira Chavez residents who were displaced

from their homes have complained that even the inadequate money promised to them in

exchange for the demolition of their homes has not been seen; meanwhile, some people have

moved to rental units with new expenses that they did not face when they lived in their own

homes (Cláudio and Ivanildo, personal communications, 7 August 2014) and others are living in

cramped conditions and have had to give up their possessions due to the lack of provision of

adequate housing (Raquel, Rubens, personal communications, 3 July 2014; Carmen, personal

communication, 24 July 2014). If adequate social housing, full compensation promised, or basic

infrastructure was provided, the problems that lead to overcrowded homes and settlement in

informal areas may not be as necessary.

More insidious broken promises have longer legacies; in spite of the communities 60-year

presence (Ivanildo, personal communication, August 6, 2014), two Lauro Vieira Chavez women

described their community as neglected, lacking sanitation, a health post, and a local school.

One of these women explained that even small children must cross busy streets and travel over

30 minutes by foot to reach the nearest school (personal communication, 7 August 2014). *Most

of the good projects get closed,* she told me. *There are varying levels of vulnerability and need in

these communities*, Raquel from Alto da Paz told me, and Ribamar from Serviluz echoed, *The

elderly and people with disabilities also live here, but they do not get any more services than

anyone else.*

Corruption and secrecy, meanwhile, have come to be expected of the government bodies with

jurisdiction in Fortaleza. While one interviewee told me that at least twenty percent of funding

for any given project can be forgotten (Meire, personal communication, July 24, 2014), other

facts, like the recent cancelation of the contract for the VLT construction ("Obras do VLT estão

paralisadas e sem previsão para retomada, denuncia Férrer," 2014), lead to more questions. For

the informal residents I spoke to, the answer was clearly corruption.

The government evictions that displace people from their homes, even though they seem to

largely proceed without fear of retribution in many cases, also seem to lack transparency.

Possibly speaking of the Alto da Paz eviction which was carried out in the 5 o'clock hour, before

the sun rises in the equatorial city (Nígeria, 2014) one participant observed,

*"You hear about the removals - there are videos on the internet. There were*
*people of all ages, old people, kids, all taking the rubber bullets and tear gas.*
*But you can see it when you drive by that houses have been torn down. I*
*wonder how the government manages to do it that I haven't ever seen it*
*happen live!"*

*- Mateus, a resident of a formal part of Fortaleza*

Informal residents probably feel the brunt of broken promises more than other residents

because the function of the government in most places, and indeed in Brazil, is largely to

ensure that basic needs of all citizens are met (Stewart, 1989), so when promises are broken, it

is the likely those basic needs that go *un*met. As people face threats of displacement and even

endure being displaced from their homes, these broken promises are salt in an open wound,

the extra pain of being denied even a feeble retribution (Andréa, personal communication, July

24, 2014).

These interviews have demonstrated at least four ways that residents of informal communities

commonly experience the threat of displacement. They have highlighted that residents feel the

threat of displacement as evidence of class discrimination, a feeling supported by other kinds of

evidence. In spite of this perceived discrimination, these residents have found alternative ways to be powerful and have demonstrated that power through a variety of successes. Still, inequalities and power concentration at the top of the socio-economic ladder persist. As this power concentration has led to and continues to lead to displacement of informal community residents from the places they live, the notions of what makes those places "home" have risen to the surface as important considerations for a high quality of life. Failures of government have resulted in an untrusting constituency that feels as if the only way to see justice is to be at war with those who govern.

### Result 3 – Sustainability Juxtaposed Against a Picture of Displacement Threats

A document analysis was conducted to examine how sustainability, as a part of a macro-level policy influence, is manifesting in Fortaleza. Documents were divided into three categories: government documents, which included legal documents, public notices, press releases and government-issued videos, digitized presentations, and government websites; mass media, composed of news reports and popular media such as blogs and special interest websites, and alternative media, comprised of videos, articles, and other pieces published by nontraditional sources. I largely limited the documents analyzed to those published since preparations for the World Cup began around 2010, as the projects which threaten the communities included in this study are tied to World Cup preparations, and ending at the close of 2014; however, some documents fell outside of this window.

In order to compare it to the lived experiences of threat of displacement, I have organized the analysis according to the same four themes that were identified in the interview analysis: Class Discrimination, Power, Meaning of Home, and Failure of Government. Because of the close

links, the first two themes are taken in the same section. I add an additional section after the

common themes to detail some of the controversial actions in Fortaleza that throw a

commitment to sustainability into question. Upon completing this comparison, a question

remained: do the transportation projects studied here show evidence of sustainability, even if

they might have negative impacts? I analyzed the same collection of documents against one set

of sustainability indicators, supplied by Slaper & Hall (2011) as "well-vetted by academic

discourse." The results of that additional analysis conclude this chapter.

*Class Discrimination and Power*

Research participants felt that discrimination based on class was causing them, as informal

community residents rather than formal area residents, to be displaced. Of course, the official

reasoning for uprooting families would never been their class status; instead, making Fortaleza

more sustainable was one of the primary lines of reasoning for these infrastructure projects,

evidenced below. Although the document analysis did not reveal groups who *were* able to

influence the decision-making process, it did reveal ways in which the urban poor are markedly

disadvantaged from doing so. Further, the documentation analyzed here has revealed that the

mechanisms for claiming power in political processes which are most commonly available to

informal settlement dwellers (such as grassroots organizing and protest) have been devalued in

the planning and implementation of the projects which threaten the three case communities

with displacement. In the context of a city that is embracing "green" as the guiding vision for

the future, these discriminations and barriers to evenly-distributed power challenge just how

sustainable the city can be; as such, I analyze this same collection of documents against

indicators of sustainability in order to test this idea.

Fortaleza's mayor, Roberto Cláudio, was a featured speaker in a Brazilian national forum called "Fórum Sustentabilidade – Cidades: Por uma Vida Sustentável" (Sustainability Forum – Cities: For a Sustainable Life) ("Roberto Cláudio dá palestra sobre sustentabilidade em São Paulo," 2014). Here, he detailed that Fortaleza's City Hall is in favor of sustainable development and the way to do it, the article cites, is through alternative transportation, namely, rail, BRT, and bicycle transportation infrastructure. Further, presentations given for two of the three types of transportation infrastructure –cycle (SEINF, 2014), BRT (Prefeitura de Fortaleza, n.d.), mention sustainability explicitly as motivations for pursuing the infrastructure.

Who decided that sustainability was a priority and who defines what *kind* of sustainability is a valued is less clear, and this lack of transparency may be an indicator of the uneven influence at play; however, one can infer, based on who has access to announcements and information about these projects and priorities, who is likely to have influence. Although construction is underway on all three types of infrastructure, neither city nor state websites include direct links to projects under consideration or in process. During the comment period for the cycle plan, a statement on the city's website advised that copies of the plan could be requested by email, but it was not otherwise available. Presentations of the plans have been found posted by third parties to other websites, but the status and validity of those presentations is unverified. For informal settlement dwellers who lack formal addresses and are less likely to have access to internet-connected computers (Gonçalves, et al., 2013), simply having the right information to react to is a challenge.

Although Roberto Cláudio mentioned that these projects were aiming to improve the quality of life for the people and to "build participation from the whole community, ("Roberto Cláudio dá

palestra sobre sustentabilidade em São Paulo," 2014)," the process detailed in the cycle plan

evidenced a highly biased process which further hindered the inclusion of affected informal

settlement dwellers. Although the study for the cycle routes did include interviewing bicyclists

and pedestrians from 50 sites around the city, the interview sites are not justified and fail to

demonstrate that they reach city residents in demographically representative ways[10]. The

questions focus on motivations for cycling but critically fail to address citizen opinions regarding

environmental sustainability, social inequality, and even safety. Further, the plan fails to

establish any measurable objectives for the project or any intention to verify success, such as

measuring reductions in carbon emissions (an often stated goal of alternative transportation

infrastructure in Fortaleza ("Prefeito Roberto Cláudio discute crescimento sustentável de

Fortaleza," 2015)) at given locations, reducing traffic accidents involving cyclists or pedestrians,

or improving quality of life. For BRT and rail planning processes, no inclusionary process has

been found in documentation either promised or implemented.

It is not clear, then, that the urban poor, approximated by the nearly one-third of Fortaleza's

residents living in informal housing, have had any say in the establishment of sustainability as a

priority. While environmental concerns are mentioned and given some detail (reduce

environmental pollution is a goal of the cycle plan, for example), social sustainability is a notion

absent from all documents reviewed regarding the three types of infrastructure. Without

evidence of a guiding framework of sustainability, with little documentation of project

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[10]See details of the bicycle study at
http://www.fortaleza.ce.gov.br/sites/default/files/apresentacao_diagnostico_preliminar_pdci_fortaleza.pdf

processes and the scarce existing evidence pointing to a bias against the poor, and difficult access to scanty project documentation that favors those with internet and email access and informal connections to people involved in the project planning, a pattern of class preference toward the elite having the most power to influence environmentally focused projects in the city begins to emerge.

Beyond a green vision being the motivation to envision a city with multi-modal collective transportation, this research has shown that Fortaleza is actively planning and implementing these kinds of projects. Planning decisions such as routes, styles, and surrounding redevelopment to follow proposed land clearances must be made by some groups. Information presumably was gathered from resources such as census data available from the IBGE and from more localized city resources, such as PLHIS study which included information regarding informal settlements from 2010. Brazil has laws requiring public participation opportunities in planning activities, including provisions in the *Estatuto da Cidade* of 2001 (Federal, 2001). In spite of established regulations and norms for participation and the existence of well-established organizations (such as the MTST (Movimento dos Trabalhadores Sem Teto, http://www.mtst.org/) movement and the Comitê Popular (http://www.portalpopulardacopa.org.br/), along with localized grassroots groups which organize within and among informal communities) through which planners and other government officials *could* reach out to residents of the city living in informal areas, both Serviluz and Lauro Vieira Chavez communities were excluded from decisions regarding the projects which have and will directly impact them; members of these groups expressed surprise at the announcement of the projects (personal communication, Patrícia, 12 June 2014;

Ribamar, personal communication, 3 July 2014). Lauro Vieira Chavez, after successfully

negotiating details of the VLT project, faced another threat of a BRT-ready avenue (discovered

during fieldwork by community leaders) which would require the demolition of the majority of

the neighborhood. Though no public announcement was made, plans had been developed that

specified the exact route of the project and which homes would be impacted. Community

leaders were able to obtain a map of the project, although it was not available through any

public source or official communication. Once community leaders got news of the project, they

requested a meeting with a municipal government representative to explain the details of the

project; instead, a social worker was sent to encourage informal residents to register their

homes (public meeting, July, 2014).

Other groups, such as Ciclovida, the Association of Urban Cyclists of Fortaleza, have also

complained about a lack of engagement after specific promises by the mayor.  This group is not

necessarily tied to informal settlements and may be presumed to represent middle- and upper-

class residents (Bertolini, 2014), and others like it have similar complaints. Grassroots

organizations do not seem to be recognized as legitimate stakeholders in the process of

planning for these projects, worthy of being engaged. Note, though, that the lack of inclusion of

groups like Ciclovida in infrastructure planning has garnered visible news coverage while this

research did not uncover any news about the lack of engagement with groups representing

informal communities or their residents; even within the power-claiming mechanism of

grassroots organizing, the urban poor seem to face disenfranchisement.

Protests are a second strategy that the urban poor (and, very prominently, others) have taken up as a way to be politically engaged around housing injustice in the city. This mechanism for claiming power has perhaps generated the most overt suppression through the use of violent means ("DEFENSORA DENUNCIA O LEGADO DA COPA DO MUNDO NA VIOLAÇÃO DE DIREITOS," 2014). This second example strengthens the assertion that the instruments for claiming power which are available to Fortaleza's informal settlement dwellers are under-recognized and even suppressed by decision-makers, while traditional routes for exerting influence continue to be out of reach.

The interview analysis broke the notion of power down into four sections: power held by the urban poor, how and why it is different than power held by other residents of the city, economic power, and obligations of the powerful. Here, we can see that the types of power that work in the hands of the poor – resistance through protests and land occupations, grassroots organizing, and collective support (Ribamar, personal communication, July 3, 2014), have not been seen to be recognized and, in contrast, have largely excluded from the processes through which infrastructure projects are shepherded for consideration and approval. Through a lens of planning for projects which aim at environmental sustainability, the planning process that fails to recognize these sources of power favors the preferences of those who hold economic power, as those are the people who engage with exchange of land ownership, project contracting, and other economic activities, since these activities require contact with the project planning process. This embeds a system of economic domination of planning processes and the power of people who garner use values from space are, again, subordinated. Further,

the obligations of the powerful are also relevant through lens of these "sustainable" projects; the public processes which the government is obligated to follow have failed to be carried out.

Evidence from newspaper articles, public meetings, government press releases and other documents has demonstrated that Fortaleza's political leadership has committed itself to sustainability. This research has also found that access to information about "sustainable" projects coming from this commitment systematically disfavors the urban poor in a way that, if not directly, at least indirectly furthers discrimination against this economic class from having equitable power to influence planning processes. The focus on sustainability, particularly, has led to projects which may further endanger informal community residents of residents of formal areas of the city, as these projects have largely taken the shape of transportation infrastructure, a type of project which requires a great deal of space and for which there is an explicit preference by the city to acquire the cheapest land possible, land occupied by informal residents (Barros & Afiune), 2013. Because of the planning processes which have failed to adequately engage the public and particularly residents of informal settlements, the default is another systematic preference for those parties already engaged in activities which touch the planning process – those who hold economic power. This distortion of power-holding relationships in favor of the wealthy and the political discourse which centers on sustainability is therefore at least linked to the outcome of displacement, and may even be the cause.

### *Meaning of Home*

The interview analysis highlighted independence, rooted histories, and strong social ties as some of the key factors making a place a home and the key values being threatened by

displacement. This document analysis, in aiming to understand how Fortaleza's perception of sustainability treats those values, has found that none of these three values are acknowledged other than in academic works as motivators of sustainability commitments, nor are they values to be protected through the process. Instead, values of economic progress, a few environmental measures, and a general commitment to improve social inclusion are the values sustainability measures and projects aim to promote, if any reasoning for sustainability measures are offered at all. The absence of *meaning of home* elements in planning for sustainability suggests doom for those values being prioritized.

This document review included news articles, blog posts, press releases from the city of Fortaleza and the state of Ceará, popular internet posts from grassroots organization issued from early 2014 through 2015 and academic works issued since 2000 (not comprehensive). During this time, over fifty items with brief or more detailed references to sustainability in Fortaleza were found, primarily in the contemporary media. Only in two academic works produced by University of Ceará architecture students were the values of independence, rooted history, or social ties acknowledged, with primarily social ties predominating (Barreira de Vasconcelos, 2013; Sales Gonçales, 2013) in relation to sustainability efforts underway in the city. Instead, government press releases and news articles, when they rarely offer any explanation for the focus on sustainability, mention the aims of reducing environmental pollution (SEINF, 2014), sustainable (presumably economic) development of cities, and improve social inclusion and reduce inequalities (Prefeitura de Fortaleza, n.d.). While it may be counted as a positive that social inclusion and a reduction of inequalities makes it at least to the table of reasons for sustainable projects, the connections to *home* which have been identified by

participants in this research as critical values for their quality of life are left out of the priority

list and left particularly vulnerable in the face of potential displacement.

Because the conception of *home* is missing from a working definition of sustainability or from

any of its supporting elements (one could imagine "home" fitting under the "equity" branch of

the triple bottom line definition of sustainability if that paradigm were in use, even if the notion

of sustainability did not identify "home"), the great value that research participants found in

their homes are in peril simply by not being on the priority list when sustainability projects

arise.

***Failure of Government***

Many of the specific failures of government that were identified by research participants – a

lack of democratic processes including seeking opinions from citizens (especially in any

representative way), lack of a process which allows for voting on decisions, a lack of transparent

and equal access to information, and broken promises regarding inclusive processes – have

been mirrored in the specific planning processes detailed in this document analysis above

regarding surrounding the sustainability-focused projects that have been in the news in the

past year.  These failures of government not only threaten the ability of the projects to be

completed (a newspaper article from November detailed the repeated contract struggles for

the VLT, most recently culminating in a bidding process that received no bids. ("Obras do VLT

estão paralisadas e sem previsão para retomada, denuncia Férrer," 2014)), but also beg the

question of sustainability from a number of angles.  Even a working understanding of what

Fortaleza's leadership hopes will be "sustained" is missing from projects which displace the

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city's residents and spend its budget on partially completed projects like the VLT. These

projects challenge the ability of the city's budget to sustain, or continue existing. From a more

traditional lens of sustainability that demands a balance of economic, environmental, and

equity sustainability, all three elements are challenged by the government's failures.

| Table 5.2. Social Sustainability Assessment of Fortaleza's Green Transportation Plans | | | |
|---|---|---|---|
| Social Sustainability Indicators | Fortaleza Cycle Infrastructure | Fortaleza BRT Infrastructure | Fortaleza Rail Infrastructure |
| Unemployment Rate | No mention or allusions found in documents | No mention or allusions found in documents | No mention or allusions found in documents |
| Female Labor Participation Rate | No mention or allusions found in documents | No mention or allusions found in documents | No mention or allusions found in documents |
| Median Household Income | No mention or allusions found in documents | No mention or allusions found in documents | No mention or allusions found in documents |
| Relative Poverty | No mention or allusions found in documents | No mention or allusions found in documents | No mention or allusions found in documents |
| Percentage of Population with degree | No mention or allusions found in documents | No mention or allusions found in documents | No mention or allusions found in documents |
| Average Commute Time | No direct mention, but allusion to improvements in commute times | No direct mention, but allusion to improvements in commute times | No direct mention, but allusion to improvements in commute times |
| Violent Crime per Capita | No mention or allusions found in documents | No mention or allusions found in documents | No mention or allusions found in documents |
| Health-Adjusted Life Expectancy | No mention or allusions found in documents | No mention or allusions found in documents | No mention or allusions found in documents |

Economically, money is going out to build projects but not being replenished by fares and as

residents are pushed out by displacement, economic activity is reduced; environmentally, green

spaces are consumed by concrete and natural resources demanded for construction of these

works and the increased surface area of the city that is paved may place increased demands on drainage infrastructure (Arnold, 1996); and from an equity perspective, the government failures are the most damning; with decision-making held behind opaque processes, the farther one is positioned from City Hall, the less power they have and more likely they are to face outcomes for which they were not able to voice input (Epstein, 2009). From even the most conventional understandings of sustainability, government failures are revealing the lack of depth in the promise of becoming a sustainable place.

Returning to the question of the role sustainability is playing in the justification of disproportionate impact via displacement, the assaults on equal participation by all groups is in direct conflict with notions of social sustainability, and failures of government to fulfill its obligations lead to mistrust which can cripple basic governance. Admittedly, Fortaleza has not committed itself to a definition of sustainability at all, even less so one which requires some element of equity. Still, as the literature review noted (particularly, Opladwala & Goldsmith, 1992), social change toward greater inclusivity is likely to be a *necessary* step if any other kind of sustainability is to be realized. As such, a comparison against indicators of social sustainability was undertaken as an alternative angle for viewing the potential equity in the way Fortaleza is planning and implementing its green transportation projects.

Because displacing marginalized citizens stands to threaten the "social" pillar of sustainability, I reduce this analysis of sustainability from the indicators offered by Slaper & Hall (2011) for the three pillars of the triple bottom line (also found embedded in the definition of sustainable development that came out of the Rio Declaration); I only compare Slaper & Hall's indicators

for *social* sustainability against the projects in question, here. Further, I question the broader

process of planning for sustainability by comparing against five mechanisms by which plans

work, presented by Lew Hopkins (2001). I make this additional comparison under the

assumption that a good planning process may be more immediately indicative of social

sustainability than indicators, as indicators can take a long time to demonstrate results, or even

to be developed fully. By comparing documentation against Hopkins' planning elements, I

question whether the planning process used in Fortaleza may be an indicator, itself, of true

sustainability in green transportation development for the city.

According to Slaper & Hall's eight, well-vetted social sustainability indicators, Fortaleza plans for

green transportation are falling short. Only "Average Commute Time" is alluded to in the

documentation found; no other social sustainability indicator was either mentioned or alluded

to, suggesting that by commonly agreed upon metrics, social sustainability is not on Fortaleza's

agenda for green transportation.

The following table includes the results of the social sustainability assessment when comparing

the three projects under study with Hopkins' plan mechanisms. These five mechanisms are

defined as follows (Hopkins, 2001):

- **Vision** – an image of what could be
- **Agenda** – a list of things to do
- **Strategy** – a system of decisions to guide a path full of contingencies. This mechanism guides multiple authorities over a long period of time
- **Design** – a fully worked-out outcome
- **Policy** – an "if-then" rule, set up to create consistency and ensure that the same action is taken when a given circumstance occurs

| Table 5.3 Social Sustainability Assessment of Fortaleza's Green Transportation Plans | | | |
|---|---|---|---|
| **Plan Mechanism** | **Fortaleza Cycle Infrastructure** | **Fortaleza BRT Infrastructure** | **Fortaleza Rail Infrastructure** |
| Vision | ✅ Map of routes | ✅ Map of routes | ✅ Map of routes |
| Agenda | No mention or allusions found in documents | One step mentioned (find funding), but no additional steps | Bidding process mentioned, but no additional steps |
| Strategy | Map of routes, but no contingencies considered | Map of routes, but no contingencies considered | Map of routes, but no contingencies considered |
| Design | No fully worked-out outcomes provided | No fully worked-out outcomes provided | ❌ No fully worked-out outcomes provided |
| Policy | ❌ No rules for decisions provided | ❌ No rules for decisions provided | ❌ No rules for decisions provided |

Assessed against Hopkins' planning mechanisms as a potential for sustainability via broader process, Fortaleza does not have elements of a good plan for green transportation in the city. Only the visions for the three types of transportation were found. A few elements of agendas and strategies were found in the documents, but the evidence did not meet the full definitions of those instruments. Designs and policies were completely missing from all three types of transportation projects.

### *Fortaleza's Controversial Reputation on Sustainability*

The previous elements of the document analysis have assumed that the decision-makers guiding Fortaleza's trajectory toward sustainability have been genuine in their intentions do pursue that goal. However, there is far from a consensus that this is the case; rather, scholars and environmental activists have cited several municipal actions which cast doubt on the intentions of Fortaleza's leaders to make the city more environmentally sustainable. The most prominent example in the public conscience, arising in casual conversation with bus passengers,

taxi drivers, teachers, journalists, students, and others during fieldwork, was the lingering

controversy over the viaduct project slated to encroach heavily on the Parque do Cocó, a huge

respite of green within the city. The park is protected for the preservation of a threatened

Mangrove ecosystem and other species of plant and wildlife ("Associação Parque do Cocó,"

2012). Courts tossed the decision back and forth while protesters faced violent repression,

finally deciding that stopping construction to avoid environmental damage would cause too

great a harm to the economy and to the traffic situation slated to be relieved by the viaduct

(Salles, 2013). But other projects such as one of the world's largest aquariums currently under

construction on the beachfront of the city (Duffield, 2013), the removal of 202 trees along

highly trafficked avenues like Santos Dumont an Dom Luis (Prefeitura inicia a retirada de

árvores da Av. Dom Luís em Fortaleza, 2014) and threats of displacement of informal housing

residents in the name of environmental preservation but in areas falling outside the

environmentally sensitive zones (Patrícia, personal communication, 12 June 2014) cast further

doubt on the commitment to sustainability from a variety of government bodies.  For those

who believe that actions speak louder than words, the discourse of sustainability that seems to

be guiding the direction of public policy in Fortaleza through official statements is not

supported by consistency in the actions seen in the city.

This research has explored how a political discourse of sustainability seems to be guiding

Fortaleza's public policy to justify the inequality faced by informal community residents of the

city; findings of a document analysis have validated the concerns of the urban poor and further

questioned the motivations and perceptions of sustainability that support only shallowly

"sustainable" projects in the city. Further, actions from a number of government entities with

jurisdiction over the city throw into question a fundamental commitment to any notion of

sustainability, suggesting that this discourse may, at best, be failing to serve its purpose toward

a city with an indefinite future, and at worst may be a façade for other incentives to undertake

major projects with particulars that threaten the very existence of whole communities. The

next chapter discusses these results in more depth and considers why these results matter for

planners.

# Chapter 6: Discussion

This study has uncovered evidence of differential threats of housing displacement to residents of informal versus formal settlements caused by green transportation infrastructure projects in Fortaleza, Brazil. The personal experiences of threats of displacement have been seen to manifest in patterns which are unique to the social status of those experiencing those threats, and those experiences are supported by evidence in public decision-making and mass media. The results from the above data analyses suggest the following responses to the research questions.

## Proportionality of the effects of displacement borne by informal residents compared to formal residents of the city

Cycle, BRT (Bus Rapid Transit), and rail transit in Fortaleza, Brazil each disproportionately impact informal areas as compared to formal areas, but the general pattern of uneven impact is nuanced. When each of these three infrastructure types are considered individually, the status of the infrastructure (either existing, approved, or proposed) show inconsistency in the informal/formal split of the space impacted, demonstrating a lack of a plan to proportionally represent the needs of residents of informal areas (approximately 1/3 of the population of Fortaleza (Garmany, 2011) living in 13% of the space of the city, according to PLHIS data). While each type of infrastructure has the potential to cause both positive and negative impacts on the areas surrounding them, informal areas falling into the impact zone (0.4 kilometers from the given infrastructure, a commonly used measure based on this being a walkable distance to collective transportation (Transit Capacity and Quality of Service Manual, 2003), are seen by Fortaleza's political leadership as cheap land available for development (Barros & Afiune, 2013)

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and scholars have demonstrated the risk of displacement for the urban poor in redevelopment areas that is not experienced by the non-poor (Zhang & Fang, 2004; Teaford, 2000). Both in terms of the space impacted and in terms of the likely outcomes, the urban poor of Fortaleza are disproportionately threatened with displacement by green transportation projects existing and underway.

Variation is apparent in the treatment of informal and formal spaces for each of the three types of infrastructure considered (see Figure 6.1 for a map of all three types of infrastructure). Cycle infrastructure, the type for which the most complete data was available, is the most nuanced in terms of discerning patterns of differential impact. Status (existing, approved, or proposed) shows a variation in the formal/informal splits calculated, but larger questions loom about whether a cycle lane would even cause the same kind of displacement seen by BRT or rail infrastructure. Existing cycle lanes seem to already co-exist with and within informal settlements, potentially even providing an amenity to those residents. It is less clear, though, that this would be true for new path construction; where heavy equipment, paving, and landscaping is necessary for a new path, one can assume that existing structures will get in the way, especially considering the narrow streets and walkways characteristic of these settlements (Barreira de Vasconcelos, 2013). To add more complexity, some of the approved and proposed cycle infrastructure includes cycle lanes which may be able to be painted onto existing roads without any street-widening or landscaping necessary; however, we know from the source documents for the BRT plans that each BRT project that has funding designated includes street-widening to include protected cycle lanes. We can see from the map of planned infrastructure (Figure 6.1) that some of these routes overlap (especially near the city center) but many others

do not, and plan documentation critically fails to establish in which cases road-widening, new

road construction, and/or off-road path construction for cycle infrastructure is necessary

and/or planned.

*Figure 6.1. Green Infrastructure Existing and Underway in Fortaleza, Brazil*
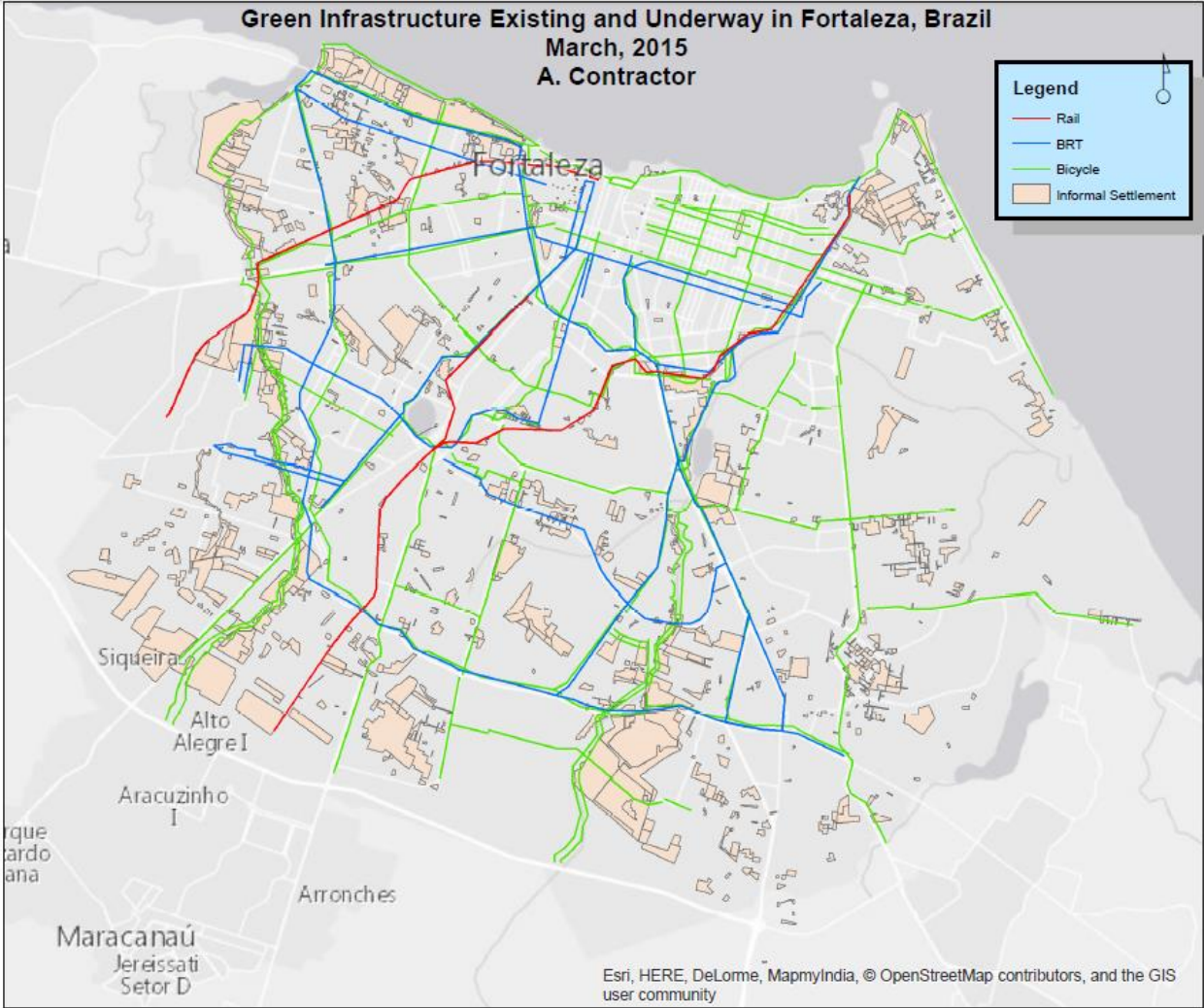


*All existing, approved, and proposed infrastructure included. "Approved" infrastructure has received funding and construction may have begun. "Proposed" Infrastructure has not seen funding or broken ground.*

Beyond the direct impacts from the construction of infrastructure which may or may not cause

displacement, today's variety of urban renewal often manifests as gentrification, whereby an

area is either intentionally or unintentionally revalued and displacement occurs when the

housing market pressures from the affluent inflate rents and other costs-of-living to the extent

that the previous residents are pushed out (Atkinson, 2000). With the desirability of areas

currently occupied by informal settlements increasing due to added amenities like cycle paths,

there is a real risk of current residents facing this kind of pressure from the revaluation of the

location which has previously been seen as economically unproductive (Pequeno & Freitas,

2012); further, the mayor's commitment to sustainable *development* (as opposed to another

framework of sustainability which does not require growth of capital or infrastructure) has

made the increased valorization of currently devalued city spaces explicit ("Prefeito Roberto

Cláudio discute crescimento sustentável de Fortaleza," 2015). In other words, the addition of

assets in the form of sustainable transportation infrastructure is more than a possible threat to

informal settlements; it could very well be an intentional threat to them, as their existence is

inconsistent with demands of a city government which is necessarily tied to goals of market

growth (Pequeno & Freitas, 2012; Logan & Molotch, 1987), just as Teaford explained is true in

the aggregate (2000).

| Infra-structure Type | Formality Status | Costs | | | | Benefits | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Physical | Economic | Psychological | Social | Physical | Economic | Psychological | Social |
| **Cycle** | **Formal** | Not assessed in this study | | | | | | | |
| | **Informal** | Likely Construction Displacement (houses currently marked for demolition)<br><br>Indirect displacement of other communities | Lost employment, time, possessions for those displaced<br><br>Some yet unknown for those awaiting displacement | Stress of threat of tenure challenge<br><br>Stress of uncertainty of timing<br><br>Discrimination, power differentials, feelings of being "less than"<br><br>Feeling unsupported, unrepresented by government<br><br>Lack of alternative housing options | Social network and social values disrupted<br><br>Violations of citizens' rights via *Estatuto da Cidade*<br><br>Feeling unsupported, unrepresented by government | New amenity available *if not displaced* | Potentially greater connectivity to labor/consumer markets *if not displaced* | Esteem for home *if not displaced* | |
| **BRT** | **Formal** | Not assessed in this study | | | | | | | |
| | **Informal** | Likely Construction Displacement (homes marked, communities notified) | Likely loss of economic value from demolition of home | Threats of forceful displacement<br><br>Discrimination, power differentials, feelings of being "less than"<br><br>Feeling unsupported, unrepresented by government | Social network and social values disrupted<br><br>Violations of citizens' rights via *Estatuto da Cidade*<br><br>Feeling unsupported, unrepresented | New amenity available *if not displaced* | Potentially greater connectivity to labor/consumer markets *if not displaced* | Lower commute times *if not displaced*<br><br>Esteem for home *if not displaced* | Enhanced physical links to social network, *if not displaced* |

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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | Stress of threat of tenure challenge<br><br>Stress of uncertainty of timing<br><br>Lack of alternative housing options | by government | | | |
| **Rail** | **Formal** | *Not assessed in this study* | | | | | | |
| | **Informal** | Construction Displacement (already occurring)<br><br>Stress from construction logistics (e.g. noise, detours) | Loss of economic value from demolition of home<br><br>If home is not demolished, rising property values likely to lead to displacement by gentrification<br><br>Loss of time during negotiations with government, organizing to claim rights already gauranteed | Threats of forceful displacement<br><br>Discrimination, power differentials, feelings of being "less than"<br><br>Feeling unsupported, unrepresented by government<br><br>Stress of threat of tenure challenge<br><br>Stress of uncertainty of timing<br><br>Lack of alternative housing options | Social network and social values disrupted<br><br>Violations of citizens' rights via *Estatuto da Cidade*<br><br>Feeling unsupported, unrepresented by government | No benefits seen; compensation not fully paid and rail line not in place. | | |

*(Table 6.1 continued)*

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The nuances, then, of the overall pattern of disproportionate impact on informal settlement dwellers do not negate the very real threats of housing displacement, even from some of the less boisterous of infrastructure plans. The failure of planning and implementation documentation to explicate exactly how the rights of these dwellers – the rights to adequate housing, to participation, and even to *continue living in the city* - will be protected (remember that these rights are already not being met) means that informal housing dwellers are threatened with displacement to a much stronger degree than any of their fellow citizens. Formal citizens, whose neighborhoods are not facing physical disruption or revaluation at nearly the same rate, and whose members have more legally defensible rights to private property, (by virtue of inclusion in a system which, in spite of the city statute provision of planning for social values of space, continues to prioritize exchange values (Pequeno & Freitas, 2012)), simply do not face the same spatial threats as do informal settlement dwellers who fall into the same impact areas from cycle infrastructure.

The pattern of extra burden on *favelados* from sustainable transportation infrastructure, with its nuances, is replicated in the analysis of BRT and rail routes, with rail infrastructure showing the clearest disparity between informal and formal spaces but the weakest connection to environmental discourse. As with cycle infrastructure, the BRT infrastructure statuses of "approved" and "proposed" demonstrate inconsistency in terms of the amount of formal and informal space impacted. Rail infrastructure, with only one status analyzed, does not offer a comparison, but shows the greatest spatial impact on informal settlements. The lack of strategic consideration for how costs and benefits will be distributed among different groups of citizens seems to extend from cycle infrastructure to these other types of sustainable

transportation infrastructure. However, while cycle and BRT infrastructure plans include explicit

references to sustainability as a driver for their planning and implementation (see below for

more detailed discussion of this) rail infrastructure, with the greatest impact on informal

settlements, was planned in an era that preceded the current mayor and his initiatives (("Ramal

Parangaba-Mucuripe avança com construção de vigas," 2010); still, the federal policy of

sustainable transportation ("LEI Nº 12.587, DE 3 DE JANEIRO DE 2012.," n.d.), coupled with

Fortaleza's civil society focus on "green" initiatives (Bertolini, 2014) are the remaining

indicators that the government's commitment to rail projects for transportation is fueled by a

broader discourse of sustainability.

At the category level, analysis of the split between informal and formal space falling within 0.4

kilometers of the infrastructure showed wide differences; rail infrastructure impact areas are

slated to be 35% informal space even though informal space is only 13% of the city. On the

other end of the spectrum, approved BRT routes are only going to have impact areas that are

9% informal. This wide range strengthens the pattern of inconsistency in consideration for

these spaces in terms of what access to these different infrastructures (or exposure to the

threats they pose) may mean for the residents who currently live in their paths. This lack of

consideration implicates planners who are tasked with ensuring representation in the

intentions of projects but also in their implementation.

Green transportation infrastructure projects in Fortaleza are not being located in the city in a

pattern that consistently serves the approximately 30% of the population living in informal

areas. Ostensibly, these types of infrastructure are being built for their positive impacts, and

proponents may argue that a pattern of placement that is proportional to the split of informal

and formal space is not necessary because of these potential benefits. Next, I explore some of the potential costs and benefits of each of the three types of infrastructure with special consideration for how these might affect residents of informal space differently than residents of formal parts of the city.

Bicycle infrastructure has the potential offer benefits, particularly for the urban poor; as residents of the city who are less likely to own a private vehicle, access to alternative types of transportation and a denser network of routes can ease the transportation burden felt by the urban poor (Nkurunziza et. al., 2012). However, as projects of urban renewal (Lehmann, 2006) cycle routes are often part of plans to transition city areas to more dense development (Belzer & Autler, 2002). Fortaleza's plan, "Programa de Transporte Urbano de Fortaleza" (or Program of Urban Transportation of Fortaleza, n.d.), details that each of the BRT routes with resources allotted (in the "approved" category) include the construction of dedicated cycle lanes, and also indicates that construction and placement of cycle lanes will done with an emphasis toward intermodality (Dias, S., & Resende, n.d.). This suggests that Fortaleza does intend to group alternative infrastructure, including cycle lanes, in a way that is consistent with Transit-Oriented Development (TOD) frameworks which call for various forms of transportation to interface (Belzer & Autler, 2002), and the city's plan indicates that some areas have been designated to be "densified" (Plano Diretor de Desenvolvimento Urbano, (n.d.).

Transit-Oriented Development-style densification of the urban environment, as one type of urban renewal project, has been demonstrably linked to the displacement of the urban poor (Soursourian, 2010; Hyra, 2012). Even if existing infrastructure has not immediately caused displacement, then, those poor urban dwellers living within 0.4 kilometers of existing bicycle

routes have reason to be considered "threatened" by displacement, even more so if the claim

they hold to their land is in question, as is the case for most people who live in informal

settlements. Approved and proposed cycle infrastructure compose a clearer picture of threat,

with those routes not yet fully in place, both urban change as well as construction activities are

likely to impact the areas surrounding those routes. Further, even if gentrification never

manifests, Vigdor, Massey, and Rivlin have demonstrated that the uncertainty associated with

just the *threat* of displacements is a burden, itself (2002).

While BRT projects are the current favorite of transportation planner in Latin America and

beyond, seemingly capable of no harm, the evidence from Fortaleza suggests otherwise;

planning for BRT projects are directly threatening Serviluz and Lauro Vieira Chavez residents

with forceful displacement from their homes. Although this highly flexible form of public

transportation is dramatically less resource and space intensive than the common alternative of

rail transit, some infrastructure *is* required, including exclusive and protected lanes that require

street-widening, ticketing stations and boarding platforms, and new signage (Polzin & Baltes,

2002). While BRT routes hold much greater potential due to their flexibility to reach

marginalized populations not only at their initiation but also as marginal groups shift

demographically and spatially, they do require dedicated space, often in already high-density

areas (Polzin & Baltes, 2002). Futher, BRT systems, like cycle lanes, are typically incorporated

into TOD strategies (Levinson, et al., 2003) that Soursourian (2010) and Hyra (2012) have shown

lead to gentrification. As such, marginalized groups continue to be the vulnerable in the face of

this infrastructure development, directly, as well as indirect pressure from dramatic changes in

valuation of their space.

Finally, rail transportation, too, offers some potential for benefits to urban poor populations

which are, unfortunately, outweighed by the likely costs. In Fortaleza, we do not need to look at

the literature to see this, as informal settlers are being forcibly removed from their homes to

make way for the construction of rail transit; as they are forced out of their homes, their

potential to benefit from the new amenity is erased. Some argue that compensation for homes

of the urban poor may be higher than these people could otherwise expect (Byrne, 2002).

While this is a decidedly contested conclusion, it may not be a relevant argument for the case

of informal settlers, as they are not treated as "owners" of the land they occupy, and the

system of compensation is complicated by opaque claims of ownership and occupancy of the

dwellings, themselves, leaving under-compensation the dominant outcome (Gonçalves, Ribeiro,

& Freitas, 2013).

## Effects of displacement being experienced by informal residents

As I described in the previous chapter, informal residents' experiences of displacement

manifest in several patterns; among them are class discrimination, differentiated power, a

disregard for the meaning of home, and, ultimately, multiple failures of government to follow

through on its obligations. In this section I discuss how the case of Fortaleza mirrors the urban

renewal of the past and why the particular qualitative themes of this research and the

phenomenon of them presenting in strong patterns is significant for those concerned with

sustainability, others who care about equitable treatment of all residents of Fortaleza, and,

crucially, for planners.

## Fortaleza wants to be like Amsterdam but bears a stronger resemblance to Chicago

The patterns of disenfranchisement caused by the three types of sustainable transportation projects studied here, which were revealed in the interview and document analysis, echo the findings of urban renewal research from the past century. Just as the poor living in the slums of London (Atkinson, 2000), Chicago (Sampson & Wilson, 1995), and New York (Hyra, 2008) faced displacement at much higher rates than people who did not live in slums in those cities and were further marginalized from decisions affecting their living space and their larger city, so too are the people with greatest vulnerability in Fortaleza facing disproportionate rates of displacement and further marginalization. Instead of transforming it into the dense, non-car-oriented, Europe-like city that Fortaleza longs to be (de Lima, 2015), the green transportation projects studied here mimic a process of urban renewal in the west in which compensation agreements fail to compensate for the elements of value to the people being displaced (a telling symptom of a disease of failing to recognize and plan for different publics), public engagement processes are carried out with deception (which suggest intentionality behind the failings of government to be inclusive), and agents of planning and decision-making critical fail to acknowledge and accommodate existing inequities, such as gender, racial, and economic disparities that exist everywhere in both Brazilian and Western society and which are exacerbated by the hardship of displacement.

Urban renewal literature, as discussed in Chapter Three, has challenged notions that equality has been achieved (Teaford, 2000). The Right to the City (RTTC) concept, popularized by David Harvey (2003), links the shortcomings of a growth machine (Logan & Molotch, 1987) to the persistence of inequitable treatment of certain groups. Harvey and others have made

compelling connections between the continuing lack of influence on the city among

marginalized groups and the growth-dependent nature of the current neoliberal economy.

Marxist thinkers have been advocating for a shift away from this commitment to market

economics (Weber, 2002) and Brazil's *Estatuto da Cidade* of 2001 was one of the most

significant political victories for those thinkers. Today, this federal law requires that

governments consider more than just the economic value of space, speaking directly to the

aims of housing rights activists in a country with a huge proportion of the population living in

informal housing (Fernandes, 2007). Scholars remain hopeful about the potential of the

*Estatuto da Cidade*, but to date, economic interests have continued to prevail; interviewees

from each of the three informal communities identified property speculation as a driving force

in the threat of displacement (interviews with Meire of Serviluz, Raquel of Alto da Paz, and

Ivanildo of Lauro Vieira Chavez, among several others, included this theme) and scholarly work

has further supported that finding (Pequeno & Freitas, 2012).

Many research participants in Fortaleza identified the failures of government as a key

component of the threats of displacement they faced; among those failures, compensation for

families displaced were neither appropriate nor carried out in full.  The deficient compensation

offered by the government for those being displaced conveyed a disconnect between the

objectives of social equity inherent in the city statute and government bodies which, as

negotiators, were unable to understand values beyond economic exchange. I argue that the

compensation packages which only accounted for exchange valuation of the marginal land

occupied by Lauro Vieira Chavez and Alto da Paz residents (Serviluz residents had not, by the

time of field study, entered negotiations for compensation) conveyed either an incompetence

or an unwillingness in these government bodies to recognize the existence of multiple publics and value beyond exchange value. They failed to recognize the social values that these residents shared with me including values inherent in the locations as a source of culture, food security, social networks as social security, social networks as integral to quality of life, access to work, and more. It cannot be, then, that no one is able to articulate the values that residents wish to see preserved; instead, people who valued other aspects of their community beyond economics did not see their values treated with equal (or any) weight. This reduction of values to a monetary bottom line essentially reduces all people to a homogenous group with a singular aim: profit maximization. The error is apparent in the dissatisfaction of the residents with whom I spoke; multiple publics with multiple key aims exist, but have not been planned for.

The notable exception uncovered during field work was the negotiation by Lauro Vieira Chavez residents to have their compensatory housing built in close proximity. Because both the location itself as well as proximity to other community members hold inherent value, one of the most important elements power to leverage that enabled them to negotiate this non-economic value. Still, while the negotiated homes were demolished, neither the project for which they were sacrificed nor the compensatory housing has seen progress. This lack of follow-through provides another piece of evidence for the under-valuation of non-economic values and non-economically motivated publics; one can guess that a financially-bound agreement would see negative consequences from this failure, but accountability is missing from the Lauro Vieira Chavez case.

Failures like the lack of follow-through mentioned above are buttressed by public engagement practices that similarly fall short of expectations that government bodies will take necessary

measures to actively engage with multiple publics about issues that affect them and ensure that different perspectives are not only heard, but are able to influence planning and governmental outcomes. These expectations have been largely implicit in many ways, stemming from abstract ideas of democracy which influence the way many countries, including Brazil, are governed. But the divide between those democratic ideals and day-to-day practice have been acknowledged, and the *Estatuto da Cidade* specifically addresses it by requiring active and equitable public engagement (Maricato, 2010).

Public engagement around cycle, BRT, and rail infrastructure, though, continues to be scarce, shallow, and opaque. I witnessed the sudden rescheduling, the gross tardiness (public officials arriving over an hour late for a scheduled meeting), and the diversionary tactics (sending the wrong kind of "official" who lacked relevant information) of government representatives when I tried to attend several public meetings in Lauro Vieira Chaves regarding the newest threat they faced (new avenue to accommodate a BRT and protected bicycle lane). Information about the project was not available through any official source, although community leaders did obtain a map, presumably through their personal contacts.  These maneuvers were mentioned by Serviluz and Alto da Paz residents in their own dealings with government officials. While the previous example of inadequate compensation may be explained by a lack of capacity, training, or understanding for alternative valuation in the government officials assigned to negotiate, the poor engagement practices suggest an intentionality in the failures of government experienced by informal settlement residents. The task of planning includes explicit obligations to sincerely reach stakeholders and incorporate their needs (Hopkins, 2001) and Brazil and Fortaleza are explicitly bound to these expectations at least via the *Estutato da Cidade*; the disregard of these

responsibilities adds fuel to a suspicion that marginalized groups have more working against them than mere neglect, but seem to be actively treated as deserving of differential treatment.

If one accepts the conclusion that Fortaleza's government bodies are not adequately engaging the multiple publics of the city then it is easy to see that existing inequalities and inequities are similarly being left unaddressed by the processes undertaken for green transportation infrastructure. By definition, different groups have different characteristics, needs, values, and power (Umemoto, 2001). Returning to the criticisms of sustainability posed by Bauriedl and Wissen in Gunder's work (2006), what is good for one group can threaten another, so any singular assumption of "public interest" is inherently problematic. In particular, inequities which persist on the basis of gender, race, and social class are left unresolved and often exacerbated by processes which fail to acknowledge them (Umemoto, 2001) and environmental justice advocates have been vocally identifying this problem for decades (Dobson, 2003). When we consider Fortaleza against this backdrop, the picture is familiar; all three of these group differentiators (gender, class, and class) are notable as dividers of power in the city, and the development of infrastructure is does not leave these untouched. Social class was most readily identified by *favelados* as the key disparity that is going unaddressed through the public infrastructure project, and the extra burden carried due to class, we can be assumed by the characteristic of living in informal housing, is evident based on the spatial analysis conducted here. Darker skin was explicitly associated with poverty and informal settlements by several interviewees and through informal conversations and in popular perception, such as museum displays, linking the stereotypes of informal housing and poverty with this group.

Gender inequities face an especially complex and persistent barrier to mitigation as cultural values and gender norms in society and the household are influenced by Catholicism, cultural and political spheres particular to the Brazilian Northeast bear strong machismo, and confidence in representative decision-making quiet non-male participation and influence (Taddei & Gamboggi, 2009).

It is surely tempting for green transportation planners and decision-makers to think of these inequities as unrelated to tasks like reducing greenhouse gas emissions. But we know that cultural factors associated with class, race, and gender direct consumer decisions as wide-ranging as which shirt is acceptable to how much schooling is appropriate, and gender roles inform how people commute to work and school, frequency of shopping excursions, and spending decisions on goods such as personal vehicles.  These decisions are *not* inconsequential for even the most basic objectives of a green transportation system; ensuring that these networks of infrastructure meet the needs of Fortaleza's publics and encourage those people to use them once they are established relies on engaging all of those groups in the design and implementation processes. Unaddressed inequities are not only unacceptable because they are allowed to persist, but are unacceptable because failing to inclusively plan pushes these marginalized groups into even tougher situations, all the while failing to realize the goals of the project itself. Consider the example of Rio de Janeiro where *favelados* who already, because of their social class, are disadvantaged by public transportation costs which do not account for income (dos Santos Gutterres, 2014). As Faulhauber has demonstrated, as these neighborhoods have been cleared, the residents have been pushed to the periphery of the city, exacerbating their struggle with transportation costs (economic, time, and safety costs) as they spend more

money, time, and risk in order to access work, social services, and other opportunities found in the city. In the same way, if women's voices are not engaged in planning for transportation, routes are likely to address concerns women, but not men, expressed to me about their children crossing dangerous streets and traveling long distances to reach school. If routes fail to address safety concerns for women, a real issue in Fortaleza, or fail to pass within walking distance of destinations used by women, this group is less likely to use the new infrastructure which required such heavy investment. If indigenous groups are not included in the negotiations of compensation, important cultural elements, such as unique access to recreation or food sources, such as surfing and fish in Serviluz (although this culture certainly extends beyond indigenous groups in Serviluz), will be left out of agreements and just compensation will not have been made. Failure to address multiple publics through the creation of green transportation, then, is more than just an unfortunate side note; it is *increasing* inequality in an already highly unequal place (Gondim, 2004) and it threatens to undermine the explicit intentions of the projects themselves. If that is the case, then either those in power must have some powerful myopia for the way these projects affect the city, or perhaps, as scholars of twentieth century urban renewal like Pritchett (2003) and Weber (2002) concluded, the driving forces of these projects is not what is claimed on the surface (reduction of greenhouse gases, "sustainability") but is, instead, the generation and concentration of capital.

While the spatial component of this study demonstrated from a bird's-eye view that the projects of green transportation in Fortaleza emulate the unequal impacts of urban renewal seen elsewhere, the qualitative research undertaken here adds evidence on the level of the individual that these projects are "urban renewal as usual" rather than any new approach to

changing the city that is either inclusive in the priority setting or just in the distribution of costs

and benefits. The approach to sustainability that employs new development (in this case, new

transportation infrastructure, although it is not necessarily limited to this type of development)

bears uncanny resemblance to economic development-inspired urban renewal both in form of

the projects, such as highway projects in Toronto, Philadelphia, and New York (Silver, 2014),

and in the defining features, including clearance of slums or demolition of public housing as was

seen in Chicago (Sampson & Wilson, 1995), and public funding for private profit (Teaford,

2000). While the private profit component of Fortaleza's projects are not yet explicit (entities

responsible for BRT and rail business are at least partially government interests, we have seen

from the gentrification literature that private profit outcomes are very likely even if not

explicitly planned for (Belzer & Autler, 2002); further, the property speculation findings of

previous research and the qualitative research done here suggest that Fortaleza is, indeed,

planning for private profit outcomes, even if they are indirect results rather than direct ones. In

sum, a "development" approach to sustainability in Fortaleza seems to be recreating urban

renewal with all of its ills instead of ensuring, in any evidenced way, that the needs of today's

citizens are met without compromising those of the future. Fortaleza is selling a Western

European vision of connectivity via alternative transportation, but what the city is getting is

increased segregation and increasing inequality based on class and, perhaps, race (Freitas,

forthcoming), a picture that looks more like Boston or Chicago. For anyone concerned with

running out of resources, this picture is likely problematic. In the next section I discuss why this

approach to sustainability is not on a trajectory for success.

## Greenwashing

This work is focused on why efforts of a city like Fortaleza which claim to focus on sustainability through green projects need to be scrutinized. We have seen that what is being sold as "sustainability" looks more like urban renewal. In this section I explore a few reasons that this "greenwashing," or use of sustainability discourse to achieve business as usual, may have occurred. First, the lack of definitional clarity around sustainability has left the concept open to being coopted for any purpose. Second, a failure to recognize the many equity concerns that come along with green projects, notably from the environmental justice and environmental feminism literature, has left those mistakes ripe for remaking in Fortaleza. Third, the global nature of a goal of sustainability resists the political boundaries that restrict public decision-makers and requires that more meaningful planning beyond a shallow commitment be done for sustainability to hold substance. These three elements lead me to the conclusion that rather than true efforts of sustainability, Fortaleza is seeing its government undertake a campaign of greenwashing to paint a fresh face on onto the same processes that have created the city as it exists today.

Although I presented at least five different ways of viewing sustainability in chapter two, the most common of which is the "triple bottom line," documents analyzed for this research showed scarce evidence that *any* working definition was in place in Fortaleza to guide planning for sustainability in any consistent manner. Evidence which does exist consists largely of objectives of the green transportation projects studied to reduce greenhouse gases or carbon emissions; this information suggests that the definition offered at the 1992 Rio Declaration on Environment and Development (and the holding of this United Nations Convention in Rio de

Janeiro is not overlooked, here) is the most likely of any to be a guiding force; once again, it asserts in its first principle that "Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature (Rio Declaration, 1992)." But the lack of precision in this definition leaves it vulnerable to being taken over for other purposes. Considering it at its most literal, if humans are at the center, does this mean that their right to a healthy and productive life would trump "harmony for nature" if the two were in direct conflict? Remembering the criticisms of Bauriedl and Wissen, what if the healthy and productive lives of two (or two groups of) humans are in direct conflict? Do the lives that are more in harmony with nature trump those of the group that might be in less harmony with nature? How are those "more" and "less" quantities to be measured (the measurement problem has been taken up at length by Norman & MacDonald (2004)). The lack of a clear definition gives room for Fortaleza to make its own. This is not inherently bad if Fortaleza ceases the opportunity to define sustainability in a way that serves the interests of the city. However, as recently as March of 2015 ("Prefeito Roberto Cláudio discute crescimento sustentável de Fortaleza," 2015) Mayor Cláudio was engaging with talks around sustainability which, while using many familiar phrases such as "climate change" and "dedication to sustainable growth" in conjunction with activities like tree-planting and vague ideas of waste reduction, continued to lack any allusion to a strategy or even a set of priorities for the sustainability agenda. This lack of definition creates a significant opportunity for any action to be taken and bent to fit the green rhetoric.

More condemning than these inconsistencies in definition or ability to measure sustainability, though, are the environmental justice claims which argue that any commitment to

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development is necessarily at odds with a fair distribution of ills and goods (Dobson, 2003).

While the sustainability assessment presented in the results demonstrates that Fortaleza's green transportation falls woefully short against one (albeit, claimed by authors Slaper & Hall to be widespread) set of social sustainability measures, environmental justice notions suggest that *any* approach to sustainability that depends upon growth is likely to fail. Indeed, a conception of sustainability which acknowledges the finite nature of resources is in direct opposition to growth (Moldan, Janoušková, & Hák, 2012), and only this conception will enable the environmental justice concerns of distributing environmental ills and goods equitably (Dobson, 2003) to be realistically addressed rather than pushed aside under the fantasy of an ever-expanding "pie" of resources (UNHL Panel, 2013; Gunder 2006).

Environmental feminists have been raising the arguments that demonstrate how marginalized groups, and especially women, are harder-hit by environmental injustice than others (Buckingham & Kulcur, 2009). In their article, "Gendered Geographies of Environmental Injustice," Buckingham and Kulcur demonstrate that the environmentally focused actors are not merely guilty of negligence of equity issues, but are implicated in the perpetuation and growth of injustice toward non-males, particularly, through buying into and recreating a gendered institutional knowledge of what it and is not "environmental injustice."

These justice concerns surrounding gender, class and race, which I have discussed above, are particular concerns for the notion of sustainability; if one subscribes to a triple bottom line framework of sustainability, equity or social sustainability is an explicit pillar without which sustainability fundamentally fails.  In the Rio Declaration framework, as I have assumed is most likely to be (weakly) guiding notions of sustainability in Fortaleza, equity is only apparent

inasmuch as the term "human beings" and their "entitlement" are meant to be terms which assert a certain commitment to equity. In either case, when women, informal housing dwellers, the poor, or people grouped by skin color do not have the same access to opportunities to live healthfully and productively, this second assessment of sustainability has also failed. No matter which way you understand sustainability, equity is an essential component. In Fortaleza, neither equity is notably missing from the work currently being undertaken in the name of sustainability, condemning the city to failure from the start. What is likely to be driving green projects in spite of this likelihood of sustainability's failure is a different goal – the same old economic growth and capital concentration we have seen for decades.

Just as policies of urban renewal have transcended political boundaries and manifested been seen in contexts as diverse as China (Zhang & Fang, 2004), the London (Atkinson, 2000), and Toronto (Silver, 2014), so too have sustainability discourses influenced policy in widely varying contexts (Gunder 2006; Quastel, 2013; Hoyle, 2000). The very definition of sustainability, whether related to the environment or not, lends the concept to global reach since resources for any task are not necessarily limited by political boundaries. For those concerned with availability of natural resources and Earthly carrying capacity, sustainability is especially global in nature. Current political contexts such as the transnationality of inter-American relations show that equity issues similarly resist political geographies (Smith & Guarnizo, 2009), and while governments seem to expend great energy to limit economic conduct based on geographies, these, too, leak into remote geographic corners by legal loopholes or black markets. As government decision-makers are necessarily restricted by these borders, it can be tempting to treat efforts toward sustainability as similarly fitting within a particular jurisdiction;

we have seen this temptation played out environmentally, in the case of Sweden which is

known as one of the most environmentally conscious governments in the world but which has

recently been shamed for externalizing environmental costs (Jorgenson, 2003); similarly, when

Fortaleza or Rio de Janeiro decision-makers claim to want to reduce inequality in the city and

follow the claim with an expulsion of informal housing dwellers, the locality of the city may inch

upward on a scale of social sustainability, but rather than a problem being resolved, it has

merely been externalized – externalized to another jurisdiction, and often times, amplified (see

the previous example regarding Rio de Janeiro and transportation burden. Decision-making

toward meaningful environmental or social (or even economic) sustainability requires a much

more difficult level of long-term cooperation among overlapping jurisdictions and interests than

is evident in Fortaleza or the areas surrounding the city. Instead, the shallow commitments to

vague definitions of sustainability that stop at city or state boundaries convey an intention to

develop areas of Fortaleza in a competitive way – that is to say, some areas and interests win

while others lose – rather than in a way which truly aims to reform reality in such a way that

human beings, all of them, have the opportunity for healthy, productive life.

## Is this a planning problem?

This work has largely focused on the positions and actions of the mayor of Fortaleza and the

state government of Ceará. Documents analyzed in this study have been presumed to be

"planning" documents, but most are merely marked with the seal of city hall rather than a

planning department; only one document analyzed was explicitly a "plan." Here I hope to

support an argument that the concerns of green transportation projects as urban renewal and

driven by a discourse of sustainability are planning problems which are the responsibility of

planners. Starting from a scope of practice for planners defined by Holston (1995), Brooks (2002), and Davidoff (1965) which combines advocacy for equity by institutional planners as well as spaces for insurgent planning, I argue that the very serious concerns surrounding informal housing are the imminent concern of planners and that any action or plan which relates to informality is integrally linked to the responsibilities of planners. Then, I argue that the broader logic that has committed urban planning to a model of growth, which I have argued to be the underlying basis for green transportation construction in Fortaleza, can never be sustained; environmental and social resources necessarily cause the ultimate demise of this approach. For planners, this basis of practice rooted in growth is shaken by an assessment against this relatively new global push for sustainability, and argues that the practice of planning is in need of a new model, including a reevaluation of what the responsibilities of planners are and to whom they are able to be committed, will be needed for the discipline to be able to realistically work toward a complex set of goals.

In whatever paradigm of planning one might subscribe to – whether it is a fairly traditional modernist view that the city reaches its ideal form when it is conforming to a singular, rational design or order, or if one understands the task of planning, on the other end of the spectrum, as a set of actions taken by people from all walks of life including non-officials and even people who lack formal citizenship, informal housing settlements are problematic. In the first case, the lack of conformity disrupts the design and creates disorder in the logic of the city; in the latter, informal housing represents a way in which people have been denied something to which they are entitled simply by being human, but certainly by being citizens. In both extremes and at every point in between on the spectrum, the need for people to establish and maintain

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informal housing represents a failure of the state to meet basic human needs including adequate shelter, sanitation, and healthy living situations. Fully 30% of the population of Fortaleza lives in this situation, and planners of any persuasion must be compelled to resolve issues of informality that leave the settlement dwellers underserved by city services to which everyone is entitled. As green transportation is being created in Fortaleza, the displacement that results further burdens residents of informal settlements rather than, at minimum, addressing their needs within the context of transportation infrastructure, or, more ambitiously, using the discourse of sustainability and the tangible projects as vehicles for addressing inequities inherent in informal settlements.

This work has expressed agreement with the argument put forth by Logan & Molotch that planning has historically, and as we know it today, been entangled in a commitment to market economics and a commitment to growth which makes planning for multiple publics, and especially planning in a way that works to mitigate growing economic inequality, impossible. Further, I have argued that the discourse of sustainable growth is inherently tied to this commitment in a way that is fundamentally in conflict with any meaningful conception of sustainability, rendering the discourse little more than greenwashing as a means to put a new face on business as usual, the business of capital accumulation and concentration. For planners, this logical chain is quite problematic; if planning is committed to economic growth, responsible for addressing inequalities, and also tasked with environmental sustainability, the second and third obligations are incompatible with the first (see Figure 6.2).

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*Figure 6.2. Planners' Sustainability Problematic*

**Planning is:**
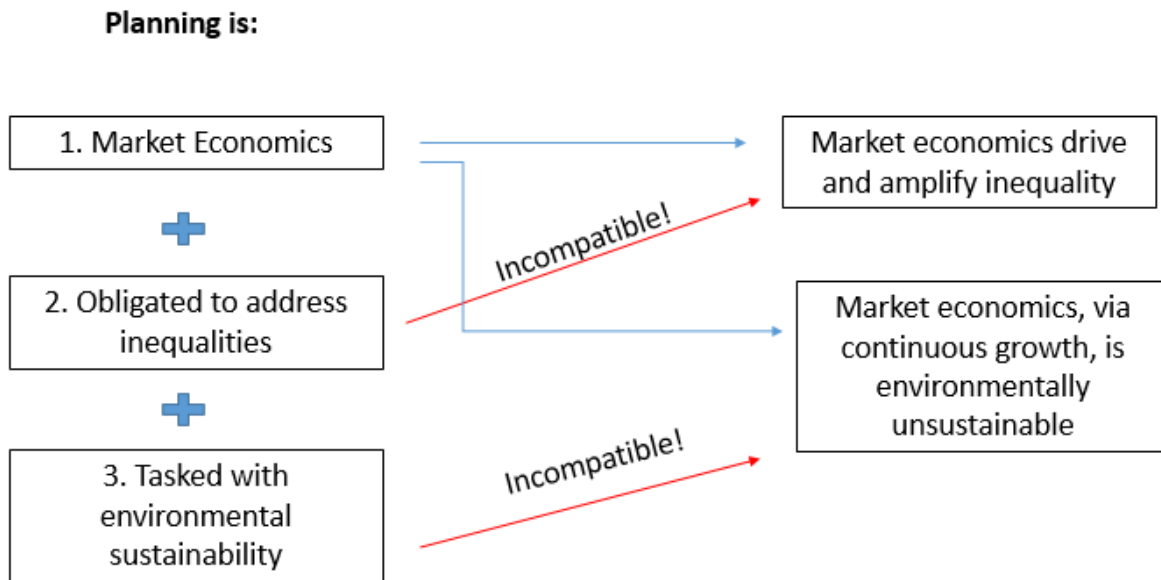


*Developed by the author*

The conflict between shallow sustainability rhetoric being used to drive green transportation in Fortaleza and the persistent inequalities suffered by the residents of informal housing settlements is very much, then, a planning problem; indeed, it is a problem with the deepest of roots. This research has relied on the unique experiences of individuals faced with displacement, coupled with publicly available documentation, to demonstrate that this conflict exists and is necessarily a concern for Fortaleza's planners. Next, I turn to the third and final research question which asks how the current plans and implementation square with the inequitable outcomes for the urban poor of Fortaleza.

## How is the notion of sustainability being squared with these outcomes for the urban poor of Fortaleza?

Questions of sustainability as they relate to the disproportionate impact of green transportation on Fortaleza's poor have been considered extensively, above. Indeed, according to document analysis that compares these projects to several independent measures of social sustainability, Fortaleza has hardly any evidence to show that social sustainability is a priority, in spite of repeated discourse that a reduction of social inequality is a desired outcome. Currently, sustainability in the city has no accountability; if a critic might argue that this analysis has used the wrong metrics, I would argue that no metrics of any kind have been discovered. The lack of a commitment to any definition or measure of sustainability leaves the notion of sustainability hollow and vulnerable to cooptation by the growth machine of the city. At best, only economic goals are being served by the rhetoric, but not the environmental and social equity concerns fail to be addressed.

## Chapter 7: In a Perfect World…

The implications of the research are that, first, green transportation projects in Fortaleza are a thinly-veiled reincarnation of urban renewal, and the outcomes are repeating the inequalities of the past. I have argued that it is the job of urban planners to address this, and in order to do so, "development" as it is associated with continuous growth will need to be dropped from the concept of sustainability and the voices of the marginalized will need to be brought meaningfully into the conversation. On a personal note, the experience of studying forceful displacement in Fortaleza is not completely told through this mixed-methods study. Some of the hunches are hinted at in the results, but leave a taste that there is much more to the story.

To take the second point first, I initiated field study in Fortaleza just as the World Cup of 2014 was beginning. I knew informal settlement dwellers were being forcefully displaced in connection with the cup and I wondered if there were differences in the outcomes based on gender. As I explored the phenomenon of housing displacement, the story that begged to be told was the one with roots much deeper than the most current mega-event or even the most current threat to any given neighborhood; in a city with so many informal housing dwellers and in a country of progressive housing policy, the story of how informal housing persists was begging to be told.

Alongside the housing displacement, as my network of contacts in a digital world grew primarily via social networking websites, and I was bombarded by the fervor for sustainability in the city. When I attended a few talks organized by young architects about urgent urban issues in Fortaleza, I realized that the same people who devoted time to advocating for the urban poor were also being called on to be the drivers of a sustainability in the city; it seemed to me that

this limited "resource" of middle-class voice that could be so politically valuable was being

asked to choose: do you care more about the poor or do you care more about sustainability?

The gender-divided outcomes of displacement was a more nuanced story requiring more time

and trust among communities, and thus did not lend itself to telling in the short time available,

although that story did lurk under the surface. Instead, I needed to dive in and see if there was

evidence that, indeed, sustainability and the rights of the urban poor were being positioned as

opposing one another; advocates would have to choose.

This study, I hope, has scratched the surface to show that while this decision is being placed in

front of Fortalezenses (residents of Fortaleza), it is a false choice; only a shallow rhetoric of

sustainability would ask anyone to put the rights of other citizens in the crosshairs in order to

achieve some notion of sustainability. True sustainability *must* fold those rights into the

equation, or no sustainability is to be had.

To return to the implications of this research, then: in a perfect world, I would argue that the

natural solution is for institutional planners to take up what I see to be their responsibilities of

advocating for equity by renewing their commitment to existing mechanisms such as the

*Estatuto da Cidade* in order to realize greater equity in the planning and implementation of city

projects; this would include a serious undertaking to incorporate use valuation of space and

inclusive practices to meaningfully get marginalized groups to the table. Unfortunately, the

world as it stands is not perfect, and it seems clear that Fortaleza's leaders are more committed

to the neoliberal growth model than they are to equity or substantive sustainability. Knowing

this, the research presented here may be most valuable to nontraditional planners, such as the

advocates found at Urucum who can bring legal challenges to the poor processes occurring in

the city; an emerging generation of socially-conscious professionals who can provide technical

expertise to active grassroots groups in developing convincing alternative visions and plans, and

academics who wish to substantiate suspicions of wide-spread inequitable urban processes

with empirical evidence from a lesser-studied geography. This work has aimed to grow the

literature with this very type of empirical evidence.

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# Appendix: Respondent Descriptions

Alto da Paz

### *Raquel*

Raquel was a resident of Alto da Paz and was evicted in February of 2014 along with the rest of the community. She is in her early 30s and has worked, on and off, in retail. She is currently a key organizer of the continuing struggle for housing rights of the former residents of Alto da Paz.

### *Rubens*

Rubens was evicted from Alto da Paz with his wife and children; he and his family now share the home of an inlaw. In his late 20s or early 30s, Rubens is a bricklayer by trade.

### *Glaucia*

Glaucia has also experienced eviction from Alto da Paz along with her spouse and children. She now lives with family members in an informal settlement adjacent to the now-vacant plot where Alto da Paz was located.

### *Lidianne*

Lidianne and her children were evicted from Alto da Paz in February of 2014. In her 20s, Lidianne was proud of her former community's peacefulness and feeling of family.

Serviluz

### *Meire*

Meire is a decades-long resident of Serviluz and is currently threatened with displacement, as her home has been marked for demolition to make way for the upcoming square and street-

widening project which would accommodate cycle lanes. She is a well-connected and well-known middle-aged woman who is active in her church, in local decision-making, and in protests for housing rights. Meire has worked in social work and has a strong distaste for the corruption she sees in politics.

## Ribamar

Also threatened with removal from Serviluz, Ribamar is a middle-aged man who engages actively in union and other political organizing in efforts to better his community. In solidarity with those evicted from Alto da Paz, he has opened his home to those with need of a place to stay. He has participated in occupations, sharing that his own first home was procured in this way. Ribamar is closely connected with workers and residents of nearby informal communities and has helped former Alto da Paz residents to organize for their rights.

## Mariana

Mariana is a resident of Serviluz with a home very near the beach and the troublesome blowing sand, but does not perceive a threat of displacement at this time (her home has not been marked for removal). With strong community connections including her children and grandchildren, along with family in her own generation and that of her parents living nearby, Mariana does not want to leave Serviluz. Mariana sees churches and community organizations like them to be the most powerful in her community.

## *Camila*

Camila is a mother and businesswoman in her late 20s or early 30s. Although her home has not been marked for removal, she understands that she is threatened with forceful displacement because her neighbors nearby have experienced it and recent local meetings have indicated that most of the neighborhood is now threatened, anew. Camila runs her business from her home and her clientele is local. She feels as though the active leaders in her community do a good job of representing her and the interests of the community, broadly, although she says that her home is too small for the people and activities that go on within it; she feels that a bigger home is needed, but prefers a remodel to add another floor rather than moving to another location.

## *Ivanildo*

Ivanildo is a charismatic middle-aged man who is one of the primary contacts of the Lauro Vieira Chavez community. Ivanildo runs a mobile cyber-café and printing business which is sometimes located within his home and sometimes located on a nearby street corner, along with cold drinks for sale. Ivanildo was displaced by Fortaleza's light rail project, along with over 50 other homes in his community, although the light rail still shows no signs of construction in or near Lauro Vieira Chavez. Ivanildo has been a key organizer and negotiator in the struggle against the light rail-related demolitions and, now, against the new threat of an avenue that will pass through the community causing almost, if not total, demolition of Lauro Vieira Chavez. Ivanildo believes that the people have the power to stand up against injustice, but it is a war in which one can never let down their guard.

## Cláudio

A second member of a three-headed panel of leadership in Lauro Vieira Chavez, Cláudio is a key community organizer and church leader. Having endured displacement to a rental home outside of Lauro Vieira Chavez but nearby, Cláudio believes strongly in representing the true interests of the community rather than serving one's own interests. Cláudio runs a bicycle repair shop near the community and thus was deeply invested in staying in the area in spite of being displaced. Cláudio remains very involved in the community as an organizer and as a church leader; his church is still located within the community.

### Other Respondents Not Living in Informal Settlements

## Patrícia

Patrícia does not live in an informal community, but has worked closely with those facing displacement as a member of URUCUM, a collective of lawyers who advocate against human rights abuses and, specifically, for housing rights in Fortaleza. Patrícia is a young professional who not only believes that the power belongs to the masses, but spends her time organizing and supporting people in the claiming of that power through protests, educational outreach, and other means. Patrícia has worked directly with several of the other research participants included in this study.

## Natércia

Natércia lives in a formal part of the city close to the commercial and high-income center. She worked as a teacher for around a decade, teaching French in several public schools including several that are located in informal communities. In her 40s, Natércia recently made a career shift and became a police investigator. Natércia's attitude about community is that it is not

bound to any particular location; any one person is likely to be part of many communities, such as her/his professional community or community of interests. She does not see much hope for the general public to claim power; she sees this being very concentrated in the hands of the wealthy.

## *Mateus*

Mateus does not live in an informal settlement but rather behind a private gate and across the road from a gated community. He and his family run a language instruction and translation company, as they are a blended Brazilian-American family with both Portuguese and English as native languages. Mateus is in his early 20s and has participated in some of the protests against governmental abuses of power that have occurred in the last few years, although he does not see much hope for average people to make a change. Mateus does not know his neighbors and feels that those people facing displacement must not be offered much in negotiations with government officials, financially, or they would have an easy choice to move to a better home.