JOURNAL OF INCLUSIVE CITIES AND BUILT ENVIRONMENT

J-ICBE

Interrogating inclusivity in contemporary cities

Journal of Inclusive cities and Built environment
Volume 1 No.1

e-ISSN 2788-564X

Print ISSN 2788-5631

Published by the University of KwaZulu-Natal
https://journals.ukzn.ac.za/index.php/JICBE

Journal of Inclusive cities and Built environment. Vol. 1 No.1

How to cite: Hope Magidimisha-Chipungu and Lovemore Chipungu. 2021. Editorial. *Journal of Inclusive cities and Built environment*. Vol. 1 No.1, Pg iii-iv.

EDITORIAL

By Hope Magidimisha-Chipungu and Lovemore Chipungu

Published March 2021

INTRODUCTION

Achieving inclusivity in contemporary cities is an elusive fit that has relegated most vulnerable households to the edge of destitution. Migrants, children, women, the elderly, and those living with disabilities are being forced to fend themselves inhumanly as existing supporting mechanisms are failing dismally to respond to their needs. While the magnitude of exclusivity differs significantly across global cities, the reality of the matter is that there is consistent evidence to suggest that most governments are negating their responsibility in this regard. What is more worrying is the inability of some of these governments to provide systematic policy frameworks responsive to vulnerable groups' plight. This is a worrying scenario prevailing in the face of international policy frameworks inaugurated to liberate humanity from all societal ills. The ravaging effect of covid-19 has not only complicated the situation, but further debilitated governments' financial situations to respond to pressing needs. Hence cities remain trapped in this quandary. This first issue of the Journal of Inclusive Cities and Built Environment strives to interrogate dimensions of Inclusivity in Contemporary Cities. The issue contains Seven (7) double-blind Peer-reviewed articles covering various aspects of inclusivity within cities. These articles are a collection of theoretical underpinnings that provide insight into inclusivity and supported by empirical evidence from from various cities. An overview of papers in this inaugural edition is provided below.

Parke, D and Adebayo, P's article is on *Health, housing, and urban inclusion in the time of covid-19: evidence from Detroit and Durban*. The article explores how COVID-19 has illuminated the intersections between health and housing in the context of equity and inclusive cities. The article unpacks theoretical pathways that link housing to health issues and applies them to the COVID-19 situation. It analyses how drastic measures taken at the height of the pandemic (such as stay-at-home orders, social distancing and lockdowns) impact negatively on poor households such as the homeless and unemployed. More so, the pandemic sharpens the visibility of existing inequitable structures that shape the social and built environment and placed vulnerable populations at heightened risk. Anecdotal evidence from Detroit, Michigan, USA, and Durban, South Africa, allows for a preliminary exploration of these intersections. The paper concludes with recommendations for cities to improve equity and inclusivity.

Alalade, G. and Chipungu, L examine the *Challenges of Vulnerable Immigrants: A Focus on Refugees and Housing, Their Canadian Experience.* This article evaluates the problems of refugees and immigrants in Canada. It shows differentiated integration processes and some form of discrimination experienced by women and the elderly in the Candian society. More so, it exposes poverty, insecurity and social exclusion among migrants living in precarious housing conditions. The depth of empirical evidence provided in this article challenges the prevailing notion of developed countries being more accommodative of vulnerable groups such as immigrants. More so, it is a pointer to the gross impact of migrations on national fiscus of governments in both developed and developing countries. The article concludes by advocating for the creation of economic opportunities for migrants and refugees supported by accessible information centres manned with officials who understands diverse cultural backgrounds. This would go a long way to alleviate the plight of migrants and refugees.

Naidoo et al. *Critique the Modernist Approach to Post-Apartheid Housing Delivery and Urban Design, noting that Apartheid planning approaches have significantly contributed to the lower quality of marginalized groups' dwelling.* This observation is based on the continued betterment of dwellings of privileged minorities within the South African City Spaces. In trying to unravel underlying issues, the authors critically review and question the extent to which the socio-spatial manifestations of segregatory design approaches contribute towards creating inclusive urban landscapes that can benefit contemporary South African communities. In their critique, the authors buttress their arguments by using living examples from the South African city of Durban's residential areas and the CBD. They conclude by arguing that lasting solutions to the current spatially distorted urban environments can only be obtained by addressing historical disadvantages that disconnected people's identity and their houses.

Wahab et al. appraised *Community Consultation in Risk Management: Examples from Nigeria.* Their discourse is premised on the notion that "disaster and risk" are a global pandemic and communities are the embodiment of stakeholders well positioned to manage global risk exposures. They argue that the immediate community plays a vital role in risk management. The article explores risk management strategies that were employed in the conflict-ridden state of Borno – Nigeria; where communities took the centre stage to bring nolmacy to their neighbourhoods. The authors contend that extensive consultations with critical stakeholders coupled with a healthy sustained collaboration among the stakeholders led to improved coordination in the fight against insurgency in Borno state communities. Further findings in this article shows that coordinated information dissemination between communities and the Task Force was an effective mechanism for community policing and risk reductions. In their analysis, the authors further noted that a low level of public awareness of disaster risk, unavailability of relevant data, weak capacity and lack of political will (amongst others) are stumbling blocks to risk management in communities. The article concludes by recommending that a community-based disaster risk management approach, which entails intensive and extensive consultation is ideal for building people's coping strategy against disaster risks thereby contributing towards creating safer and resilient communities.

Mbambo et al. analyse *the Use of IBTS to Address Housing Challenges in South Africa: A Case Study of Av Light Steel, Potchefstroom, South Africa.* This paper examines how Innovative Building Technologies (IBTs) could be used to offset the housing backlog and other related challenges in post-apartheid South Africa. The key areas of assessment included in this article are the affordability of building material, the time-frame for construction, and the system's sustainability. The study uses AV Light Steel and its sister company, Tshitshirisang Construction Company, as a case study from among the active IBT system manufacturers that use light steel for housing production in South Africa. Using empirical evidence obtained through participatory observation and semi-structured interviews with system producers, officials and beneficiaries of IBT products, the authors argue that beneficiaries attested to the efficacy of the IBT built houses. While the authors contend that IBTs can be used in solving the housing backlog and other related housing challenges, there is still need to market the products so that they can obtain buy-in from various stakeholders involved in housing production.

Ogunmodede, O and Olufemi, O focus on *Safeguarding the Food Basket From Oil Pollution In Nigeria: Post-Oil City Perspective.* This article argues that the extent of ecological and health damage of oil spills, and pollution in Nigeria is unquantifiable. Such oil pollution has resulted in systematic degradation of the environment, health, livelihoods and food systems of people residing in oil spill areas. In their bid to determine the extent of damage, the authors used secondary data reviews on oil spills. They contend that decades of environmental inequities significantly contributed to oil spills, environmental toxicity, contamination, and affects food and people's health in the Niger Delta region of Nigeria. Further findings revealed that oil spills result in the collapse of the local economy and negatively impacts on lives and livelihoods by stifling food production and food security. Above all, it is envisaged that oil spills have substantial health implications both for humans in the region and the ecosystems. The paper concludes by advocating for an inclusive approach that detoxifies the environment in the post-oil city thereby preserving livelihoods and health, restoring human dignity and promoting environmental justice.

Finally, **Gondwe, J. and Manda, M.** focused on *Localizing Children's Play Spaces Through The Child-Friendly City Lens: Towards Children's Inclusivity In Mzuzu City, Malawi.* The paper draws on a review of childhood discourses on child-focused literature and content analysis of some of Malawi's planning instruments to argue that Mzuzu City is not a child-friendly city. Specifically, the planning instruments that include planning law, national urban policy, the planning guide book and Mzuzu city structure plan that dictate public space apportioned for various activities are noted to fulfill the needs and aspirations of adults. Furthermore, even though a malleable definition of childhood is likely to accommodate the lived experiences of children living in the City, child agency is conspicuously absent. This paper suggests that there is a need to reframe these planning instruments to reimage the built environment to capture the needs and aspirations of children as it does for adults.

Published by the University of KwaZulu-Natal
https://journals.ukzn.ac.za/index.php/JICBE

Journal of Inclusive cities and Built environment. Vol. 1 No.1

How to cite: Parke, D and Adebayo, P. 2021. Health, housing, and urban inclusion in the time of covid-19: evidence from Detroit and Durban. *Journal of Inclusive cities and Built environment*. Vol. 1 No.1, Pg 1-15.

HEALTH, HOUSING, AND URBAN INCLUSION IN THE TIME OF COVID-19: EVIDENCE FROM DETROIT AND DURBAN

By Dana Parke and Pauline Adebayo

Published March 2021

ABSTRACT

"Housing is a key site through which COVID-19 is experienced." (Rogers and Power, 2020: 177)

This paper explores how COVID-19 has illuminated the intersections between health and housing, in the context of equity and inclusive cities. This paper reviews the theoretical pathways that link housing as an important determinant of health, and applies them to the COVID-19 situation. For example, stay-at-home orders are impossible for homeless individuals, social distancing is difficult in overcrowded housing, lockdowns in poor quality homes can result in health challenges, and pandemic-induced unemployment increases risk of eviction and poor health outcomes. Importantly, the pandemic has sharpened the visibility of existing inequitable structures that shape the social and built environment and place vulnerable populations at heightened risk. Anecdotal evidence from Detroit, Michigan, USA and Durban, South Africa allows for preliminary exploration of these intersections. The paper concludes with recommendations for cities to improve equity and inclusivity.

KEY WORDS Health, Housing, Equity, Inclusion, COVID-19

1. INTRODUCTION

COVID-19 is a recent major global health challenge. Globally, 115.3 million cases of COVID-19 have been reported and 2.56 million people have died of COVID-19 as of 4 March 2021 (Johns Hopkins University & Medicine Coronavirus Resource Center, 2020). Since it first appeared in Wuhan, China in November 2019, cases spread quickly around the world, and on March 11, 2020, the World Health Organization (WHO) declared the coronavirus outbreak a global pandemic (Cucinotta and Vanelli, 2020). Shortly afterwards, most countries responded by closing borders and instituting strict lockdowns. While the intersections between health and housing are widely recognized (Taylor, 2018), the extended stay-at-home orders coupled with the propensity of household transmission of COVID-19 make clear that "[h]ousing is a key site through which COVID-19 is experienced" (Rogers and Power, 2020: 177).

This paper aims to explore how the COVID-19 pandemic has further illuminated the intersections between health and housing, in the context of equity and inclusive cities. Examples based on rational, observational evidence reveal that stay-at-home orders are impossible for individuals experiencing homelessness. Overcrowded housing makes it difficult to practice social distancing and contributes to household transmission of COVID-19. Extended lockdowns in poor quality housing can result in physical and mental health challenges. Further, unemployment and under-employment as a result of the pandemic make it difficult for residents to afford basic housing, healthcare, and other necessities, putting them at risk of eviction and poor health outcomes. Importantly, the pandemic has sharpened the visibility of existing inequitable structures that shape the social and built environment and place people of color and other vulnerable populations at heightened risk during COVID-19. The pandemic reveals the need for cities to intentionally focus on inclusivity.

The remainder of this paper is structured as follows. The first section reviews the four broad theoretical pathways that demonstrate how housing functions as an important determinant of health. Next, the paper applies the COVID-19 context to these four theoretical pathways to outline the specific ways that COVID-19 and housing interact, given the available global evidence. The following section discusses inequity as a root of these interactions. Anecdotal evidence from two global cities, Detroit, Michigan, USA and Durban, South Africa, allows for preliminary exploration of these intersections between health, housing, and inclusive cities in the time of COVID-19. Finally, the paper concludes with recommendations for cities to improve equity and inclusivity, in order to reduce susceptibility to future pandemics and improve the health and lives of all citizens.

2. LITERATURE & THEORETICAL APPROACH

2.1. HOUSING & HEALTH PATHWAYS

It is well understood that there are social and built environment factors that determine one's health outcomes, beyond individual genetics and behavior. Social determinants of health (SDOH) are "the conditions in which people are born, grow, live, work and age. These circumstances are shaped by the distribution of money, power, and resources at global, national, and local levels" (World Health Organization, n.d.). SDOH largely depend on one's access to and the quality of such resources that impact health risks and outcomes: healthcare, education, employment, transportation, housing, nutrition, and more. The WHO further states that SDOH are "mostly responsible for health inequities – the unfair and avoidable differences in health status seen within and between countries" (World Health Organization, n.d.).

Housing functions as an important social determinant of health via several mechanisms. Earlier literature and systematic reviews documented three main pathways linking housing and health: 1) physical conditions within homes; 2) neighborhood area conditions; and 3) housing tenure and affordability (Gibson et al., 2011, Robert Wood Johnson Foundation, 2011). For example, Gibson refers to the psychosocial impacts of housing tenure: "owning one's home may confer greater feelings of security or prestige than social or private renting, and is often used as an indicator of greater long-term command over resources. Conversely, the burden of debt involved may lead to anxiety and worry" which can negatively impact health (Gibson et al., 2011: 176). Most recently, building off the previous literature, Taylor (2018) suggested that housing and health interrelate via four broad pathways, teasing out the differences between housing tenure (stability) and housing affordability.

First, the housing stability pathway describes how one's access to a stable home impacts one's health. The link between homelessness and poor health is well documented (Maness and Khan, 2014). For example, "[m]any people experiencing homelessness have chronic mental and physical conditions, engage in high rates of substance abuse (including sharing of needles), and have often less access to healthcare" (Tsai and Wilson, 2020: e186). However, "housing is often viewed as a dichotomous issue: one is either homeless or housed, a perspective which omits the various precarious housing situations that people, especially vulnerable populations, may face" (Hernandez and Suglia, 2016: 29). Thus Taylor's housing stability framework allows for understanding the full spectrum of housing insecurity in its various forms, such as being behind on rent or mortgage payments, frequent moves, living in hotels, or couch surfing, and its subsequent health implications (Taylor, 2018). For example, housing instability "is associated with emotional, behavioral and academic problems among children, and with increased risk of teen pregnancy, early drug use, and depression during adolescence" (Robert Wood Johnson Foundation, 2011: 5).

The second mechanism is the housing safety and quality pathway. This refers to the link between the physical conditions inside the home and its occupants' health. For example, housing containing mold or dust create poor air quality which can trigger respiratory illnesses – in the United States, 40% of asthma attacks are a result of triggers inside the

home (Maqbool et al., 2015, Green and Healthy Homes Initiative, n.d.). Lead, often found in pipes or paint, can result in permanent damage to a child's brain and nervous system (Green and Healthy Homes Initiative, n.d.). Fires, accidental injury, carbon monoxide poisoning, and more all demonstrate how a home's environment can produce negative health outcomes.

Third, the affordability pathway depicts the situation by which the financial burden of housing reduces the occupant's income available for healthcare and health-promoting goods, including nutrition. Many parts of the world are experiencing an affordable housing crisis. For example, in the United States, 37.8 million households (31.5%) are cost-burdened, paying over the recommended 30% of their income towards housing; and 18.2 million households pay over 50% of their income to housing, with low-income renters particularly affected (Joint Center for Housing Studies of Harvard University, 2019: 4). In South Africa, the typical monthly rent for the cheapest, newly built house was 4,000 ZAR (~$260 USD), equating to over 50% of one's income (calculated with GDP per capita at $6,001 USD) (Centre for Affordable Housing Finance in Africa, 2020). With limited income left over after paying for housing, many households struggle to afford other necessities which can negatively impact health.

Finally, the neighborhood pathway demonstrates that the location of one's house determines one's health. Environmental characteristics of a neighborhood, such as access to public transit, grocery stores, environmental pollution, parks, health clinics, as well as social factors such as neighborhood segregation and social capital can all have an impact on health – both positive and negative (Taylor, 2018).

Clearly the evidence shows a strong link between housing and health. Indeed, one review concluded, "Overall, the research supports the critical link between stable, decent, and affordable housing and positive health outcomes" (Maqbool et al., 2015: 1). The remainder of this paper primarily uses these four pathways for categorization. These pathways are useful to exemplify housing and health linkages especially for policy-making purposes; however, it is important to note that these pathways are often interconnected and thus it can be difficult to disentangle their effects. For example, those who are housing insecure because of financial reasons also often end up residing in poor quality housing that is located in neighborhoods with less services – such a situation links all four pathways, so it is difficult to tease out direct causality. However, as will be discussed later, the roots of such situations are primarily inequity and injustice.

2.2 HOUSING & COVID-19

The COVID-19 pandemic has sharpened the visibility of this important link between health and housing. Perhaps most obviously, the pandemic precipitated various government-mandated shelter-in-place and stay-at-home orders to attempt to prevent the spread of infection. Consequently,

"[Homes] are now serving not only as shelter and refuge, but also as workplace and school and gym and theater and restaurant and bar and laundry and town square. They now contain, for many, an entire day's worth of demands. But whether a house or a compact apartment, those dwellings were never meant to be as profoundly multifunctional as a shelter-in-place scenario requires them to be" (Garber, 2020).

Evidence from Italy found that the "lockdown and consequent confinement of people inside their homes has contributed to the worsening of Non-Communicable Diseases, such as some chronic diseases (e.g., cardiovascular disease and diabetes) and mental disorders such as anxiety, insomnia, depression, and learning problems in children" (D'alessandro et al., 2020: 62). Indeed, "quarantined people are very likely to show mood lability, depressive and anxiety symptoms, irritability, insomnia, and acute and post-traumatic stress symptoms" (Amerio et al., 2020: 2). Perhaps unsurprisingly, there is also evidence of increased rates of domestic violence during the lockdown, especially considering financial stress due to the pandemic (Rogers and Power, 2020).

The pandemic also highlights homes as a focal point of health by another mechanism: household transmission of COVID-19. Evidence from China found an overall 16.3% rate of secondary transmission of SARS-CoV-2 among household residents, and among spouses of COVID-19-positive patients, even higher at 27.8% (Li et al., 2020). This data reveals that COVID-19's household transmission rate is higher than that of other prominent infectious diseases including severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS), suggesting that the probability of household transmission may be stronger than community transmission (Li et al., 2020). Consequently, certain factors relating to household composition and structure may contribute to an overall higher case load of COVID-19. Indeed, the United States Centers for Disease Control and Prevention guidelines emphasized quarantining the entire household at home if a member tested positive (Mericle et al., 2020), clearly showing the strong link between housing and health during the pandemic.

The remainder of this section applies the existing evidence on COVID-19 to the four theoretical health and housing pathways iterated above. It is important to note that as COVID-19 is a new phenomenon, the literature and evidence are thus far limited.

2.2.1. THE HOUSING STABILITY PATHWAY

Stable housing is a function of several factors, including access to and availability of affordable housing. Quite simply, stay-at-home orders are impossible for individuals experiencing homelessness, placing these individuals at higher risk of exposure to COVID-19 (Rogers and Power, 2020). "Many people experiencing homelessness live in congregate living settings – be it formal (ie, shelters or halfway houses) or informal (ie, encampments or abandoned buildings) – and might not have regular access to basic hygiene supplies or showering facilities, all of which could facilitate virus transmission" (Tsai and Wilson, 2020: e186). Further, individuals experiencing homelessness are often transient and their mobility

poses specific challenges for conducting COVID-19 prevention, testing, treatment, and quarantine measures (Tsai and Wilson, 2020). Thus, tailored strategies to prevent the spread of COVID-19 among individuals experiencing homelessness are important. COVID-19 has also illuminated housing insecurity, particularly among college students. In both the United States and South Africa, the onset of the pandemic concurred with university campuses and residence halls closing, leaving many students with limited options. For those forced to double-up, their risk of COVID-19 exposure is increased, and "the lack of secure housing negatively impacts student enrollment and success" (Graham, 2020).

2.2.2. THE HOUSING QUALITY & SAFETY PATHWAY

The manner in which housing is designed has significant implications for its quality. One feature of housing quality is having adequate space for the number of occupants. In the time of COVID-19, overcrowded housing makes it particularly difficult to practice social distancing and contributes to household transmission of the disease. In the United States, over 4 million households lived in crowded housing in 2017 (United States census Bureau, 2017). Overcrowding is even more acute in developing countries: "Social distancing and quarantine are next to impossible in the dense, informal settlements that house over 1 billion of the world's population" (Rogers and Power, 2020: 179). In South Africa, 23% of the urban population resides in crowded informal settlements (United Nations Global SDG Database, 2019). Space limitations are also prevalent in South Africa's Reconstruction and Development Programme (RDP) homes: the government built millions of RDP homes post-apartheid; however, they are criticized for their small size and while housing policy envisaged families building onto these homes, many families have been too poor to invest in expansion, resulting in inadequate housing (Adebayo, 2011). Further, the open floor plan commonly used in US housing design prevents social distancing, and also leads to limited privacy and increased stress (Garber, 2020).

Beyond the risk of contracting COVID-19 in overcrowded housing, extended lockdowns inside homes of poor quality can result in numerous other negative physical and mental health outcomes. A study of university students in Milan, Italy during the country's strict lockdown found poor housing to be associated with increased risk of depressive symptoms, particularly when respondents' housing had small dimensions, had limited views and outdoor livable space, and otherwise was of poor quality based on indicators including natural lighting, thermo-hygrometric comfort, and privacy (Amerio et al., 2020). This same study found an increased risk of depressive symptoms among respondents who indicated worsened working performance related to working from home (Amerio et al., 2020). While this study was limited in its sample size, one can anticipate these mental health effects to be fairly widespread in areas with poor housing.

A key aspect of housing quality during COVID-19 is the presence of running water. In addition to limiting the comfort of those residing in these homes, lacking water specifically makes hand hygiene difficult, which is a key infection prevention tool to lessen the spread of COVID-19. Three billion people globally lack basic handwashing facilities and in the United States alone, nearly 2 million people lack running water in their house, representing a significant global challenge (Karaye and Horney, 2020, World Health Organization, 2019).

COVID-19 also produces economic implications which affect housing quality: in a tightened economy, property owners have limited ability to pay for standard maintenance. Renters will be particularly impacted: "Staff reductions will make it harder for property owners to conduct house repairs and ensure safe living spaces for residents, precisely when those renters need to stay in their units" (Goodman and Magder, 2020: 3). Various preventative measures are recommended to improve housing units in the time of COVID-19, including hand sanitizer stations, plexiglass screens for staff offices, personal protective equipment for staff and maintenance crews, and contactless doors, sinks, and other amenities. However, such measures require upfront funding which may not be currently available. These protective measures are particularly important for multifamily or congregate housing – such as nursing homes, homeless shelters, and prisons. Considering the typology of housing is not specifically mentioned in Taylor's four pathways; however, COVID-19 reveals that this should be a factor that is examined in more detail as housing type can determine health outcomes.

2.2.3. THE HOUSING AFFORDABILITY PATHWAY

The COVID-19 pandemic has had a staggering economic impact. A World Bank report forecasted global GDP contracting by 5.2% in 2020 – "the deepest global recession in eight decades" (World Bank, 2020: xv). Unemployment and under-employment due to the pandemic make it difficult for residents to afford their housing, healthcare, and other necessities – putting them at risk of eviction and poor mental and physical health outcomes (Jin et al., 1995).

In the United States, a recent weekly Household Pulse Survey revealed that from 14-26 October, 10.9% of adults (almost 24 million) reported that their household sometimes or often did not have enough food to eat in the past week (Center on Budget and Policy Priorities, 2020). Of these adults, 81% said that they "'couldn't afford to buy more food,' rather than (or in addition to) non-financial factors such as lack of transportation or safety concerns due to the pandemic" (Center on Budget and Policy Priorities, 2020: 2). This directly translates to health outcomes, as a lack of food negatively impacts one's nutrition. Compounding this finding, nearly 80 million US adults (1 in 3) reported that it was somewhat or very difficult to cover usual household expenses in the past week – including food, housing, transportation, and medical payments, which directly shows the cost trade-off between necessities (Center on Budget and Policy Priorities, 2020).

A South African survey discovered that within the first month of lockdown, 3 million South Africans lost their employment and income and vulnerable groups including African/Blacks, women, and youth were disproportionately affected (Haffajee, 2020). A shocking 47% of survey respondents stated that their household ran out of money for food in April 2020 (prior to 21% in 2018), with 1 in 5 respondents sharing that at least one household member went hungry in the past week (Haffajee, 2020).

In the United States, renters disproportionately are employed in industries most affected by COVID-19 including the entertainment, transportation, and food and accommodation sectors (Goodman and Magder, 2020). In general, "most renters have lower incomes than homeowners and have little or no savings and cannot withstand the double whammy of lost income and potentially falling ill with the coronavirus" (Goodman and Magder, 2020: 6). In recognition of the economic hardship, global policymakers have proposed and implemented moratoriums on rent and mortgage payments; however, they have met with various levels of success (Rogers and Power, 2020). Notably, nearly 1 in 6 adult renters in the United States (11.5 million adults) were not caught up with their rent payments in late October 2020 (Center on Budget and Policy Priorities, 2020), representing significant financial hardship and threat of eviction. This situation relates to the housing stability pathway, especially since if one has an eviction on one's record or is 'blacklisted' for habitual rent arrears, it becomes difficult to secure future housing. Herein lies a full-circle link between health and housing: a global health pandemic precipitated an economic downturn which consequently makes it difficult for individuals to afford housing, healthcare, and basic necessities, and the subsequent lack of such services negatively impacts one's health.

2.2.4. THE NEIGHBORHOOD PATHWAY

The epidemiology of COVID-19 provides strong evidence for the importance of neighborhood characteristics to determine health outcomes. Evidence in the United States has found that "neighborhoods with the highest proportion of racial/ethnic minorities and the most persons living in poverty are experiencing higher rates of hospitalization and death" due to COVID-19 (Hatef et al., 2020: 2). For example, a recent study evaluating COVID-19 cases from seven US states used the Area Deprivation Index (ADI, which includes factors relating to income, education, and housing quality), and found that zip codes with a higher ADI had a higher COVID-19 prevalence compared to zip codes with a lower ADI (Hatef et al., 2020). Another recent study ranked US counties by their level of social vulnerability and importantly found that social factors including "minority status and language, household composition and disability, and housing and transportation [predicted] COVID-19 case counts" (Karaye and Horney, 2020: 323).

Neighborhood configuration in informal settlements poses unique challenges during COVID-19. A study measuring distance between dwellings in two informal settlements in Cape Town, South Africa found that nearest neighbors are within 0.5-0.7m, and thus, upon leaving one's home, one would be in violation of social distancing regulations (Gibson and Rush, 2020). However, due to the nature of the settlements, most homes lack water and toilets, and thus travel to neighborhood communal sanitation areas is a necessity, creating sites for potential disease transmission (Gibson and Rush, 2020).

Neighborhoods are often important sources of social connection and community services; however, lockdowns due to COVID-19 "have shaken the dynamics of sociability as well as disrupted the use of public spaces" (de Oliveira and de Aguiar Arantes, 2020: 1)Brazil</title><secondary-title>City & Society (Washington, DC. This particularly contributes to social isolation, which has negative physical and mental health impacts particularly among the elderly, who lack means to access food, medications, and companionship (Archambault et al., 2020). Other neighborhood characteristics of relevance during COVID-19 include access to internet, especially to facilitate working from home and maintain social connections, as well as access to parks for socially distanced outdoor physical exercise to promote health during the sedentary quarantine.

2.3. EQUITY & INCLUSIVE CITIES

Importantly, the pandemic has sharpened the visibility of existing inequitable structures that shape the social and built environment and place people of color and other vulnerable populations at heightened risk during COVID-19.

Both the United States and South Africa have historical legacies of inequality that shape modern structures. In the United States, a tarnished history of slavery of African labor turned into legalized racial segregation of public spaces in the late 1800s with the Jim Crow laws. In the 1900s, discrimination housing segregation was particularly pronounced via zoning laws, redlining maps, and racial covenants in property deeds preventing homeownership by Black people – the effects of which remain visible today, as clearly evidenced by the currency of the issues raised under the Black Lives Matter movement.

In South Africa, segregation of local Africans began under colonialism and continued after independence, legalized, for example, through the 1913 Land Act which limited land ownership of Black Africans to "native reserves" which encompassed only 13% of the total land. Most notably, inequity was entrenched during *apartheid*: the system and formal laws of racial segregation and discrimination implemented by the National Party from 1948 until 1994, conferring power to the minority white population over Black, Coloured, and Indian people. Apartheid in South Africa had and continues to have numerous negative effects on many sectors, particularly housing, whereby land use was racially segregated and Black Africans were restricted to living in the urban periphery. Today, South African cities are among the most unequal in the world, with Gini coefficients above 0.7 (United Nations Human Settlement Program, 2016).

This inequitable legacy is revealed during COVID-19. For example, across the United States, African Americans are dying from COVID-19 at 2.2 times the rate of white people (The COVID Tracking Project, 2020). Other US minorities (Hispanic or Latino, American Indian or Alaska Native, and Native Hawaiian and Pacific Islander) also have higher death rates than whites (The COVID Tracking Project, 2020). In South Africa, there is a paucity of data on race; however, there are indications that Blacks and mixed-race patients have a higher risk of dying from COVID-19 than white patients (Associated Press, 2020). The finding of increased COVID-19 cases in socially vulnerable counties in the US, especially minority communities, "underscores the importance of continuing to work to address inequities related to the social determinants of health" (Karaye and Horney, 2020: 321).

At the heart of all of these housing and health pathways lie poverty, inequity, and institutional racism. Poverty increases one's risk of exposure to COVID-19 via several mechanisms. First, lower-income people are more likely to live in crowded housing which increases risk of household transmission. These individuals are also less likely to have opportunities to work from home which increases their exposure to COVID-19, particularly if they rely on public transportation to access their place of employment (Patel et al., 2020). Further, they are more likely to have unstable income which can increase housing insecurity; in South Africa, a significant proportion of the population is engaged in the informal sector for subsistence livelihoods. Importantly, they are also more likely to have comorbidities placing them at a higher risk of severe illness due to COVID-19 and more likely to access healthcare at advanced stages of illness resulting in worse health outcomes (Patel et al., 2020).

"COVID-19, although global, is not an 'egalitarian' or 'democratic' disease. On the contrary, it tends to have an uneven impact on different territories and socio-racial groups that constitute the urban space, which can further deepen the already overwhelming inequalities [in cities]" (de Oliveira and de Aguiar Arantes, 2020: 9). It is thus important for cities to recognize inequitable structures and intentionally focus on inclusivity.

3. GLIMPSES FROM TWO CITIES

3.1. METHODOLOGICAL APPROACH

Anecdotal evidence from two global cities, Detroit, Michigan, USA and Durban, South Africa, allows for preliminary exploration of these intersections between health, housing, and inclusive cities in the time of COVID-19. Detroit and Durban were selected not only due to the authors' personal familiarity with these cities, but because of the interesting parallels despite the very distinct developmental contexts between the United States and South Africa. The two countries have significantly different resource levels; for example, South Africa's GDP per capita was $6,001 in 2019 compared to $65,297 for the United States (The World Bank, 2021). However, both cities are marked by a legacy of unjust urban planning and discriminatory housing policies that exclude vulnerable populations, experience high levels of poverty, have a Black majority population, have high levels of health comorbidities, and experience significant challenges relating to housing delivery.

Detroit struggles with a legacy of racial segregation, "white flight" to the suburbs whereas "Black people were immobile due to discriminatory housing policies" (Simmons, 2019: 91), and economic decline precipitating the 2008 housing crisis and the municipal bankruptcy in 2013. Today, 36.4% of Detroiters live in poverty and the median household income is a low $29,481 USD (United States Census Bureau, 2018). Race is an important factor in Detroit: a vast majority – 78.6% – of the current population is African American, with 7.6% being Hispanic or Latino, and only 10.3% being white (United States Census Bureau, 2018).

In Durban (part of eThekwini Metropolitan Municipality), apartheid's racial segregation legacy remains very much present. For example, Blacks and Coloureds are the primary populations living in informal areas (Marx and Charlton, 2003) and government-built low-cost RDP homes are criticized for their poor quality and distance from the city center which "entrenches rather than ameliorates the structural injustice that [is] the legacy of apartheid spatial segregation" (Pithouse, 2008: 1). Fifty-two percent of residents live below the poverty line (the vast majority of whom identify as Black), and residents face high unemployment, limited financial resources, skill/literacy, mixed access to basic services, and an increasingly high cost of living (eThekwini Municipality, 2017). The majority of eThekwini's inhabitants are Black Africans (73.8%), while 16.7% are Asian, 6.6% are White, and 2.5% are Coloured (South African Census, 2011).

Further, both cities have been hit hard by COVID-19. As of November 29, the United States ranks first in COVID-19 cases with 13.3 million cases and 266,452 deaths; South Africa ranks 16th globally in cases (785,139) and 14th in deaths (21,439) (Johns Hopkins University & Medicine Coronavirus Resource Center, 2020). Detroit and Durban have similarly had negative experiences with COVID-19 as will be discussed below.

Thus, the pandemic provides an interesting scenario to explore the two cities' experiences at the intersection of health, housing, and inclusivity. Each city section describes how the city experienced COVID-19, surmises urban and social attributes of the two cities that make them more susceptible to COVID-19 with particular attention to the four health and housing pathways, and evaluates initial government response and outcomes to determine whether the links between health and housing are recognized and equitable approaches are utilized at the municipal level.

3.2. DETROIT, MICHIGAN, UNITED STATES

3.2.1. COVID-19 IN DETROIT

Michigan's first case of COVID-19 presented on 10 March 2020; on 24 March 2020 Governor Whitmer instituted a stay at home order. With a shrinking population of 672,662, Detroit, Michigan is only the 23rd largest US city (United

States Census Bureau, 2018) – and yet, Detroit was an early epicenter of COVID-19 in the United States. As of 28 November 2020, the City of Detroit alone has had 19,985 confirmed cases and 1,584 residents have died from COVID-19 (Detroit Health Department, 2020).

The COVID-19 pandemic is exacerbating poverty and housing insecurity in Detroit. Importantly, COVID-19 has shed light on the racial disparities prevalent in Detroit. In early April 2020, Blacks experienced 33% of COVID-19 cases and 40% of COVID-19 deaths in Michigan, despite making up only 14% of Michigan's population (Wayland et al., 2020). This trend has continued: as of 28 October 2020, Blacks have died from COVID-19 at more than double the rate of whites in the state of Michigan (The COVID Tracking Project, 2020).

COVID-19 importantly brings to light the burden of disease that already existed in Detroit. Detroit is home to numerous individuals who fall into high-risk groups for severe illness if infected with COVID-19. For example, 13.3% of Detroit's population is over age 65 (United States Census Bureau, 2018). Further, the top community-identified health needs in Detroit in 2019 were 1) diabetes, 2) mental health, and 3) obesity, nutrition, and physical activity (Henry Ford Health System, 2019). These three health conditions are intricately tied with COVID-19: diabetes is a risk factor for severe illness; mental health can be expected to be challenged during this time of quarantine and economic stress; and access to nutrition and physical activity are difficult during lockdown. However, Detroit's high case prevalence and mortality rates indicate that other factors are at play than merely high-risk individuals with comorbidities.

3.2.2. HOUSING & HEALTH PATHWAYS & DETROIT'S COVID-19 RISK

Using the housing and health pathways as a framework of analysis, Detroit has numerous attributes that may explain its higher susceptibility to COVID-19.

Relating to the housing stability pathway, Detroit has a visible challenge of homelessness. In January 2019 at least 1,965 individuals were experiencing homelessness in Detroit, of which 280 were chronically homeless, an 11% increase from 2018 (Homeless Action Network of Detroit, 2019). As demonstrated above, individuals experiencing homelessness may be at increased risk of COVID-19. Indeed, by 28 May 2020, 93 homeless individuals had tested positive at Detroit's homeless quarantine facilities and at least 3 had died (Moran, 2020).

Beyond homelessness, housing instability is quite prevalent in Detroit. Data from 2017 indicates 13% of Detroit residents (88,382) reported being evicted or losing their home in the previous year (Erb-Downward and Merchant, 2020). Further, there are insufficient numbers of housing units for low-income Detroiters: Detroit "has an estimated 24,000 fewer units of habitable housing than the city's population. This leaves 9% of all households in Detroit with no other options than to leave the city, live in blighted housing, or doubled up with other families" (Erb-Downward and Merchant, 2020). Such instability and overcrowding can place individuals at heightened risk of COVID-19 and other health challenges.

Housing quality is also particularly poignant in Detroit, where 80% of housing units were built before 1960 (Dewar et al., 2020). In 2014, the city had 40,000 blighted houses with an additional 38,000 on the verge of blight (Trickey, 2017). Many units require significant repairs and rehabilitation to maintain a healthy and habitable environment. Thus, as Detroiters spend more time at home during the pandemic, they are increasingly exposed to household hazards, including lead, asbestos, mold, and more.

Water is another challenge in Detroit: the City has implemented massive water shut-offs to over 20,000 homes since 2014 (Neavling, 2020b). However, as mentioned above, access to water for handwashing is a critical tool for prevention of COVID-19, placing households without water at heightened risk. Further, only 59.3% of Detroit's households have broadband internet (United States Census Bureau, 2018) – inability to work from home and lack of access to important health information may be a contributing factor for higher prevalence of COVID-19.

Poverty is a key feature in Detroit, and thus, it can be expected that the housing affordability pathway plays a significant role for risk of COVID-19. Nearly 70% of Detroit renters pay over the federally recommended 30% of their income toward housing (Poethig et al., 2017). This reflects a significant cost burden and limits financial resources available for health-promoting goods and services. COVID-19 and Michigan's Stay-at-Home order exacerbated Detroit's unemployment rate – 39.2% in May 2020, compared to 9.8% prior to the pandemic, with low-income service industry jobs particularly hit hard (Aguilar, 2020) – further reducing funding available for housing and health for Detroiters.

Many neighborhood factors also make Detroit more vulnerable to COVID-19. Detroit is famously known as the Motor City, and its limited public transportation infrastructure may be a significant complicating factor for COVID-19. In a city with the nation's highest car insurance rates and low personal automobile ownership (Neavling, 2020a), 85,000 people rely on Detroit's Department of Transportation bus routes each day (Ferretti, 2020a) – increasing their risk of exposure to COVID-19 while in transit as well as that of the drivers. Further, in the initial months of the pandemic, Detroit's public bus system partially shut down, and on some days a shortage of bus drivers cancelled service completely (Ferretti, 2020a). Shutdowns severely impact residents' ability to access employment, health, and other services, with potential to increase financial and health vulnerability. Detroit is also home to Michigan's most polluted zip code, 48217, and has been associated with very high rates of asthma, chronic lung disease, cancer, and other health challenges (Neavling, 2020c) – these comorbidities place residents at higher risk for severe illness from COVID-19.

The typology of housing is also important to consider. For example, nursing homes in Detroit were particularly impacted by COVID-19, with a 44% attack rate from

March 7 through May 8, among which 24% of COVID-19 positive nursing home residents died (Sanchez et al., 2020). Suspected causes of ongoing transmission "included incomplete resident and health care personnel cohorting, continued reintroduction of the virus (e.g., from admission of residents with unknown COVID-19 status or residents requiring routine outpatient medical treatment, such as hemodialysis), and space limitations prohibiting use of private rooms to isolate residents whose infection status was unknown" (Sanchez et al., 2020: 3), demonstrating a clear link between housing and health.

Clearly, health and housing are interlinked in Detroit and the various attributes and pathways demonstrate plausible mechanisms explaining Detroit's higher susceptibility to COVID-19.

3.2.3. GOVERNMENT RESPONSE

Overall, the City of Detroit has shown impressive leadership in recognizing many of the above intersections between health and housing in its response to COVID-19. Mayor Mike Duggan has been an instrumental champion of COVID-19 response in Detroit; it is likely that his health background as president and CEO of the Detroit Medical Center facilitated his understanding of the importance of rapid response.

In March 2020, the Detroit Health Department quickly mobilized COVID-19 response. With testing being an important tool to identify and treat COVID-19, the City has provided free drive-through COVID-19 testing since 29 March 2020. Recognizing the transportation barriers in Detroit, the City also offered transportation to the testing site; 1,707 people have used this service (City of Detroit, 2020).

Further, the City immediately targeted vulnerable populations. For example, the City quickly opened new shelters for homeless individuals which provided 500 additional beds and allowed for social distancing, including a Salvation Army shelter to quarantine symptomatic patients (Wayne State University, 2020). Additionally, in collaboration with a local health system, the Detroit Health Department mobilized a team of volunteers to conduct mobile COVID-19 testing and outreach among Detroit's homeless shelters, nursing homes, and seniors living in Section 8 affordable housing units (Henry Ford Health System, 2020). The targeting of these specific groups demonstrates the city's recognition of congregate housing as a determinant of COVID-19. Further, Detroit was the first US city to receive Abbott machines that provide 15-minute rapid testing for COVID-19, facilitating quick testing of these vulnerable populations as well as first responders including city police and fire departments.

Efforts have since become longer-term as nurses continue to conduct screening three times a week at each of Detroit's 24 homeless shelters (City of Detroit, 2020), and the City has just finished conducting re-testing of all 26 Detroit nursing homes in November as COVID-19 cases begin to surge again.

The water shut offs remain a contentious issue in Detroit. Fortunately, the city began restoring water access for free at the onset of the pandemic; however, this process was delayed for thousands of homes which prevented proper hygiene practices (Neavling, 2020b).

At a policy level, Detroit instituted an eviction moratorium and increased the Homeowner's Property Tax Assistance Program (Wayne State University, 2020). Detroit received at least $31 million in COVID-19 response funding through the federal CARES Act, for which rental assistance, eviction defense, housing counseling, homeless outreach, and permanent supportive housing were prioritized (Frank, 2020, Ferretti, 2020b). As of 29 November 2020, $15,702,853 in COVID-19 funding has been approved for "housing/homelessness/non-congregate shelters services" (City of Detroit, 2020), demonstrating that Detroit recognizes the strong importance of housing during this global health pandemic.

3.3. DURBAN, SOUTH AFRICA

3.3.1. COVID-19 IN DURBAN

On 5 March 2020, South Africa reported its first confirmed case of COVID-19 in Durban, transmitted via an individual who recently travelled from a high-risk European country. By 15 March 2020, 17 cases were confirmed among recent travelers including one via community transmission, and thus President Ramaphosa declared a national state of disaster, closing schools and restricting travel. On 27 March, a national lockdown was implemented – this was one of the earliest and strictest lockdowns globally, including a ban on alcohol sales.

St. Augustine Hospital in Durban became an early site of rapid transmission of COVID-19 and published a report on its experience. One single case of COVID-19 in a patient who had recently returned from Europe and was admitted to the hospital on 9 March seeded an outbreak resulting in a total of 119 confirmed cases of COVID-19 by 30 April, including 80 staff members and 39 patients – making up 14% of all confirmed cases in KwaZulu-Natal Province at the time (Lessels et al., 2020). Frequent movement of patients and staff between wards facilitated the rapid transmission, and also contributed to additional outbreaks at a local nursing home and outpatient dialysis unit (Lessels et al., 2020). Among the 39 COVID-19 positive patients at St. Augustine's Hospital, 15 died, each having significant comorbidities (Lessels et al., 2020).

The existing health burden in Durban raises alarm for high risk of severe cases of COVID-19. eThekwini suffers one of the highest rates of HIV prevalence in South Africa at 22.3% of adults (McIntyre, 2018). Tuberculosis is also a risk factor for COVID-19; KwaZulu-Natal Province in which Durban is located has among the highest incidence rates for tuberculosis in South Africa at 685 people per 100,000 in 2015 (Kanabus, 2020).

In eThekwini District, as of 26 November 2020, there have been 59,848 confirmed cases and 1,621 deaths (KwaZulu-Natal Province, 2020). These numbers

are likely higher in actuality due to underreporting and undertesting.

3.3.2. HOUSING & HEALTH PATHWAYS & DURBAN'S COVID-19 RISK

Similar to Detroit, Durban has numerous attributes that may explain its higher susceptibility to COVID-19, and use of the housing and health pathways as an analysis framework helps to better understand these intersections.

Relating to the housing stability pathway, Durban faces challenges with homelessness and housing insecurity. In 2016, over 3,933 individuals experienced homelessness in the city; among these, 1,974 lived on the street and 1,954 lived in shelters, with a majority identifying as Black (87% street-dwelling and 62% shelter-dwelling) (Desmond et al., 2016). At the time of the 2016 survey, nearly half were unemployed and many who did have a source of income was from informal economic activities (Desmond et al., 2016), indicating that this population may be severely high at risk during an economic lockdown due to COVID-19 (Desmond et al., 2016). Durban's homeless also face many health challenges – many lack basic necessities including clean water, bathing facilities, hygiene products, and food; one-third of unsheltered and one-fourth of sheltered individuals experience severe distress or anxiety; and females reported higher rates of seeking healthcare for chronic conditions (27%) and communicable diseases (22%) (Desmond et al., 2016).

Perhaps Durban's largest phenomenon linking health and housing is its high prevalence of informal settlements. In eThekwini Municipality, approximately a quarter of the 3.8 million population reside in informal settlements (eThekwini Municipality, 2017). By nature of their informality, dwellers lack secure tenure and suffer threat of eviction, leading to housing instability. Numerous reported incidents of eviction in Durban over the years show such threat to be a constant anxiety for such dwellers (Pithouse, 2008), demonstrating a link between housing and mental health.

Housing quality is also a huge concern in Durban. Overcrowded housing, especially in informal settlements, hostels, homeless shelters, and inner-city housing, poses an acute risk for COVID-19 transmission due to the inability to social distance and self-isolate. Further, 24% of eThekwini households lack access to potable water, sanitation, and electricity (Department of Health: KwaZulu-Natal, 2018). Lacking these resources prevents basic hygiene practices to quell the spread of COVID-19, inhibits economic activities that are dependent on electricity, as well as makes living conditions difficult during the lengthy national lockdown.

Poverty is a significant reality in Durban, making the affordability pathway between health and housing very clear. Prior to the pandemic, Durban's official unemployment rate was a high 22.3% (eThekwini Muncipality, 2018). Given that the country lost 3 million jobs in the first month of lockdown (Haffajee, 2020), it is expected that this number has risen substantially. Specific sectors are particularly hurt by the pandemic: tourism contributed approximately $900 million (3.5% of city GDP) and employed 60,300 people in 2017 (Turner, 2018), and further, Durban is home to South Africa's largest sea port which brings substantial revenue to the city. However, with the borders closed during lockdown, both the tourism and import/export industries are suffering. Further, a large proportion of eThekwini's residents are engaged in informal economic activities – primarily domestic household work and trade; for example, there are an estimated 50,000 street vendors in Durban (Alfers et al., 2016). The strict lockdown has limited these individuals' ability to conduct their livelihoods, increasing financial burden and poverty, which subsequently reduces resident's ability to pay for basic necessities, including healthcare and housing costs.

Finally, a variety of neighborhood-level factors also enhance Durban's susceptibility to COVID-19. The segregated spatial design of apartheid places disadvantaged residents at the outskirts of the city, significantly restricting their access to healthcare, employment, and other services (Parnell and Pieterse, 2014). Households that do not own a personal vehicle but are able to afford public transport systems place themselves at risk of COVID-19 by entering crowded vehicles and spaces.

3.3.3. GOVERNMENT RESPONSE

To ease social and housing challenges during lockdown, at the national level, South Africa implemented a variety of regulations under its Disaster Management Act, which served as guidelines for local authorities in Durban to respond. First, Regulation 11 CA stated that "no person may be evicted from their place of residence, regardless of whether it is a formal or informal residence or a farm dwelling, for the duration of the lockdown" (Republic of South Africa, 2020). When Lockdown Alert Level 5 ended on 30 April 2020, subsequent regulations during Lockdown Alert Levels 4 and 3 (Regulation 19 and 36 (1) and (2)) suspended eviction orders through 17 August 2020, and afterwards during Lockdown Level 2, Subregulation 53 (1) further specified a clause to prevent the destruction of residences. However, local government enforcement of these national mandates has been mixed – during the first two months of lockdown, there were reports of 18 illegal evictions and violent destruction of domiciles in eThekwini settlements affecting 900 people, allegedly instructed by eThekwini Municipality (Draper, 2020).

eThekwini Municipality embarked on efforts to improve housing quality and lives of vulnerable populations during COVID-19. For example, the city provided water tanks to informal settlements, and conducted a sanitization campaign in informal settlements, hostels, informal traders' stalls, and public transportation facilities (Buthelezi, 2020). The city also focused on homeless individuals, providing temporary shelters, access to healthcare, and other supportive services – spending R66 million on homeless initiatives in the first three months of the lockdown (Majola, 2020). Further, the city reconnected 3,644 households that were in arrears during lockdown (Maziwisa, 2020).

However, the municipality has not been free of criticism for its COVID-19 response, including delayed implementation of efforts, claims of

corruption, and inequitable distribution (i.e. providing each ward with 1,000 food parcels, regardless of their population size) (Maziwisa, 2020). Further, eThekwini Metro did actively set up numerous administrative units to coordinate response, including the COVID-19 Municipal Command Team, the COVID-19 Joint Operation Centre, and the COVID-19 War Room; however, "the multiplicity of structures in COVID-19 response may result in unnecessary overlap and duplication of efforts at a time when resources are scarce" (Maziwisa, 2020).

While the municipality had been allocated nearly R600 million for COVID-19 response as of August, the pandemic has exacerbated the already stretched municipal budget (Naidoo, 2020). For example, in April and May alone, eThekwini lost R1.5 billion in revenue (Hanuman-Pillay, 2020). Financial constraints will continue to hamper full implementation of government response to COVID-19 in Durban.

4. CONCLUSION

While the evidence is preliminary, housing and health are shown to distinctly intersect on a variety of levels during COVID-19 via the various mechanisms found in the housing stability, housing quality, housing affordability, and neighborhood pathways. Housing and human settlements are significant determinants of health, and certain housing features place those who are already socially and economically excluded at further risk of COVID-19 disease. As more evidence becomes available on the impacts of the pandemic, we encourage other researchers to submit the housing and health linkages discussed in this paper to more rigorous qualitative and quantitative analysis.

Editors of a prominent housing journal recently commented: "Whether COVID-19 is creating new housing challenges or simply revealing or exacerbating the deep structural flaws in our existing housing systems is an open question" (Rogers and Power, 2020: 180). The evidence from this paper suggests that COVID-19 has brought unique housing challenges via the scenario of lockdowns as well as the concern for household transmission of disease. However, the deeper exploration of the housing and health pathways supported by the existing evidence from Detroit and Durban reveal that inequity and injustice are at the root of social vulnerabilities that enhance susceptibility to COVID-19. Initial government response in both Detroit and Durban demonstrates understanding of some of the intersections between health and housing, and begins to recognize and respond to vulnerable populations, though much work remains to be done to improve equitable outcomes.

The pandemic clearly reveals the need for cities to intentionally focus on inclusivity. Governments have often been intentional and unintentional vehicles for inequitable policies and practices; the pandemic has made these disparities more visible and thus presents an opportunity for governments to respond more equitably. In the short-term, cities must continue to prioritize vulnerable populations during COVID-19. Community-based participatory approaches are best practice to understand locally-identified needs and solutions. Given the findings between housing and health, interdisciplinary approaches must be prioritized to achieve better results. Moving forward, urban planners and policymakers must acknowledge inequitable historical processes of urban exclusion and prioritize racially equitable urban planning so as to dismantle these unjust legacies (Solis, 2020, Goetz et al., 2020). Current international attention on inclusive cities demonstrates the importance of equity; this approach must be reflected in housing policy and practice to ensure access to housing that safeguards the health of the vulnerable. In the longer-term, cities must focus on poverty elimination, inclusive economic growth, and community-based approaches in order to equitably rebuild after COVID-19, reduce susceptibility to future pandemics, and improve the health and lives of all residents.

REFERENCES

ADEBAYO, P. 2011. Post-apartheid Housing Policy and a Somewhat Altered State Role: Does Incremental Housing Still Have a Place in South Africa? *The Built and Human Environment Review,* 4.

AGUILAR, L. 2020. Detroit unemployment rate 'alarmingly' high amid coronavirus. *Bridge Michigan*, 13 July. Available: https://www.bridgemi.com/urban-affairs/detroit-unemployment-rate-alarmingly-high-amid-coronavirus#:~:text=The%20city's%20jobless%20rate%20rose,unemployment%20rate%20was%209.8%20percent.&text=U%2DM%20has%20performed%20three%20Detroit,March%2C%20when%20the%20pandemic%20began. [Accessed 29 November 2020].

ALFERS, L., XULU, P., DOBSON, R. & HARIPARSAD, S. 2016. Extending occupational health and safety to urban street vendors: reflections from a project in Durban, South Africa. *NEW SOLUTIONS: A Journal of Environmental and Occupational Health Policy,* 26**,** 271-288.

AMERIO, A., BRAMBILLA, A., MORGANTI, A., AGUGLIA, A., BIANCHI, D., SANTI, F., COSTANTINI, L., ODONE, A., COSTANZA, A. & SIGNORELLI, C. 2020. COVID-19 Lockdown: Housing Built Environment's Effects on Mental Health. *International Journal of Environmental Research and Public Health,* 17**,** 5973.

ARCHAMBAULT, D., SANFORD, C. & PERRY, T. 2020. Detroit's efforts to meet the needs of seniors: Macro responses to a crisis. *Journal of Gerontological Social Work***,** 1-3.

ASSOCIATED PRESS. 2020. Coronavirus: Higher COVID risk for black patients than white says South Africa report. *Al Arabiya*, 15 August. Available: https://english.alarabiya.net/en/coronavirus/2020/08/15/Coronavirus-Higher-COVID-risk-for-black-patients-than-white-says-South-Africa-report [Accessed 29 November 2020].

BUTHELEZI, S. 2020. *City takes drastic measures to curb spread of coronavirus* [Online]. eThekwini Municipality. Available: http://www.durban.gov.za/Resource_Centre/new2/Pages/City-takes-drastic-measures-to-curb-spread-of-coronavirus.aspx [Accessed 29 November 2020].

CENTER ON BUDGET AND POLICY PRIORITIES. 2020. *Tracking the COVID-19 Recession's Effects on Food, Housing, and Employment Hardships*. Available: https://www.cbpp.org/sites/default/files/atoms/files/8-13-20pov.pdf [Accessed 29 November 2020].

CENTRE FOR AFFORDABLE HOUSING FINANCE IN AFRICA. 2020. *Housing Finance in Africa Yearbook*. Available: http://housingfinanceafrica.org/resources/yearbook/ [Accessed 6 March 2021].

CITY OF DETROIT. 2020. *COVID-19 Data Dashboard* [Online]. Available: https://detroitmi.gov/departments/detroit-health-department/programs-and-services/communicable-disease/coronavirus-covid-19/covid-19-data-dashboard [Accessed 29 November 2020].

CUCINOTTA, D. & VANELLI, M. 2020. WHO Declares COVID-19 a Pandemic. *Acta Biomed,* 91**,** 157-160.

D'ALESSANDRO, D., GOLA, M., APPOLLONI, L., DETTORI, M., MARIA, G., FARA, A. R., SETTIMO, G. & CAPOLONGO, S. 2020. COVID-19 and living space challenge. Well-being and public health recommendations for a healthy, safe, and sustainable housing. *Acta Biomed,* 91**,** 61-75.

DE OLIVEIRA, L. A. & DE AGUIAR ARANTES, R. 2020. Neighborhood Effects and Urban Inequalities: The Impact of Covid-19 on the Periphery of Salvador, Brazil. *City & Society (Washington, DC),* 32.

DEPARTMENT OF HEALTH: KWAZULU-NATAL. 2018. *District Health Plan 2018/19-2020/21*. Available: http://www.health.gov.za/DHP/docs/DHP2018-21/kwazulu_Natal/eThekwini_DHP_2018.19.pdf [Accessed 29 November 2020].

DESMOND, C., KHALEMA, E., TIMOL, F., GROENEWALD, C. & SAUSI, K. 2016. *Ikhaya Lami: Understanding Homelessness in Durban*. Available: http://www.hsrc.ac.za/en/research-outputs/ktree-doc/17258 [Accessed 29 November 2020].

DETROIT HEALTH DEPARTMENT. 2020. *COVID-19 Dashboard* [Online]. Available: https://codtableau.detroitmi.gov/t/DHD/views/CityofDetroit-PublicCOVIDDashboard/TimelineCasesDashboard?%3AisGuestRedirectFromVizportal=y&%3Aembed=y [Accessed 29 November 2020].

DEWAR, M., DENG, L. & BLOEM, M. 2020. Challenges for Low-Income Housing Tax Credit Projects at Year 15 and Beyond in a Weak Housing Market: The Case of Detroit, Michigan. *Housing Policy Debate,* 30**,** 311-334.

DRAPER, A. 2020. *Stop Illegal Evictions! A research report into the eviction of shack-dwellers in eThekwini during the Covid-19 crisis*. Available: http://www.churchland.org.za/wp-content/uploads/2020/06/STOP-Illegal-evictions.pdf [Accessed 29 November 2020].

ERB-DOWNWARD, J. & MERCHANT, S. 2020. *Losing Home: Housing Instability & Availability in Detroit*. Available: https://poverty.umich.edu/files/2020/05/200358_Poverty-Solutions_Detroit-Housing-Instability-policy-brief_051120.pdf [Accessed 29 November 2020].

ETHEKWINI MUNCIPALITY. 2018. Exporting into Africa. *The Durban Edge*, Issue. Available: http://www.durban.gov.za/Resource_Centre/edge/Documents/EDGE22July2018.pdf [Accessed 29 November 2020].

ETHEKWINI MUNICIPALITY. 2017. *Integrated development plan: 2017/2018 plan*. Available: http://www.durban.gov.za/City_Government/City_Vision/IDP/Documents/IDP%202017%202018.PDF [Accessed 29 November 2020].

FERRETTI, C. 2020a. Detroit bus service remains halted indefinitely amid worries over COVID-19, violence. *The Detroit News*, 2 October. Available: https://www.detroitnews.com/story/news/local/detroit-city/2020/10/02/detroit-bus-service-halted-amid-labor-dispute/5892649002/ [Accessed 25 November 2020].

FERRETTI, C. 2020b. Detroit council signs off on $31M spending plan for federal COVID aid. *The Detroit News*, 9 June. Available: https://www.detroitnews.com/story/news/local/detroit-city/2020/06/09/detroit-council-signs-off-31-m-spending-plan-federal-covid-aid/5326583002/ [Accessed 25 November 2020].

FRANK, A. 2020. Detroit lays out plan for $31 million in COVID-19 response funding. *Crains Detroit*, 9 June. Available: https://www.crainsdetroit.com/coronavirus/detroit-lays-out-plan-31-million-covid-19-response-funding-housing-stability [Accessed 25 November 2020].

GARBER, M. 2020. Homes Actually Need to be Practical Now. *The Atlantic*, 29 March. Available: https://www.theatlantic.com/culture/archive/2020/03/finding-privacy-during-pandemic/608944/ [Accessed 29 November 2020].

GIBSON, L. & RUSH, D. 2020. Novel coronavirus in Cape Town informal settlements: feasibility of using informal dwelling outlines to identify high risk areas for COVID-19 transmission from a social distancing perspective. *JMIR Public Health and Surveillance,* 6**,** e18844.

GIBSON, M., PETTICREW, M., BAMBRA, C., SOWDEN, A. J., WRIGHT, K. E. & WHITEHEAD, M. 2011. Housing and health inequalities: a synthesis of systematic reviews of interventions aimed at different pathways linking housing and health. *Health & place,* 17**,** 175-184.

GOETZ, E. G., WILLIAMS, R. A. & DAMIANO, A. 2020. Whiteness and urban planning. *Journal of the American Planning Association,* 86**,** 142-156.

GOODMAN, L. & MAGDER, D. 2020. Avoiding a COVID-19 Disaster for Renters and the Housing Market. *Washington, DC: Urban Institute*.

GRAHAM, C. 2020. COVID-19 Worsens Housing Insecurity for College Students. *Best Colleges*, Issue 30 September. Available: https://www.bestcolleges.com/blog/covid-19-housing-insecurity-college-students/ [Accessed 29 November 2020].

GREEN AND HEALTHY HOMES INITIATIVE. n.d. *Home Hazard Facts* [Online]. Available: http://www.detroitgreenandhealthyhomes.org/hazard-facts [Accessed 26 November 2020].

HAFFAJEE, F. 2020. The day the bottom fell out of South Africa - a triple pandemic has hit us. *Daily Maverick*, 15 July. Available: https://www.dailymaverick.co.za/article/2020-07-15-the-day-the-bottom-fell-out-of-south-africa-a-triple-pandemic-has-hit-us/ [Accessed 25 November 2020].

HANUMAN-PILLAY, R. 2020. *City will not disconnect services based on estimate bill* [Online]. eThekwini Municipality. Available: http://www.durban.gov.za/Resource_Centre/new2/Pages/City-will-not-disconnect-services-based-on-estimate-bill.aspx [Accessed 29 November 2020].

HATEF, E., CHANG, H.-Y., KITCHEN, C., WEINER, J. P. & KHARRAZI, H. 2020. Assessing the impact of neighborhood socioeconomic characteristics on COVID-19 prevalence across seven states in the United States. *Frontiers in public health,* 8.

HENRY FORD HEALTH SYSTEM. 2019. *Community Health Needs Assessment 2019*. Available: https://www.henryford.com/-/media/files/henry-ford/about/community/chna-2019-final-henryfordcom.pdf?la=en&hash=970B01A7591C24F654C36D4AC8653D21 [Accessed 1 November 2020].

HENRY FORD HEALTH SYSTEM. 2020. *Collaborative Partnership, $400,000 Donation to Bring Onsite COVID-19 Testing to Senior Facilities and Other Vulnerable Populations* [Online]. Available: https://www.henryford.com/news/2020/04/onsite-covid-testing-senior-facilities [Accessed 29 November 2020].

HERNANDEZ, D. & SUGLIA, S. 2016. Housing as a Social Determinant of Health. *Leveraging the Social Determinants to Build a Culture of Health.* Philadelphia, PA: Robert Wood Johnson Foundation. Available: https://healthequity.globalpolicysolutions.org/wp-content/uploads/2016/12/Housing2.pdf [Accessed 8 November 2020].

HOMELESS ACTION NETWORK OF DETROIT. 2019. *2019 Detroit CoC Point-in-Time Count Summary Data Report*. Available: https://static1.squarespace.com/static/5344557fe4b0323896c3c519/t/5cd050f6ee6eb00c57fd08d1/1557156087075/SUMMARY+2019+PIT+report.pdf [Accessed 26 July 2020].

JIN, R. L., SHAH, C. P. & SVOBODA, T. J. 1995. The impact of unemployment on health: a review of the evidence. *CMAJ: Canadian Medical Association Journal,* 153**,** 529.

JOHNS HOPKINS UNIVERSITY & MEDICINE CORONAVIRUS RESOURCE CENTER. 2020. *COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University* [Online]. Available: https://coronavirus.jhu.edu/map.html [Accessed 5 March 2021].

JOINT CENTER FOR HOUSING STUDIES OF HARVARD UNIVERSITY. 2019. *The State of the Nation's Housing 2019*. Available: https://www.jchs.harvard.edu/sites/default/files/reports/files/Harvard_JCHS_State_of_the_Nations_Housing_2019%20%281%29.pdf [Accessed 26 November 2020].

KANABUS, A. 2020. *TB Statistics South Africa - National, incidence, provincial* [Online]. Available: https://tbfacts.org/tb-statistics-south-africa/ [Accessed 25 November 2020].

KARAYE, I. M. & HORNEY, J. A. 2020. The impact of social vulnerability on COVID-19 in the US: an analysis of spatially varying relationships. *American Journal of Preventive Medicine,* 59**,** 317-325.

KWAZULU-NATAL PROVINCE. 2020. *COVID-19* [Online]. Available: http://www.kznhealth.gov.za/coronavirus.htm [Accessed 29 November 2020].

LESSELS, R., MOOSA, Y. & DE OLIVEIRA, T. 2020. *Report into a nosocomial outbreak of coronavirus disease 2019 (COVID-19) at Netcare St. Augustine's Hospital*. [Accessed].

LI, W., ZHANG, B., LU, J., LIU, S., CHANG, Z., CAO, P., LIU, X., ZHANG, P., LING, Y. & TAO, K. 2020. The characteristics of household transmission of COVID-19. *Clinical Infectious Diseases*.

MAJOLA, N. 2020. "Not everything that came out of this Covid-19 situation was bad". *GroundUp*, 12 October. Available: https://www.groundup.org.za/article/homeless-reunited-their-families-after-lockdown/ [Accessed 29 November 2020].

MANESS, D. L. & KHAN, M. 2014. Care of the homeless: an overview. *American Family Physician,* 89**,** 634-640.

MAQBOOL, N., VIVEIROS, J. & AULT, M. 2015. *The impacts of affordable housing on health: A research summary*, Center for Housing Policy.

MARX, C. & CHARLTON, S. 2003. Urban Slums Report: The Case of Durban, South Africa. *UN HABITAT, Understanding Slums: Case Studies for the Global Report on Human Settlements*.

MAZIWISA, M. R. 2020. eThekwini Metropolitan Municipality vs COVID-19: 90 days into the Lockdown. *Local Government Bulletin, Dullah Omar Institute, University of the Western Cape,* 15.

MCINTYRE, J. 2018. *The HIV Epidemic in MSM in South Africa*. Available: https://mtnstopshiv.org/sites/default/files/mcintyre_msm_in_south_africa_mtn_cape_town_2018_final.pdf [Accessed 20 February 2019].

MERICLE, A. A., SHERIDAN, D., HOWELL, J., BRAUCHT, G. S., KARRIKER-JAFFE, K. & POLCIN, D. L. 2020. Sheltering in place and social distancing when the services provided are housing and social support: The COVID-19 health crisis and recovery housing. *Journal of substance abuse treatment***,** 108094.

MORAN, D. 2020. 'I just want to get back healthy': Inside Detroit's homeless coronavirus isolation centers. *Detroit Free Press*, 6 June. Available: https://www.freep.com/in-depth/news/local/michigan/wayne/2020/06/06/salvation-army-site-detroits-homeless-coronavirus-isolation-center/5198078002/ [Accessed 26 November 2020].

NAIDOO, J. 2020. eThekwini mayor calls for expedited audit of Covid-19 funds. *IOL*, 28 August. Available: https://www.iol.co.za/news/ethekwini-mayor-calls-for-expedited-audit-of-covid-19-funds-3fafb217-908e-4fa0-ab30-ab402f41e90a [Accessed 26 November 2020].

NEAVLING, S. 2020a. Detroit and Michigan lead the nation with the highest auto insurance. *Detroit Metro Times*, 15 January. Available: https://www.metrotimes.com/news-hits/archives/2020/01/15/detroit-and-michigan-lead-the-nation-with-the-highest-auto-insurance-rates [Accessed 25 November 2020].

NEAVLING, S. 2020b. More than 2,500 homes in Detroit still without water after city pledged to restore service amid coronavirus outbreak. *Detroit Metro Times*, 20 March. Available: https://www.metrotimes.com/news-hits/archives/2020/03/20/more-than-2500-homes-in-detroit-still-without-water-after-city-pledged-to-restore-service-amid-coronavirus-outbreak [Accessed 29 November 2020].

NEAVLING, S. 2020c. Struggling to breathe in 48217, Michigan's most toxic ZIP code. *Detroit Metro Times*, 8 January. Available: https://www.metrotimes.com/detroit/struggling-to-breathe-in-48217-michigans-most-toxic-zip-code/Content?oid=23542211 [Accessed 29 November 2020].

PARNELL, S. & PIETERSE, E. A. 2014. *Africa's urban revolution,* London, UK, Zed Books Ltd.

PATEL, J., NIELSEN, F., BADIANI, A., ASSI, S., UNADKAT, V., PATEL, B., RAVINDRANE, R. & WARDLE, H. 2020. Poverty, inequality and COVID-19: the forgotten vulnerable. *Public Health,* 183**,** 110.

PITHOUSE, R. 2008. Business as Usual? Housing rights and 'slum eradication'in Durban, South Africa. *Centre on Housing Rights & Evictions (COHRE)*.

POETHIG, E. C., GASTNER, J., SCHILLING, J., PENDALL, R., GOODMAN, L., FAZILI, S. & BAI, B. 2017. *The Detroit Housing Market: Challenges and Innovations for a Path Forward*. Available: https://www.urban.org/sites/default/files/publication/88656/detroit_path_forward_finalized.pdf [Accessed 22 June 2020].

REPUBLIC OF SOUTH AFRICA 2020. Disaster Management Act: Regulations relating to COVID-19. *Government Gazette no. 43107.* Available: https://openbylaws.org.za/za/act/gn/2020/318/eng/#sec_11CA [Accessed 29 November 2020].

ROBERT WOOD JOHNSON FOUNDATION. 2011. *Issue Brief #7: Housing and Health*. [Accessed].

ROGERS, D. & POWER, E. 2020. Housing policy and the COVID-19 pandemic: the importance of housing research during this health emergency. *International Journal of Housing Policy,* 20**,** 177-183.

SANCHEZ, G. V., BIEDRON, C., FINK, L. R., HATFIELD, K. M., POLISTICO, J. M. F., MEYER, M. P., NOE, R. S., COPEN, C. E., LYONS, A. K., GONZALEZ, G., KIAMA, K., LEBEDNICK, M., K, C. B., ABGBONEZ, A., SURMA, A. R., SANDHU, A., MIKA, V. H., PRENTISS, T., ZERVOS, J., DALAL, D. A., VASQUEZ, A. M., REDDY, S. C., JERNIGAN, J., KILGORE, P. E., ZERVOS, M. J., CHOPRA, T., VEZOLD, C. P. & REHMAN, N. K. 2020. Initial and repeated point prevalence surveys to inform SARS-CoV-2 infection prevention in 26 skilled nursing facilities—Detroit, Michigan, March–May 2020. *Centers for Disease Control and Prevention Morbidity and Mortality Weekly Report,* 69.

SIMMONS, B. 2019. A Tale of Two (Gentrified) Cities: Detroit and Brixton. *Agora Journal of Urban Planning and Design***,** 90-100.

SOLIS, M. 2020. Racial Equity in Planning Organizations. *Journal of the American Planning Association***,** 1-7. SOUTH AFRICAN CENSUS 2011.

TAYLOR, L. A. 2018. Housing and Health: An Overview of the Literature. *Health Affairs Health Policy Brief*.

THE COVID TRACKING PROJECT. 2020. *The COVID Tracking Project* [Online]. The Atlantic. Available: https://covidtracking.com/ [Accessed 29 November 2020].

THE WORLD BANK. 2021. *GDP per capita (current US$) - South Africa, United States* [Online]. Available: https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=ZA-US [Accessed 6 March 2021].

TRICKEY, E. 2017. Detroit's DIY Cure for Urban Blight. *Politico*, 18 May. Available: https://www.politico.com/magazine/story/2017/05/18/how-detroit-is-beating-its-blight-215160 [Accessed 26 November 2020].

TSAI, J. & WILSON, M. 2020. COVID-19: a potential public health problem for homeless populations. *The Lancet Public Health,* 5**,** e186-e187.

TURNER, R. 2018. *City Travel & Tourism Impact 2018*. Available: https://www.wttc.org/-/media/files/reports/economic-impact-research/cities-2018/city-travel--tourism-impact-2018final.pdf [Accessed 6 March 2019].

UNITED NATIONS GLOBAL SDG DATABASE 2019. SDG Indicators. Available: https://unstats.un.org/sdgs/indicators/database/ [Accessed 4 February 2019].

UNITED NATIONS HUMAN SETTLEMENT PROGRAM. 2016. *World Cities Report 2016*. Nairobi, Kenya. Available: http://wcr.unhabitat.org/main-report/ [Accessed 23 January 2019].

UNITED STATES CENSUS BUREAU. 2017. *Tenure by Occupants Per Room* [Online]. Available: https://data.census.gov/cedsci/table?q=occupants%20per%20room&t=Occupants%20Per%20Room&tid=ACSDT1Y2017.B25014&hidePreview=false [Accessed 29 November 2020].

UNITED STATES CENSUS BUREAU. 2018. *Quick Facts: Detroit city, Michigan; Michigan* [Online]. Available: https://www.census.gov/quickfacts/fact/table/detroitcitymichigan,MI/PST045218 [Accessed 3 April 2020].

WAYLAND, M., REPKO, M. & FEUER, W. 2020. As the coronavirus takes hold in Detroit, pandemic magnifies city's poverty, racial disparities. *CNBC*, 10 April. Available: https://www.cnbc.com/2020/04/10/coronavirus-magnifies-detroits-racial-socioeconomic-disparities.html [Accessed 29 November 2020].

WAYNE STATE UNIVERSITY. 2020. *Wayne State partners with City of Detroit to launch COVID-19 testing for homeless at shelters* [Online]. Available: https://today.wayne.edu/medicine/news/2020/03/30/wayne-state-partners-with-city-of-detroit-to-launch-covid-19-testing-for-homeless-at-shelters-36738 [Accessed 26 July 2020].

WORLD BANK. 2020. *Global Economic Prospects, June 2020*. Available: https://www.worldbank.org/en/publication/global-economic-prospects [Accessed 8 November 2020].

WORLD HEALTH ORGANIZATION. 2019. *1 in 3 people globally do not have access to safe drinking water - UNICEF, WHO* [Online]. Available: https://www.who.int/news/item/18-06-2019-1-in-3-people-globally-do-not-have-access-to-safe-drinking-water-unicef-who [Accessed 9 November 2020].

WORLD HEALTH ORGANIZATION. n.d. *Social Determinants of Health* [Online]. Available: https://www.who.int/gender-equity-rights/understanding/sdh-definition/en/ [Accessed 9 November 2020].

Notes

Published by the University of KwaZulu-Natal
https://journals.ukzn.ac.za/index.php/JICBE

Journal of Inclusive cities and Built environment. Vol. 1 No.1

How to cite: Alalade, G. and Chipungu, L. 2021. Challenges of Vulnerable Immigrants: A Focus on Refugees and Housing, Their Canadian Experience. *Journal of Inclusive cities and Built environment.* Vol. 1 No.1, Pg 17-24.

CHALLENGES OF VULNERABLE IMMIGRANTS: A FOCUS ON REFUGEES AND HOUSING, THEIR CANADIAN EXPERIENCE

By Gbemi Alalade And Lovemore Chipungu

Published March 2021

ABSTRACT

The refugee and immigrant problem in Canada are gradually descending into a crisis. Women and elderly people are among the categories of people who experience differentiated integration processes and some forms of discrimination in society. A percentage of immigrants live in poverty, insecurity, and social exclusion, for these individuals, may be in great distress, itinerant, or living in precarious housing conditions. This dire situation made this research imperative to better understand the challenges and measures needed to address the housing challenges of these vulnerable groups. This paper examines the immigrant and refugees housing challenges in Canada. Immigrants and refugees find themselves under diminished capacity as an individual or group to anticipate, cope with, resist, and recover from the impact of the natural or man-made hazard. Qualitative research method was adopted, and data were generated by both primary and secondary sources. Focus groups and policymakers were also interviewed to come up with a logical conclusion on the topic of discussion. The study concludes that there are tripartite causes of housing challenges for refugees and migrants cannot be overemphasized, and it is interconnected to economic, political, and cultural systems. Also, that at best, what has been obtainable is ethnic-specific efforts targeted at some certain migrant groups, which further creates ethical dilemmas as different groups of refugees and different groups of immigrants receive different levels of assistance which is not sustainable, and also antithetical to recommendations from international organizations whose mandate is to ensure quality and adequate housing as a pressing human right issue. The study concluded that creating economic opportunities for migrants and refugees, making information, quality housing, more available and accessible. Also, when housing providers bring cultural agencies into social housing, it would go a long way in mitigating the challenges housing by immigrants and refugees in Canada.

KEY WORDS Immigrants; refugees; housing challenges

1. INTRODUCTION

The United Nations High Commission of Refugees' convention of 1951 has affirmed by 145 countries, addressed the core principle as non-refoulment, that a refugee should not be returned to a country where they face serious threats to their life or freedom. This declaration is now considered a rule of customary international law. The Canadian government's interpretation of the UNHR convention has further made refugees and immigrants coming into Canada to claim asylums even more vulnerable to housing problems. Housing is recognized as a human right, the right to shelter, which is to have a place to lay one's head and secure one's possessions is deemed to be a right of every individual and this has made people coming into Canada to claim asylums more vulnerable to housing problems, than any other group in the country and made them suffer from their lack of inclusion in their host communities.

Refugee challenges and experiences are multifaceted and wide-ranging. The study of refugees has been extended in recent years, as intellectuals such as Aldiabat, K. et al. (2021), identify the distinctive challenges that refugees face in first-world nations which have been one the most desired destinations for refugees, which Canada is glaringly part of, Marks (2017). Hence, there have been discourses as to how the international community must overcome to provide services to this population. Attention to the problematic experience of these populations has also grown within the non-governmental and international organizational communities, Kofi and Cranfield (2009).

Moreover, the vulnerability of the Refugee has been seen as an inevitable syndrome even in the most developed of nations, as against different international conventions, and also different national constitutional rights. These susceptibilities as been argued not only to be down to insensitivities on the hands of the systems in which these refugees find themselves, whether (developed nation or developing nations). Sociologists like Simich & Beiser et al, (2005) believe that a new environment by default affects human ecology which more often than not puts the human into a state of weakness, which is controlled by their sense of adaptability (Terziev, 2019).

However, there several other challenges that are faced by everyday refugees which are beyond their socio-cultural adaptability, but also the socio-economic enablement available in the community they find themselves, Turner, Beegheley, and Powers (2002). A quintessential example of these challenges that are not only controlled by their sense of socio-cultural adaptability is the challenge of housing. This empirically has been identified as problematic in Canada who is one of the countries with the highest number of refugees in the continent of America.

Canada, just like Jordan, Lebanon, and Syria where there has been the continual arrival of refugees has caused significant increases in the price of food, fuel prices and placed new pressures on the housing market and public services, Crisp, Riera, and Shahira(2009). It is, however, important to note that various other vulnerabilities of these refugees drop more jarring effect on the doorstep of the housing challenge, Briant & Kennedy (2004). Hence, it is on the back of this that this study interrogates refugees' vulnerabilities and the pivotal position of housing in the experience of refugees in Canada.

2. STATEMENT OF THE PROBLEM

Roughly 220,000 persons have immigrated to Canada each year between first half of the first decade of millennium. New immigrants enter Canada under various immigration categories and are largely categorized by the government into Economic Class immigrants, Family Class immigrants, and Protected Persons or Refugees. Over the past years, newcomers to Canada have come from wide range source countries, are increasingly well-educated. For instance, a Longitudinal Survey of Immigrants to Canada (LSIC), shows that, 55% of immigrants surveyed had a university degree, and another 17% reported completion of some higher education (Statistics Canada 2013). Hence a good number of these immigrants have overwhelmingly settled in Canada's urban centers, such as Toronto, Vancouver or Montréal, Wayland 2007. However, the placement of extremely low-income and vulnerable populations of the society into very expensive cities and communities in the country should go with additional supports from the government.

It is a trite knowledge that immigration is vital to Canada's population growth. It is on record that international immigration is responsible for population growth between 2001 and 2006. According to Wayland, despite being more highly educated and skilled than previous immigrants, recent immigrants have not fared as well as their predecessors in terms of employment and earnings. They would probably depend on social service or live below the poverty line. Their settlement is undermined by a cluster of interrelated legal and policy obstacles that hinder their access to economic opportunities and vital services, Wayland 2007.

Also, the 2016 Census showed that one in four recent immigrants are in core housing need (Morneau, 2019). Inexperience with language and navigation of the housing system, Schwan, Versteegh, Perri, Caplan, Baig, Dej, Jenkinson, Brais, Eiboff, & Pahlevan Chaleshtari, (2020), asylum seekers and refugees are at a greater risk of experiencing homelessness and housing precarity due to factors such as limited economic resources, interpersonal and systemic discrimination of newcomers. Findings of the 2018 National Point-in-Time Count indicate that 14% of those experiencing homelessness in 2018 were newcomers to Canada (Employment and Social Development Canada (ESDC), 2019).

Similarly, there is no gainsaying the fact that continual refugee peopling just like various other forms of migration is usually marked with demographic challenges that affect planning, David, (2011). The resultant effect of this has led to the attainment of inordinate large population size in Canada, especially in urban areas, leading to virtual collapse in the urban services marked by basic problems in the field of housing

infrastructure, and other amenities that are attached to the housing, such as water, energy affordability concerns and so on.

Moreover, It is becoming a trite knowledge that housing challenges witnessed by refugees not only in Canada but in various other developed nations are not only caused by the inefficient housing policies or inadequate housing infrastructures but also considerably owing to the attitudinal dispositions of the local populations towards these refugees, Campbell (2006). The Canadian experience has shown that the local population often takes advantage of refugees' vulnerability by offering them exploitative conditions and housing rates especially in the informal sector, Walsh, 2015.

Conversely, having Identified the governmental challenges and the relation between the local population and these refugees, as regards the exigencies of housing experiences for immigrants especially the refugees in Canada, it salient to note that sometimes the strategies immigrants and refugees employ to gain access to housing in Canada has been observed to be counterproductive, Agrawal (2018). Therefore, it will appear that just as the vulnerabilities of refugees in Canada are complex, the causation for housing challenges for these groups is also multifaceted, which will be discussed in the later part of this attempt.

3. OBJECTIVE OF THE STUDY

1. To assess the governmental and administrative causes of housing challenges among refugees in Canada.
2. To interrogate the contributions of the local population to the housing challenges of refugees in Canada.
3. To examine the strategies immigrants and refugees employ to gain access to housing in Canada.

4. RESEARCH QUESTION

1. What are the contributions of the Canadian Government to housing Challenges for refugees in Canada?
2. What are the effects of the local population in the Problematic housing experience by refugees in Canada?
3. How have Canadian refugees contributed to the increasing challenge of housing for their community?

5. SIGNIFICANCE OF THE STUDY

The strong commitment showed by the Canadian Government to the UNHR convention acted partly as a pull factor for immigrants and refugees to seek asylum in Canada, UNHR Convention (1951). This has further put Canada in the condition of housing deficit and housing exclusivity over the years. Therefore, the significance of this study can be located in the importance attached to infrastructural efficiency as one of the indices for development. Also, as expressed by various international development organizations such as the United Nations, Homeless International, Housing and Land Right Network, Habitat International Coalition, to mention a few. Especially as it concerns housing, as a matter of human rights as enshrined in article 25 (1) of The Universal Declaration OF Rights, UNHABITAT, (2010).

In the same vein, giving the increasing globalization of the socio-economic system, the need to address policy inclusivity becomes more important especially in the area of housing which stands at the centerpiece of sustainable development. This is huge because housing development and inclusivity consume resources in its construction, maintenance, and use on a larger scale, and also contribute to human dignity, Golubchikov, and Badyina (2012).

The importance of housing stability was further stressed by Aubry, Nelson, and Tsemberis (2015), to be related to mental health. Indeed, mental health program is said to have been initiated in the ideology of Housing First. In the case of Housing First, the North American evidence is undeniable that it is effective in ending homelessness for a majority of individuals who have experienced chronic homelessness, especially migrants and refugees.

Finally, the attempt becomes very pertinent as it represents a shared breakaway from the mainstream understanding of the challenge of adequate housing by immigrants most especially amongst refugees in developed nations like Canada. However, this study offers a two-way trilogy approach in dissecting the albatross of housing and also, trilogy models of formulating policies and implementing the policies for an effective housing system for migrants in Canada.

6. METHODOLOGY

In other to capture appropriately the Canadian refugee experience, with regards to challenges of housing. The study adopts a qualitative research method. Data was generated using both primary and secondary sources. Secondary sources include journals articles published books and unpublished works on refugees, immigrants, and housing were consulted to understand the previous literature on the subject. Primary sources on the other hand were gotten from organizational conventions, and statutes, the official publication by organizations with human rights and housing mandates, such as the Canadian Refugee and Humanitarian Resettlement Program, the Blended Visa Office-Referred (BVOR) Program, and the In-Canada Asylum Program. Due to the exploratory nature of the research question and the fact that resources were not available to conduct interviews in multiple languages, a qualitative study design was used. A semi-structured interview with focused groups of women and children from both the local immigrants and refugee households was conducted, Although the exact response rate was not recorded, approximately 30 refugees' groups and families were invited to participate, and most refugees agreed to be interviewed. The most common reasons for refusing to participate were a lack of time or anxiety regarding confidentiality because the interviews

were to be recorded and that the subject matter of the interviews related to their immigration status. The semi-structured interviews were 45 minutes long and conducted with assistance from an interpreter when needed. Local policymakers and policy implementers in the area of refugee settlement and housing were also interviewed, and all these were interpreted logically using the narrative analysis method to have a meaningful and objective conclusion on the topical issues raised in this study.

7. DISCUSSIONS

Low-income families have been continuously priced out of the housing market in Canada over the last thirty years due to the lack of sufficient investment in the provision of affordable housing (Whitzman & Desroches, 2020), this includes new immigrants and refugees (Rose & Charette, 2017). Currently, approximately one in eight Canadian households live in unaffordable and below-standard homes (Whitzman & Desroches, 2020). Finding adequate, affordable housing for resettled refugees represents a significant hurdle regardless of the sponsorship stream (Agrawal, 2018). A study conducted in Edmonton shows that one of the most common reasons for homelessness amongst the Private Sponsored Refugees (PSRs) was sponsors setting up housing that they could no longer afford after one year of their arrival in Canada (Arnault & Merali, 2019). In some cases, sponsors may not have the best interest of the refugees at heart, even though they meant well by looking for affordable housing far away from their neighborhoods, yet they fail to see how newcomers may prefer to live in places with people from the same cultural background (Wood et al., 2011). The fact remains that one key issue with the PSR program is that it relies on significant levels of care by members of society who perform enormous amounts of unpaid labour – even more so when they lack experience. As a designated refugee reception centre with a long history of engaged community mobilizing. Ottawa has a well-established settlement sector that was organized in preparation for Operation Syrian Refugees (OSR), (Carrière, 2016). Ottawa's only Resettlement Assistance Program (RAP) -serving agency, the Catholic Centre for Immigrants (CCI), helped resettle about 1,200 Syrian Government Assisted Refugees (GAR) in a three-month period, whereas previously they served about 500 GARs annually (CCI, 2016). At a total of 1,275 people, Ottawa received the second-highest number of Syrian refugees in Ontario between November 2015 and September 2016 (Rose & Charette, 2020). The case of Ottawa provides a unique opportunity to examine how a mid-sized city successfully managed some of the highest numbers of newcomers during the OSR/SRRI (and beyond). Like many other Canadian cities, the Ottawa rental housing market is strained (Whitzman & Desroches, 2020). At $85,981, Ottawa's median household income is 22.24% higher than the national average (Statistics Canada, 2016). However, the proportion of the overall households in Ottawa that are considered very-low income is much higher than similar-sized cities, which suggests that there is upward pressure on rents (Whitzman & Desroches, 2020). Before the OSR/SRRI, Ottawa's housing market was relatively stable and affordable. From 2010 to 2015, the vacancy rates for a three or more-bedroom apartment never fell below 2.2%, and the average cost only saw an overall 5.9% annual increase (CMHC, 2020; Scoles, 2021).

7.1 INTERGOVERNMENTAL ROLES IN HOUSING CHALLENGES OF MIGRANTS AND REFUGEES IN CANADA

Delving into the discussion, it would be more strategic to first discuss the role of the Canadian government in the housing challenges of immigrants and refugees. The government plays a central role in creating, sustaining, and changing the housing system. It establishes and enforces the rules of engagements guiding the modus operandi through banking and mortgage lending practices, to tax and regulatory measures affecting building materials, professional practices, subsidy programs, and incentive patterns for average households, all of these they can do through legislation, policy formulation, policy implementation, or creation of think tanks on housing, Hulchanski (2003).

The foregoing explains the involvement and evolvement of the Canadian government with regards to housing. A policy such as *The Land Assembly Program* was formulated in the 1950s, *Funds for Urban Renewal and Municipal Infrastructures* in the 1960s. In the 1970s the federal government shifted funds into *Residential Rehabilitation Assistance Home Insulation and Neighborhood Improvement Program*, Dennis and Fish (1972). Subsequently in the 1980s following the withdrawal of funding for new supportive housing, the Canadian Center for Public-Private Partnership brought together third sector agencies to provide cost-effective housing for low-income households, Golberg (1983).

In the 2000s, the federal housing policies revolve around ecological sustainability to avoid emissions, and energy sources by encouraging housing in downtowns. More recently, the National Housing Strategy by the federal government (Government of Canada, 2017). The strategy commits to introducing legislation that will promote a human rights-based approach to housing.

It is, however, instructive to note that, Canadian settlement policy is controlled through different public and nonprofit organizations, referred to as the "settlement sector", Wayland (2007). Although, settlement services are funded by the federal government and provincial governments, however, some cities and counties offer specific programming supports as well. Case in point, Quebec took responsibility for its own settlement services since 1991, while British Columbia, Manitoba, Alberta, and most recently Ontario have negotiated their own agreements with the federal government. This makes housing and other settlement services vary across the country but the range of services offered generally includes the provision of information to new arrivals, orientation and counseling, language instruction in English or French, and employment services, which include Government-Assisted Refugees (GARs) receive financial and other support for one year from their date of arrival in Canada. Yet, Canada is late in adopting legislation that are non-discriminatory with regards to housing especially when compared to some European countries.

The legislation would require the federal government to maintain a strategy that prioritizes the housing needs of those who are most vulnerable. Aubry, (2020).

Similarly, the majority of Canada's refugees are not acknowledged as refugees until after they have been living in Canada for years after they file a claim for refugee status on Canadian soil. The considerable housing needs experienced by these refugee claimants and persons living without official status in Canada have been met with a small degree by refugee-oriented housing facilities funded by religious communities, municipalities, and other stakeholders, which adds to the toll of housing deficits for migrants and especially refugee, Wayland (2007).

In the same vein, despite series of housing policies that have been formulated and implemented by the Canadian government, it needs to be stated that the shortcomings of these policies have become more visible has opined by Novac et al (2002) where he observes that the de-housing process in Canada produces Diaspora of the excluded. This was further documented by series of official publications that gazette that 15% of Canadian hostel users are immigrants and refugees alike, and also from an oral interview with a sizeable portion of these refugees confirmed that race is still a barrier to equal housing treatment in Canada's Housing markets, Dion, (2001).

Similarly, research has shown that there are structural and systemic failures that have been found to be the oil that lubricates the wheels of youth homelessness, especially amongst refugees. According to Shewchuk (2019), these failures include broader societal issues such as poverty, discrimination, and poor coordination and integration across systems that increase the possibility that people will become homeless. Hence, the failures to support the transitional needs of young people living on child welfare have been found to result in housing instability, with migrants and refugees has the most vulnerable

However, although housing in developed nations is regarded as social benefits, the Canadian housing system encourages exclusivity by allocating differential benefits for two groups of citizens, based on whether they are in the primary-secondary part of the housing system. This no doubt further puts immigrants and refugees into double jeopardy in their experience of humane housing in Canada, Esping-Anderson (1990), and thus the governmental roles in the housing challenges for refugees and immigrant represents primary barriers in getting quality housing.

7.2 LOCAL POPULATION ROLES IN HOUSING CHALLENGES OF MIGRANTS AND REFUGEES IN CANADA

Housing policies and their effective implementation, are not formulated and implemented without their cultural colorations, derived from the settlement partners, economic capability, architectural essence to mention but a few. All of these come to bear in the outlook of housing policy which is further amplified by the local population who have experienced these cultural characteristics, Hulchanski (2003). Just like pre-colonial African cities, the socio-economic and cultural intricacies also rare their head in the housing systems of developed western nations such as Canada.

Moreover, despite the considerable effort of the Canadian government to operate a more inclusive housing system over the years, the fact that housing inclusivity or otherwise can not only be hinge on governmental efforts but a couple with other factors such as jobs inclusivity, economic inclusivity, and so on, which has ensured that infrastructural efforts within local population become very important. It was largely a consensus amongst our interviewees who are migrants and refugees that, Local population sets rents rate three times higher to them when compared to the rates given to co-host community members, this can be corroborated by the assertion of Campbell (2006).

Furthermore, the exploitative exploits of the local population against migrants and refugees alike reflect in the job inclusivity, which by default has spillover effects on the housing experience. The data on Canadian housing conditions reveal that Canadians are divided into two very different groups according to housing tenure. Owners are not only wealthier but have twice the income of renters, (Statistics Canada, Survey of Financial Security, 1984, 1999, 2008). Canada's housing system has two pools of housing consumers with dramatically different incomes and assets, even though the system has only one housing market, Hulchanski, (2003). On the back of this, immigrants most especially refuges are hard hit by such a system, this is huge because most of them are low-income earners, who work in firms owned by a member of the host community where they are underpaid, pushing them off the rung of housing and house ownership, (FGD 1, 2020).

7.3 IMMIGRANT AND REFUGEES STRATEGIES AS A FACTOR TO HOUSE CHALLENGE TO HOUSING MIGRANTS AND REFUGES IN CANADA

It is important to observe that the previously discussed factors have conditioned refugees and immigrants to a adopt series of strategies in accessing housing especially in the urban neighborhoods of Canada, which exacerbate their housing situation. Many of our respondents who are immigrants or refugees reiterate that having kids makes that at a disadvantage of accessing good housing in Canada. Hence, some of them adopt the strategies of not declaring the number of their kids, which makes them live in un-occupying facilities, while some adopt the strategy of laying off their kids who are adults, (FGD 2, 2020) These add up to the number of homeless people or the number of people with rough nights in Canada.

Furthermore, a host of refugees and migrants have been de-housed due to the language barrier. Some of our respondent claim that they do not have enough information on how to find a home, while some who are not suffering from the language barrier does not understand some technical terms in housing such as zoning, catchment and so on, and a good number of

them also claimed that they do not know anyone who is available to help them find a house. Hence, being at the cultural disadvantage of language, these immigrants and refugees found it difficult in taking steps in breaking the communication gap that has contributed to their de-housing process in Canada, (FGD 3, 2020).

As emphasized in the statement of the problem, that part of the chronic challenges that is enabling homelessness housing situations of immigrants and refugees in Canada, as to do with the economic vulnerability of these immigrants and refugees who are unemployed. However, it is salient to note that during the long waiting period of confirming the refugee status of refugee claimants, they are given the liberty to apply for temporary permits to work and study, where they are eligible for social assistance in most provinces, CIC (2020). However, their insecure status makes it more difficult for them to find employment and rental accommodation, Hiebert, D. et al. (2013).

By and large, the forgoing illuminates that, the jarring experience of refugees and immigrants with regards to housing is caused by many but interconnected factors. Hence, the strategies adopted by refugees in having access to good homes that solves housing and logistic problems are also informed by other factors such as governmental policies, and local population relations with these groups of people.

8. CONCLUSION

One of the striking findings of this study is that getting appropriate housing is more challenging for immigrants than it is for Canada's native-born population. Moreover, with the burgeoning growth of immigration and housing scholarship in Canada over the three decades, researchers have increasingly become aware that today it is difficult to locate the reality of the average immigrant in Canada, Ley, and Smith (2000). Rather, differences in outcomes in a disproportionate ratio of inappropriate housing amongst the Canadian population are likely attributable to variables such as the category of admission, ethnic group, and place of residence, language, income level, and so on.

From the forgoing the tripartite causes of housing challenges for refugees and migrants cannot be overemphasized, which have also been interconnected owing to economic, political, and cultural systems. Newcomers are most likely to experience multiple aspects of disadvantage resulting from these barriers. Immigrant and refugee groups are impacted differently by these factors in a variety of ways, these then lead to a variety of experiences of housing-related discrimination, Wayland (2007).

At best, what has been obtainable is ethno-specific efforts targeted at some certain migrant groups, which further creates ethical dilemmas as different groups of refugees and different groups of immigrants receive different levels of assistance which is not sustainable, and also antithetical to recommendations from international organizations whose mandate is to ensure quality and adequate housing as a pressing human right issue.

9. RECOMMENDATION

Giving the fact that housing shortages are becoming alarming in Canada, and an emergency approach would go a long way by increase the number of social housing options available to homeless youths across all Canadian provinces and territories. Also, by improving and expanding emergency housing services to homeless youths, including emergency shelters, street outreach, and drop-in centers, family reconnect, and Housing First programs.

Similarly, to improve economic opportunities for migrants and refugees, by resolving the gap between income support and housing cost, which should go hand in hand with improving housing types or options that should be more available and also to strengthened tenants' relationship with the landlord. This can be done by increasing initial settlement assistance, especially for refugee claimants

The Provinces should make dedicated funding available to municipalities for immigrant housing initiatives. However, the municipalities such as the cities and counties on their own end must make information on available and quality housing more available and accessible. Also, more town planning effort is required to inform of asset mapping, which should be used to identify challenges and opportunities, especially for newcomer migrants or refugees.

Lastly, housing providers should collaborate on housing document translation. Housing providers should continue to bring different cultural and ethnic agencies into social housing, and the Social Housing Service Corporation (SHSC) should establish best practices repository of immigration resources. The implementation of these recommendations will require time, money, and system-level commitment.

Nevertheless, it is important to note that each recommendation should be given full consideration as the implementation of these recommendations will result in coordinated and responsive systems that are able to address the needs of refugees and migrant's homelessness.

REFERENCES

Agrawal, K. S. (2018). Canadian Refugee Sponsorship Programs: Experience of Syrian Refugees in Alberta, Canada. *Journal of International Migration and Integration*. 4(34): 2-7. doi:10.1007/s12134-018-0640-7

Agrawal, S. (2018) *Immigration and Settlement in Edmonton*, Edmonton Local Immigration Partnership (E-LIP) Council.

Arnault, D.S., Merali, N. (2019). Pathways for Refugees' Descent into Homelessness in Edmonton, Alberta: the Urgent Need for Policy and Procedural Change. *Journal of International Migration and Integration*. 20(4): 1161-1179.

Aldiabat, K., Alsrayheen, E., Aquino-Russell, C., Clinton, M., & Russell, R. (2021). *The Lived Experience of Syrian Refugees in Canada: A Phenomenological Study. The Qualitative Report*, 26(2), 484-506. https://doi.org/10.46743/2160-3715/2021.4334

Aubry, T., Nelson, G. and Tsemberis, S. (2015) Housing First for People with Severe Mental Illness who are Homeless: A Review of the Research and Findings from the At Home–Chez Soi Demonstration Project, *The Canadian Journal of Psychiatry* 60(11) pp.467-474.

Briant, N. and Andrew, K. (2004) Priorities of African Refugees in an Urban Setting, *Journal of Refugee Studies* 17(4): 437-459.

Campbell, Elizabeth H. (2006). Urban Refugees in Nairobi: Problems of Protection, Mechanisms of Survival, and Possibilities for Integration. *Journal of Refugee Studies* Vol. 19, No. 3

Canada Immigration and Citizenship (2020). *Claim refugee status from inside Canada*: https://www.canada.ca/en/immigration-refugees citizenship/services/refugees/claim-protection-inside-canada/work-study.html

Carrière, A. (2016). *History and Legacy of refugee resettlement in Ottawa. A primer*. Ottawa, ON: OLIP. Retrieved from: http://cciottawa.ca/wp-content/uploads/History-and-Legacy of RefugeeResettlement-In-Ottawa_A-Primer.pdf.

Crisp, Jeff, Jane Janz, Jose Riera, and Shahira Samy (2009). Surviving in the City – A review of UNHCR's operation for Iraqi refugees in urban areas of Jordan, Lebanon, and Syria. *United Nations High Commissioner for refugees Policy Development and Evaluation Service.*

David, A. (2011) The 'Wicked Problem' Of Planning for Housing Development. *Housing Studies*, 26, 951-960.

Dennis, M.Fish, S. (Susan) (1972) *Programs in search of a policy: low income housing in Canada*

Dion, K. (2001) Immigrants Perception of housing Discrimination in Toronto: "The Housing New Canadians projects" *The Journal of Social Issues* Vol53, No. 3 pp 523-539.

ESDC (Employment and Social Development Canada). (2019). *Everyone counts highlights: Preliminary results from the second nationally coordinated point-in-time count of homelessness in Canadian communities.* Retrieved from https://www.canada.ca/en/employment-social development/programs/homelessness/reports/highlights2018-point-in-time-count.html

Esping-Anderson G. (1990*) The Three Worlds of Welfare Capitalism*. Princeton: Princeton University Press

Gaetz, S. Dej, E., Richter, T., & Redman, M. (2016). *The State of Homelessness in Canada*. Toronto, ON: Canadian Observatory on Homelessness Press.

Golubchikov, O. and Badyina, A. (2012). *Sustainable Housing for Sustainable Cities: Apolicy Framework for Developing Countries*, UNHABITAT.

Hiebert, D., S. D'Addario and K. Sherrell with S. Chan. (2005 & 2013). *The Profile of Absolute and Relative Homelessness Among Immigrants, Refugees, and Refugee Claimants in the GVRD. Vancouver:* MOSAIC.

Hulchanski, D. (2003) *What Factors Shape Canadian Housing Policy? The intergovernmental Role in Canada's Housing System*, Conference on Municipal Federal Provincial Relations in Canada, Queens University, Kingston.

Kofi K. and Cranfield, L. (2009) *Literature Review: Urban Refugees*, Refugees Branch, Citizenship and Immigration Canada.

Marks, A.J (2014) *New Issues In Refugee Research, Rural Refugee Resettlement: Secondary Migration and Community Integration in Fort Morgan, Colorado, Policy Development and Evaluation Service*. United Nations High Commissioner for Refugees, Research Paper No. 269.

Michael A. Goldberg **(١٩٨٣)** *Housing Problem: A Real Crisis Paperback* – 1 Jan. 1983

Novac, S. Darden, J. Hulchanski, D (2002) *Housing Discrimination in Canada: The State of Knowledge.* Ottawa: Canada Mortgage and Housing Corporation.

Rose, D., Charette, A. (2020). Accommodating Government-Assisted Syrian Refugee Newcomers: The Experiences of Resettlement Assistance Program Providers. In L. K. Hamilton, L. Veronis, & M. Walton-Roberts (Eds.), *A National Project: Syrian Refugee Resettlement in Canada* (pp. 289–310). McGill-Queen's University Press.

Scoles, C. (2021). *Finding Housing for Resettled Refugees: Accounting for the Tangled Politics of Care in Canada's Private Refugee Sponsorship Program.* University of Ottawa.

Schwan, K., Versteegh, A., Perri, M., Caplan, R., Baig, K., Dej, E., Jenkinson, J., Brais, H., Eiboff, F., & Pahlevan Chaleshtari, T. (2020) *The State of Women's Housing Need & Homelessness in Canada: A Literature Review*. Hache, A., Nelson, A., Kratochvil, E., & Malenfant, J. (Eds). Toronto, ON: Canadian Observatory on Homelessness Press.

Simich, L., Beiser, M., Stewart, M. et al. *Providing Social Support for Immigrants and Refugees in Canada: Challenges and Directions*. J Immigrant Health 7, 259–268 (2005). https://doi.org/10.1007/s10903-005-5123-1

Statistics Canada, *Survey of Financial Security*, 1984, 1999, 2008, 2013

Statistics Canada. (2013) Longitudinal Survey of Immigrants to Canada: *Portrait of Early Settlement Experiences*. (September 13) Ottawa: Minister of Industry.

Statistics Canada. (2016). *Census Profile, 2016: City of Ottawa and Canada*

Tim Aubry, (2020) *Analysis of Housing First as a Practical and Policy Relevant Intervention: The Current State of Knowledge and Future Directions for Research, European Journal of Homelessness* _ Volume 14, No. 1_ 2020.

Turner, J.H, Beeghley, L. Powers, C.H (2002) *The Emergence of Sociological Theory* (5th ed.). Belmont, CA: Wadsworth Thomson Learning, pp. 54-89.

UNHABITAT, (2010) *Right to Adequate Housing*. Fact Sheet No.21/Rev.1

United Nations High Commission for Refugee (1951) The Refugee Convention

VenelinTerziev (2019) *Conceptual Framework of Social Adaptation*, Proceedings of INTCESS 2019- 6th International Conference on Education and Social Sciences, 4-6

Walsh, C.A., Hanley, J., Ives, N. et al*. Exploring the Experiences of Newcomer Women with Insecure Housing in Montréal Canada. Int. Migration & Integration* 17, 887–904 (2016). https://doi.org/10.1007/s12134-015-0444-y

Wayland, S. (2007). *The housing needs of immigrants and refugees in Canada. Ottawa, ON*: Canadian Housing and Renewal Association.

Whitzman, C., Desroches, M-E. (2020). Women's Housing: balancing 'scaling-up' and 'caring'in Montreal, Gatineau and Ottawa. *Institute of Feminist and Gender Studies, University of Ottawa*. Retrieved from: http://womenshomelessness.ca/wp-content/uploads/Scaling up-and-Caring-report-Feb-2020-published.pdf.

Wood, P.B., McGrath, S., Young, J. (2011). The Emotional City: Refugee Settlement and Neoliberal Urbanism in Calgary. *Journal of International Migration and Integration.* 2(1): 35-58.

Published by the University of KwaZulu-Natal
https://journals.ukzn.ac.za/index.php/JICBE

Journal of Inclusive cities and Built environment. Vol. 1 No.1

How to cite: Naidoo, C., Nair, J. and Ngcobo, L. 2021. A Critique of The Modernist Approach to Post-Apartheid Housing Delivery and Urban Design. *Journal of Inclusive cities and Built environment.* Vol. 1 No.1, Pg 25-37.

A CRITIQUE OF THE MODERNIST APPROACH TO POST-APARTHEID HOUSING DELIVERY AND URBAN DESIGN

By Chloe Naidoo, Jaclyn Nair and Lindokuhle Ngcobo

Published March 2021

ABSTRACT

Apartheid planning approaches have significantly contributed to the lower quality of dwelling of marginalized groups and the continued betterment of dwellings of privileged minorities, on the other hand. This paper aims to critically review the socio – spatial manifestations of segregatory design approaches towards finding inclusive approaches that can benefit contemporary South African urban communities. The qualitative methodology compromises of a literature review, and precedent studies of key precincts in the Durban are and CBD in order to critically analyse these various implementations in their attempts to address historical disadvantages to reconnect identity and dwelling.

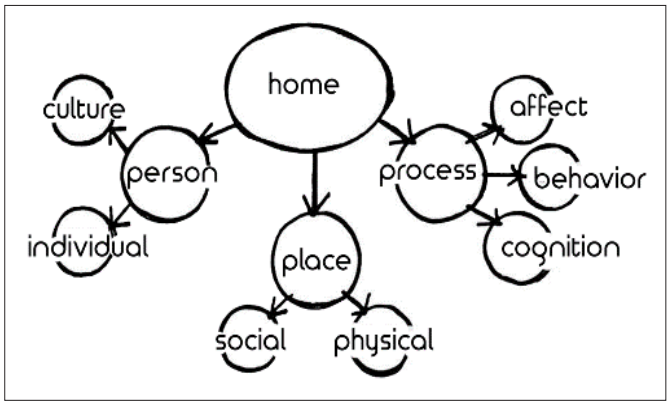
KEY WORDS apartheid, dwelling, exclusion, humanistic place – making, modernist planning

Chloe Naidoo, Final Year Barchitectural Studies Student (UKZN), Unit 1, Chablis on Cowey, 164 Problem Mkhize Road, Essenwood Durban, Cell: 076 688 6911, Email: chloefn@gmail.com
Jaclyn Nair, Final Year Barchitectural Studies Student (UKZN), 16 Crownvale Place, Rydalvale, Durban, Cell: 06 587 20805, Email: jaclynnair@gmail.com
Lindokuhle Ngcobo, Final Year Barchitectural Studies Student (UKZN), 1 Curlew Crescent, Yellowwood Park, Durban. Cell: 072 05 60557, Email: justlindo133@gmail.com

1. INTRODUCTION AND CONTEXT OF THE PROBLEM

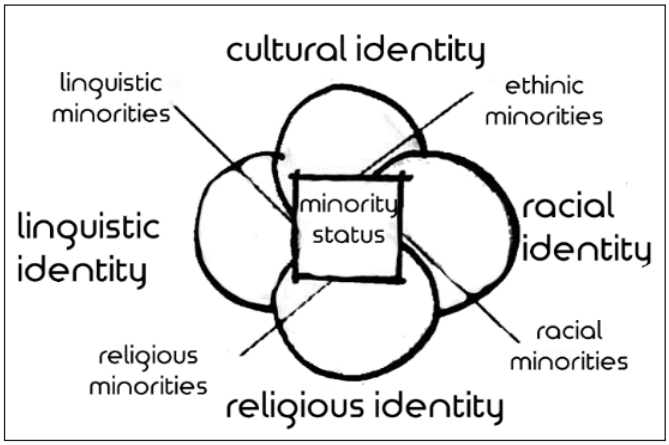
Apartheid planning along with the modern movement resulted in large fragmented and inward-focused neighbourhoods that gave very little thought into the arrangement of places of dwelling indicative of being and culture, as can be seen in Figure 1.1. which indicates the outgoing influence the nature of a home has on an individual. Dwellings that previously contributed to a meaningful quality of life were now reduced to mere demonstrations of power and control. This segregation and isolation of marginalized people resulted in a non-humanistic approach to housing these groups. (Goodlad, 1996).

Figure 1.1: Diagram Illustrating Dwelling's Influence on Man and Place



The Post - Apartheid era sees Modernist planning attempts to reverse the effects of apartheid through various implementations of social change. (Maylam, 1995) Along with the results of Apartheid, rapid modernization has shown to have altered the meaning behind dwelling and its influence on identity, reducing it to a meager physical manifestation of status rather than an indication of being and place, as illustrated in Figure 1.2, reaffirming the identities which link together to create culture and home. Research emphasizes the effects of intangible qualities on the creation of place and Norberg-Schulz's ideas of identity. (Krause, 1991) By critiquing examples of attempts to create inclusivity through Social Housing and the Modernist approach to achieve this humanistic placemaking, an analysis can be made questioning the effectiveness of Modern Planning. (Owen, 1989)

Figure 1.2: Diagram Illustrating Various Layers of Identity Associated with People



Pre-Apartheid saw the growth of a multi – faceted architectural identity emerging across South Africa. Traditional African and Colonial architecture grew alongside one another until the Group Areas Act of 1950 which segregated and established areas for certain races to live and work. This forced removal created an upheaval of cultural expression as the sole means of identity of the people became the Township. (Lee, 2005) This housing crisis created a precedent for the segregation and neglect of an isolated people. Forced to live in dense areas with little to no services, the identity and cultural expression of the Black majority was stifled as a means of control. This has continued till Modern times where we see the continued lack of infrastructure and support for the housing of these marginalized groups. Modern planning sees the continued effort to segregate and control encouraged. (Levenson, 2017)

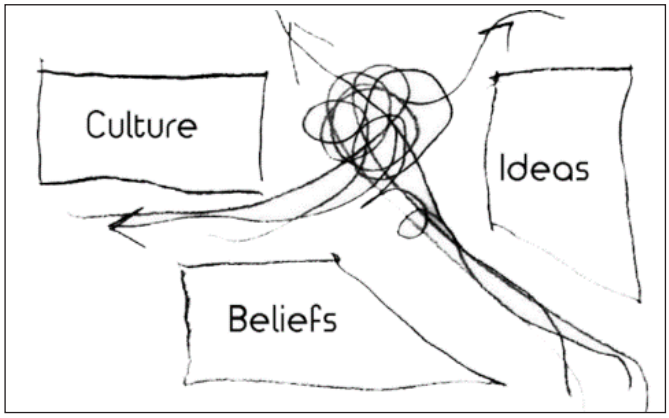
Many theories have been proposed and researched to explain what motivates this change in planning and critique their effectiveness in designing humanistically. This literature review will develop a critical understanding of the topic at hand by posing one primary question: Why has the home become less about being and identity and more an indication of status? Three follow-up sub-questions: How does a home equate to identity, being, and culture? How has race relations and status affected the nature of the dwelling after Apartheid? How has Modernist Planning proved to either worsen or better existing inequality? These inquiries aid in further understanding the meaning of being and identity and the home's role in symbolizing culture. A more personal and introspective lens analyzes the role of racial relations and status play in the identity in Durban from before Apartheid to current times. Although the literature presents these themes in various contexts, this paper will focus on their application to the South African dwelling pre- and post-Apartheid to see whether or not, adequate interventions can be implemented to better the quality of housing and its influence on the people. (Pillay, 2015)

2. DWELLING, CULTURE, AND IDENTITY IN CREATING A SENSE OF MEANING AND BELONGING

Through building, a dwelling becomes a place that an individual can claim as their own. (Heidegger & Hofstadter, 1971) Beyond a practical, elemental, or even aesthetic level, Figure 2.1 reveals how building realizes a means for being. This built form, when it transitions into a dwelling, indicates how people exist and what people are. (Fynsk, 1982) Dwelling is the first start of semipermanence in living arrangements. However, a dwelling transition into a home when this temporary shelter becomes a permanent means of identity and living. (Shidfar, 2013)

Looking at the home on a macroscale, the homogeneous transformation of the city and suburbs has undergone is evident. The makeup and organization of current neighbourhoods indicate an external influence. There is a cultural and architectural monotony found through placeless adjacency. The compartmentalization of racial classes over fifty years ago has compromised the identity of ethnically diverse groups.

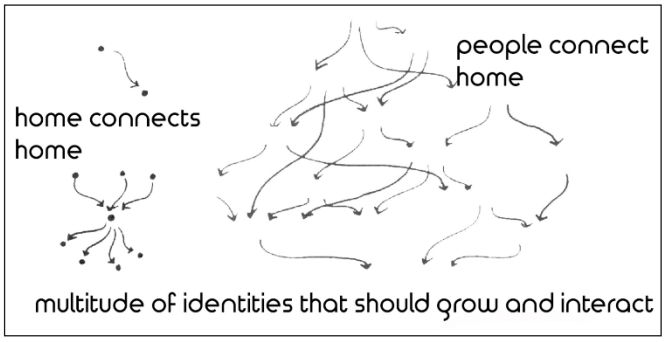
Figure 2.1: Diagram Illustrating the Connection Between Culture and Architecture



Architecture becomes the crystallization of the culture of a community over time. Culture embeds itself in a person's way of life. Evident is how cultural indices of society form the architectural body, and in fact, people living with the national culture could produce architecture with identity. (Ettehad *et al*., 2014)

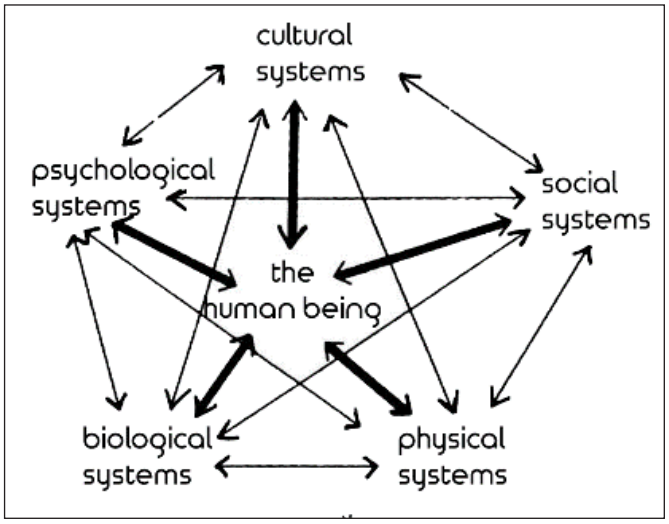
Norberg Schulz (Krause, 1991) understood the implications being and dwelling had on the architectural world, as can be seen in Figure 2.2. He stated that there is a difference between a dwelling and a home. To dwell implies establishing a meaningful relationship between man and a given environment –a sense of belonging to a place, a connection to the cosmos, be it in the natural, urban, public, or private setting. His understanding of the phenomenological trilogy in architecture, which is made up of genius loci, the concept of dwelling and existence, space, and architecture reveal this connection.

Figure 2.2: Diagram Illustrating Relationship Between People and Dwelling



Norberg-Schulz questions what it means to have a home or be bound emotionally to a meaningful place. He states that this emotional connection to a place gives life meaning. Place is made of ground, sky, and optic array becomes an essential feature of the human being. This dwelling needs something from both place and people in order to act as a means of identification. This exhibits the direct conditioning human identity has on place identity, as shown in Figure 2.3. (Krause, 1991)

Figure 2.3: Diagram Illustrating Cultural Adjacency

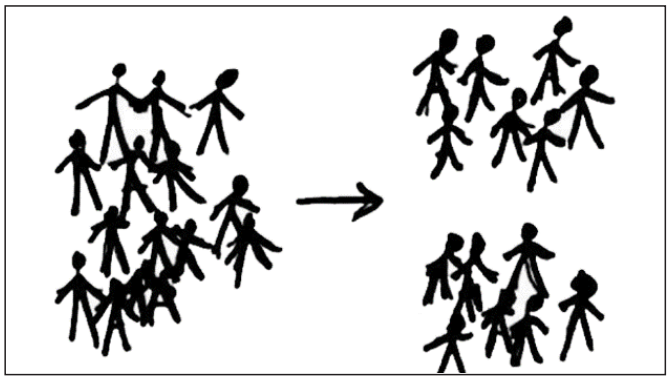


While culture depends on thoughts as well as feelings, research indicates how cultural significance proves to be based on context rather than solely inherent qualities of the phenomena itself. (White, 1959) However, despite these understandings, evident in society is a hierarchical differentiation between cultures and races, as can be seen in Figure 2.4. (Jaeger & Selznick, 1964)

Figure 2.4: Diagram Illustrating the Gradual Breakdown of the Importance of Identity

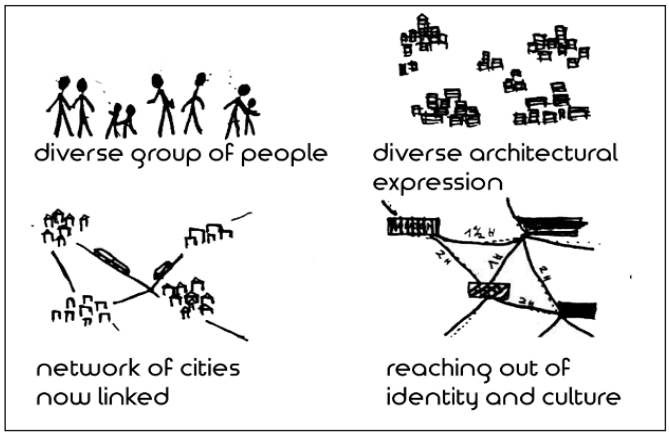
Within the South African context, as a result of this racial segregation and income inequalities, little change has occurred in reshaping the South African urban identity crisis. Little effort has been made to redress the fragmented and segregated city. Due to the lack of support for inclusive social housing, there remains architectural stigmatization stemming from historical separation, as can be seen in Figure 2.5.

Figure 2.5: Diagram Illustrating Historic Racial Separation



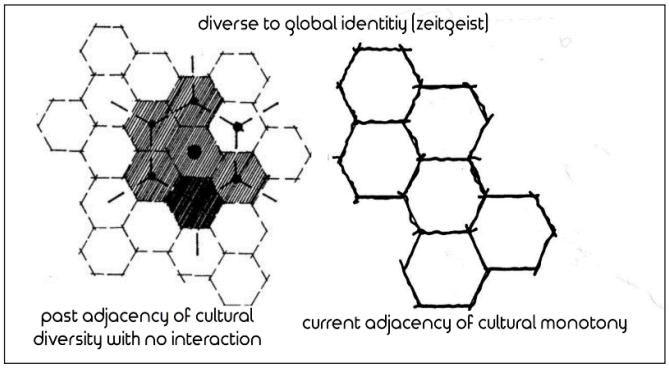
A lack of legislative and institutional support for inclusionary housing has ensured the general public, meaning middle-class individuals, will remain isolated rather than integrating with mixed-income individuals to create inclusivity and community. Inclusionary housing needs to be an attempt to address the divide in the locality of housing, for all to be able to call a place their home where they stand. While it has limitations in promoting spatial restructuring and marginalization, it has potential and value in the way it can contribute in small and symbolic ways to a more inclusive city, as can be seen in Figure 2.6. (Klug *et al.,* 2013)

Figure 2.6: Diagram Illustrating the Conceptual Manner To link Cities



Race has always been one source of identification. (Vahed & Desai, 2012) Families provide a social context in which a person can develop a sense of self, values, beliefs, and start to identify who they are within society. The socialization process allows for the transmitting of norms and values and the interweaving of being into our identity and place. To some, race has little to no impact on who they are, with many viewing the past as nothing imposing; therefore, the understanding of origins and tradition lacks the sentimentality and influence they once had—this choice made for identity thereafter impacting both the framework of the urban environment and the form. When forced into boxes separated from each other, as can be seen in Figure 2.7, there is a preservation of inequality through this categorization, from which the individual and family cannot stop from impacting dwelling. (Pillay, 2015)

Figure 2.7: Diagram Illustrating the Changes in Cultural Integration



3. PROGRESSIVE AND REGRESSIVE MODELS OF URBAN DWELLING

3.1 HOW HAVE MARGINALIZED GROUPS BEEN AFFECTED, AND HOW HAVE THEY RESPONDED?

Blacks, Indians, and Coloureds were all forcefully removed from their places of dwelling and moved to townships with the implementation of the Group Areas Act in the 1950s; this resulted in many negative outcomes in the lives of each group of people (Southworth, 1991), as can be seen in Figure 3.1.1. The creation of these areas and preservation of them indicate man's understanding or lack thereof of the noninterchangeable, ethnically diverse groups, each of which has its own identity which needs to grow outside of a fragmented constellation of ethnic types and races arranged territorially. (Mills, 1989).

Figure 3.1.1: Diagram Illustrating Separation of Space Racially

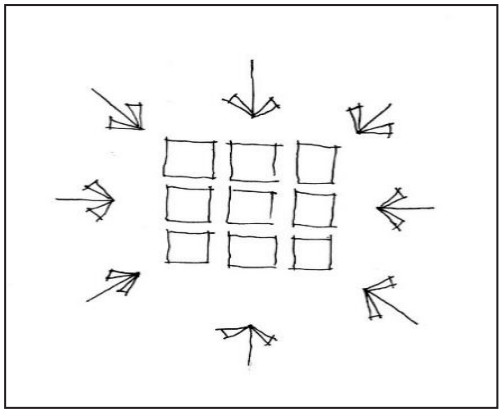
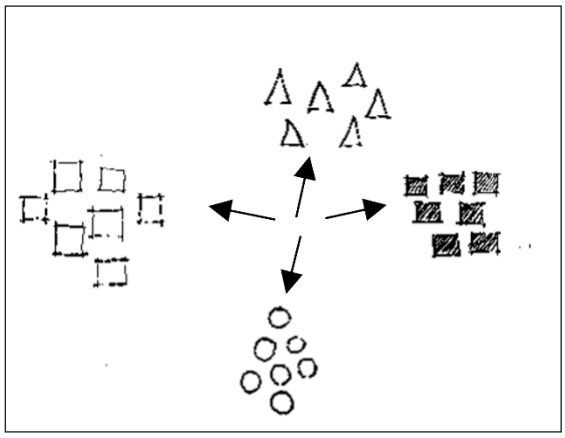


Figure 3.1.2: Diagram Illustrating the Resilience of Marginalized Groups to Oppressive Pressure



Poverty, poor sanitation, ill health, lack of opportunities, substance abuse, and sub-par education are just a few of the many adverse outcomes which have befallen the marginalized groups of South Africa. Despite their marginalization and neglect, many individuals and groups of individuals have overcome such adverse conditions to create well connected and overlapping resilient communities in their assigned townships and in and around the city of Durban, as can be seen in Figure 3.1.2. There are certain elements present in townships that strengthen their sense of place and identity, with locally owned and run precincts that have an array of functions. A traditional beerhouse may be located in a residence, a communal building may house a traditional craft market, a campsite may double as a traditional food store, and another dwelling turned into the place of business for a traditional healer. (Axness, 2014) These elements also permeated their places of dwelling, creating internal and external spaces full of their identity and spirit. The sense of belonging was strengthened by decorative, religious, and sentimental objects placed around the home. The sense of place is further enhanced by the exterior with neighbours being in close view and contact, creating a strong sense of community and place.

Architects of today are guilty of focusing on solutions that do not serve the people, struggling to prioritize people over politics. Despite 25 years passing since the apartheid era ended, you can still identify which neighbourhood a person is from based on their skin colour. The 40-40-40 principle explains this phenomenon. Firstly, locating housing schemes at least 40km away from economic hubs, disconnects people from social and economic opportunities. Secondly, by diverting 40% of income to transportation, economic progression is limited. (Mills, 1989) Lastly, the provision of 40sqm housing units create particularly crowded conditions, disturbing the personal well-being of inhabitants. Township layouts have frequently disconnected people from opportunities in all possible ways. (Mthiyane, 2019).

3.2 A CRITIQUE OF RDP HOUSING

In 1994, the South African government implemented RDP housing - Reconstruction and Development Programme - which aimed to create better and healthier living conditions for the previously disadvantaged. However, architects and planners this attempt to resolve the issue of segregation is without the necessary research or thought. These informal developments are usually neglected in terms of well-being, and adequate living conditions are not made top priority, compared to the importance of land use and the economy.

This new typology of housing captured South Africans' aspirations for social change, inclusive cities, dignified life, and employment opportunities. To this day, RDP housing remains a prominent term, referencing the connection between housing and social change with little real impact. (Laubscher, 2020).

Racially segregated apartheid planning continues today due to there never having been a significant readdressing od RDP Housing or a new planning approach. Planners of low-cost housing focus on the bottom line, production efficiency, approvals, political struggles, government sponsors, international trends and the culture of the prevailing industry, however the voice of the people in question rank relatively low. This lack of imagination is further supported by unsatisfactory funding. Interventions in the built form through the provision of physical infrastructure have been proposed as a strategy to improve economic, social, and health outcomes. However, the people's aspirations for a new life fell short, as the RDP models did not do much to reverse the effects of the past. (Huchzermeyer, 2001).

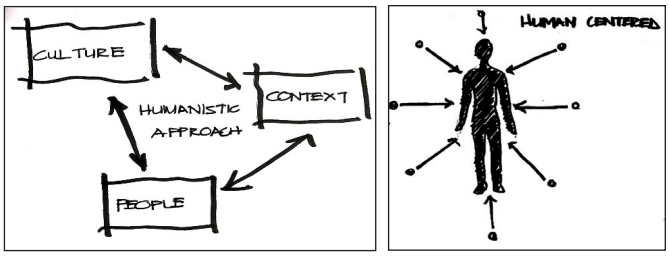
RDP models proved to be an inadequate answer to South Africa's housing crisis. Despite multiple differences, the poor social conditions existing in informal settlements is evidently unanimous. (Moolla *et al.,* 2011) A closer look at the layout of the dwellings revealed that not only did dwellings share common elements such as roof coverings and walls; they also share common outdoor spaces creating busy and vibrant social occurrences. (Ojo-Aromokudu, 2019).

Figure 3.2.1: Aerial Photograph of Dense Layouts Within RDP Settlements (Cupido, K., 2020, Covid-19 -good architecture is a human right, SACAP April/June, Edition 4)

Figure 3.2.1 above illustrates the lack of social and physical boundaries within these settlements. Planners attempted to create homes for inhabitants without doing extensive research on the inhabitants and their connection to their culture, resulting in a failed effort and an insensitive design.

Architects need to somewhat forget the work learned and take a human-centered approach, immersing themselves in the context and culture of the people by listening to the raw creativity and wisdom, enabling designs that are culturally contextual and sustainable. If people are continually involved in the design process, they will love the outcome, and if they enjoy their new homes, they will last much longer and will genuinely be a 'sustainable' social structural framework. Figure 3.2.2 below defines this relationship involved in humanistic approaches in order to design in a responsive manner. (Corder, 1997)

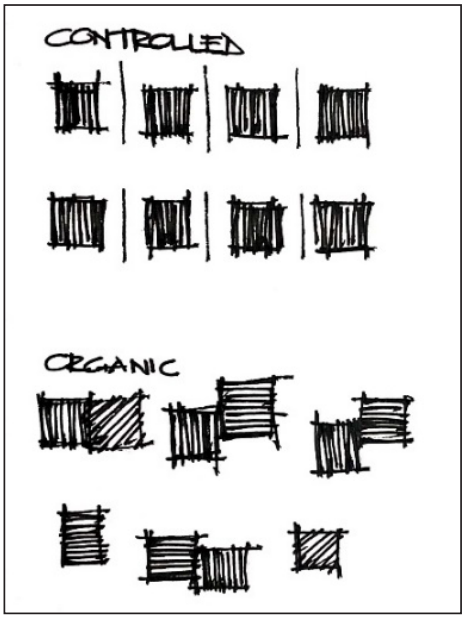
Figure 3.2.2: Sketches Illustrating Relationship forging a Humanistic design Approach



3.3 A CRITIQUE OF NEW URBAN HOUSING: UMHLANGA NEWTOWN

Umhlanga can be classified as an affluent residential suburb of a low density residential population. The residential area was developed and demarcated as a white planning area and has experienced rapid densification throughout the years. By critically analyzing the new housing developments which have sprung up in this area, one witnesses a spread of characterless dwelling environments. These dwelling spaces rely heavily on vehicular transportation routes to achieve a sense of connection and transportation. Although these wealthy spaces may seem aesthetically pleasing, they lack a sense of place and identity. Homes have no defining characteristics separating themselves from each other, portraying no sense of culture or differentiation. The layout has been extraordinarily controlled and over-planned to the detriment of meaningful places and social connections between the places. Figure 3.3.1 below illustrates the difference in layout densities and overlaps between the two typologies showing an evident lack of walkability. (Hodge, 1963)

Figure 3.3.1: Sketch Comparison of Control to The Organic Growth of Urban Environments



Inflexible layouts highly contrast lower-income areas or informal settlements. These organic settlements have been unpredictable and flexible from the onset allowing them to grow as the people using them do. (Tipple, 1994) A case study of Manhattan Mews, an affordable housing development , varying in size between 37sqm to 55sqm, aimed to expand the affordable housing footprint within the Umhlanga New Town center ,and till this day remains the cheapest in comparison. The concept of increasing the economic and racial diversity soon failed, (Day, 2003) as it had been recorded that property investors and owners had begun to resell or rent out their apartments to more affluent buyers and did no longer cater for the lower income person. The 'live, work and play' concept was appealed to young buyers that wanted to invest in property with low maintenance responsibility and economic opportunity, creating a hub that allowed for little social integration with mainly economic gains,segregation and exclusivity. Fortified by security gates, fences and walls , as well as public amenities such as private swimming pools, internet access and motor vehicles ,succeed in keeping residents lives isolated from each other within the neighbourhood. (Barger, 2016)

3.4 HOW CAN PEDESTRIANIZING THE DURBAN CBD (GREY STREET AND WARWICK) RETURN ITS VITALITY?

Racial segregation pervaded the town of Durban during its formative years, through the implementation of the Wholesale and Retail Dealers Licensing Act of 1897. This act resulted in the splitting of Durban into two parts, the "White CBD" and the "Black CBD." The resilience mentioned earlier of the marginalized races spread through the traditional "Black CBD"

(located in the Warwick Junction Precinct) by means of gradual placemaking and reclamation by the inhabitants, entrepreneurs and the general public of this community. A sense of place was achieved through the juxtaposition of a large combination of uses, differing cultures and evolving needs into a diverse group of spaces, as can be seen in Figure 3.4.1. (Badsha, n.d.)

Figure 3.4.1: Diagram Illustrating the juxtaposition of Mixed Uses

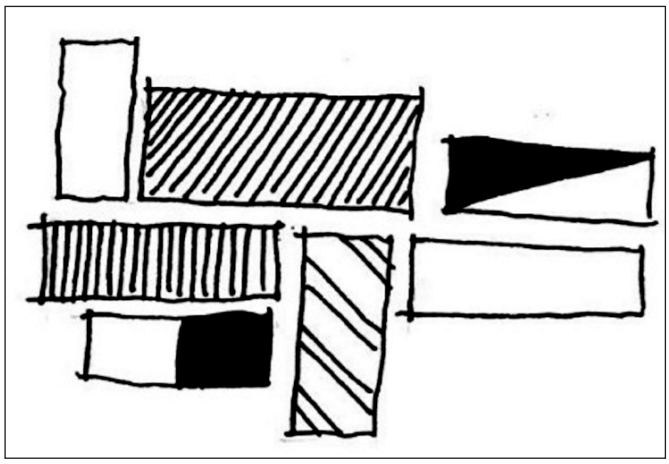
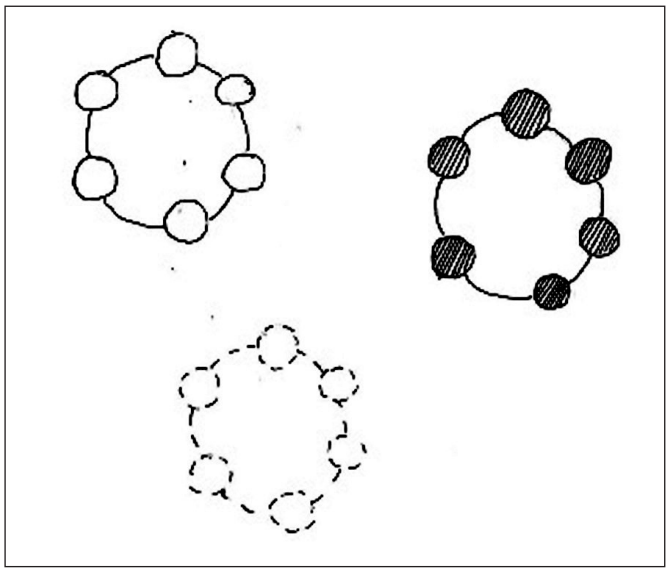


Figure 3.4.2: Diagram Illustrating Different Groups with Different Identities



The construction of the footbridges in 1996 brought change to the socioeconomic and socio-spatial makeup of the Warwick area. The aforementioned "traditional healers" and craftspeople of the township found their way to the city and saw it as a new place for their economic exchange to occur (Kitchin & Oven, 2008, pp 26). The large combination of uses present in this dense area results in a space with a clear, palpable sense of place, as can be seen in Figure 3.4.2. The Grey Street area is another place that demonstrates a strong sense of resilience, with its "Durban Indian Art Deco" charm. (Luckan, 2020) A historically "Indian" part of Durban, the Grey Street market contrasts with the Durban CBD ('white' CBD), boasting an urban form of low-rise mixed-use buildings. This configuration comprises of two- storey buildings with retail on the ground level and residential on the upper floor. The retail space opens onto a wide covered pavement, allowing trade to spill out onto the pavement as can be seen in Figure 3.4.4. The buildings are positioned in such a way that "in between" spaces are formed, thus providing an opportunity for informal trade to occur in these spaces as seen in Figure 3.4.3. The adaptive reuse of space allows the Warwick Junction Precinct and Grey Street area to maintain a strong sense of place and identity, displaying its strength as a hub for social/ economic, formal/informal activities to occur daily. Its arrangement features elements of a vibrant, complex, resilient, humanistic urban space that is likely to stand the test of time. (Brookfield & Tatham, 1957).

Figure 3.4.3: Section Illustrating Informal Trade Happening Spilling on In-between Space in Grey Street

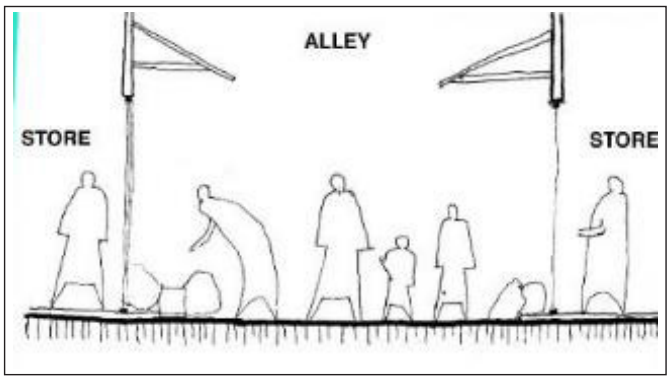
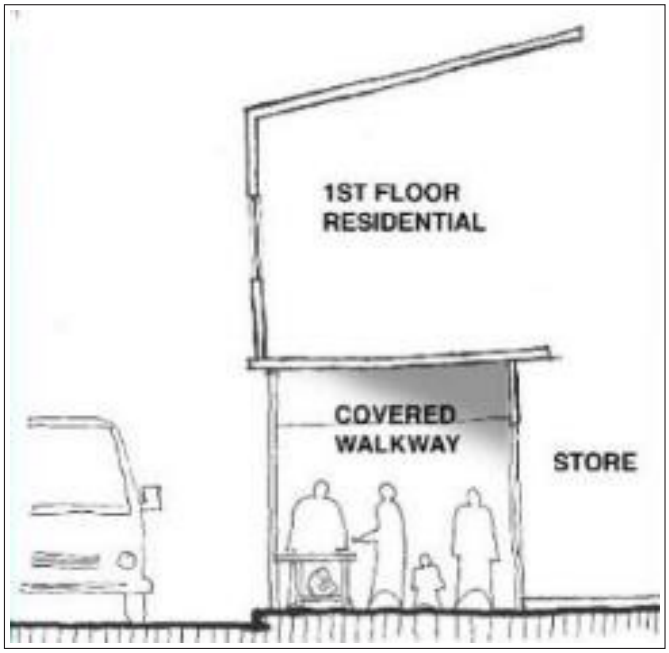


Figure 3.4.4: Section Illustrating Two Storey Unit with Ground Level Retail and Trade Out onto Covered Pavement (Luckan, 2016)

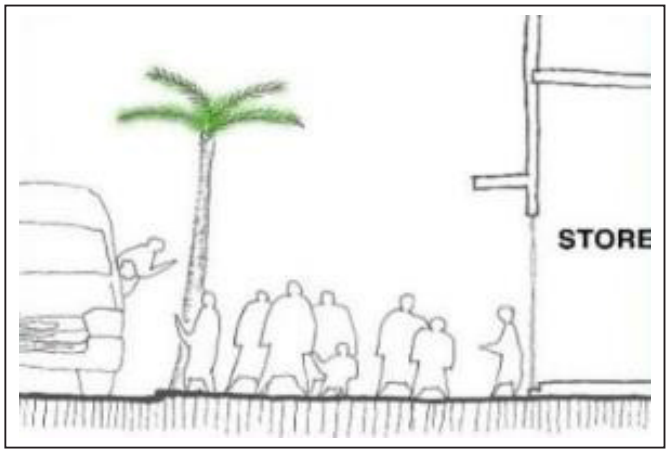


In the Warwick Junction precinct, one witnesses pavements and open spaces reused as work and trade spaces creating a vibrant public realm, celebrating pedestrian mobility and access. Very little planning was involved in this dynamic area; however, the development was heavily impaired by apartheid policies. The precinct is an example of responsive urban development, continually adapting to time, moulded by the people moving through. Unplanned developments have grown organically to create a sense of place and connection among

the people. (Luckan, 2016, pp. 62) The spatial composition of the Warwick Junction and Grey Street area instills in residences a sense of pride in their place of dwelling, and create a tight-knit community which improves safety through passive surveillance of shared spaces.

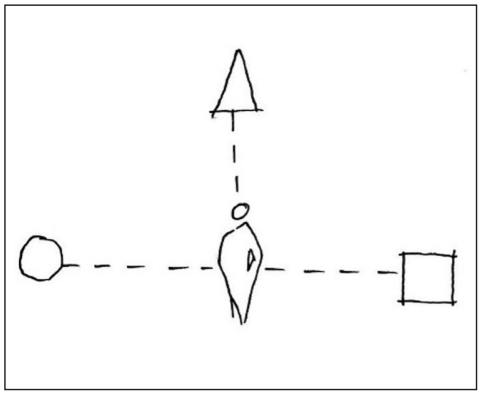
On the contrary, to a new visitor, the Durban CBD seems like chaos, with the quick pace of pedestrians going about their daily business, the deafening honk of the multitude of minibus taxis competing for customers, and the many sights and smells present in any lively city as seen in Figure 3.4.5 (Møller, 2001, pp. 228). This concentration of fast-paced activity results in the current state of placelessness that is Durban CBD, proposed in this paragraph is a pedestrianized urban centre, offering solutions based on the ideas of New Urbanism and using Barcelona's superblocks as a precedent study. (Ellis, 2002) The public amenities found in Durban CBD are what is referred to as the "Pedestrian Shed" (Steutevile, *et al.,* 2018, pp. 11).

Figure 3.4.5: Section Illustrating Intense Activity in Durban CBD



"TOD" or Transit Oriented Development is the idea of developing the area around a node of different forms of public transport. The Durban CBD only has access to bus and taxis as modes of public transport with the train system not moving through the CBD but travels along the fringes of the city, this results in poorly positioned train stations. The entire train system of Durban needs to be reimagined to provide a more affordable, efficient, and practical alternative to the traditional buses, taxis, and flawed railway system as shown in Figure 3.4.6, highlighting the need for walkability in order to create place and identity.

Figure 3.4.6: Diagram Illustrating Pedestrian with Multiple Public Transport Options in "TOD"

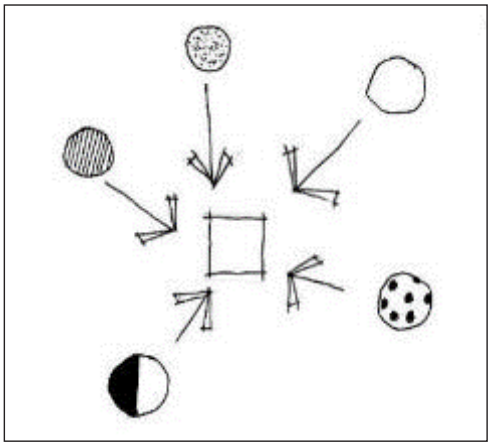


Superblocks are neighbourhoods of nine blocks, with traffic being restricted to major roads around the outside, opening up entire groups of streets to pedestrians and cyclists.

They are designed to create more open and walkable spaces for people to meet, talk, and do activities. (Møller, 2001)

This definition encapsulates the overarching goal of the superblock model as applied in the city of Barcelona. (Duchéne, 2019) It is a model that could be applied to a South African context, with just a few adjustments to be tailored to the cultures, traditions, and habits of "Durbanites." Public space used to provide for motor vehicles in major cities can be reclaimed for recreational (e.g., physical activity performance) and community activities, which would add aesthetic appeal, and could provide urban resilience by extending the home into the public realm. (Southworth, 2003) Now one can reclaim public space as a means of identity and culture which was once dominated by rigid and modern planning. (Mueller *et al*., 2020, pp. 2).

Figure 4.4.7: Diagram Illustrating Multiple Cultures and Identities Influencing Space



The superblock model is appropriate as it advocates for retrofitting existing cities and neighbourhoods and can be adapted and tailored to Durban's grid. (Lopez *et al*., 2020) Pedestrianizing the Durban CBD has the potential not to only return its vibrancy, but also give residents of the area a stronger connection and influence on their immediate context.

It would allow residents to put their own personal stamp on the city, through the decoration, cuisine, arts and crafts, musical, cultural and social practices which occur within their respective places of dwelling. These activities will spill out onto and have an effect on the CBD (Iranmanesh, 2008).

4. THEORETICAL/ CONCEPTUAL PROPOSITIONS AND CRITIQUE OF IMPLEMENTATION

Can a city that is a tree develop into a semilattice?

Biological metaphors are frequently used to describe the city and its constituent parts; the city- the body, houses- living cells, parks-green lungs, highways- arteries, and the CBD as the city's heart. (Zucchi, 2016) When these parts of the city are combined in a hierarchical manner, where sets of elements are configured in ascending order from smallest to most extensive, the resulting structure is an isolated "tree," as shown in Figure 4.1. However, when they are combined with a degree of overlap and complexity, a "semi- lattice" emerges, as seen in Figure 4.2. Through architectural and spatial intervention, the city can transform into a well-integrated and connected semi- lattice. Durban currently falls under the "tree" category, as it displays the characteristics mentioned above in the combination of its parts which do not interact with each other. (Vanderbeek & Irazabal, 2007) The separation of uses, zoning, predetermined uses of public space, arteries that cut off the physical connection of important spaces (Warwick Junction Precinct) allow for no collaboration and therefore no interconnectivity. (Herbert, 2003).

Figure 4.1: A Tree Structure

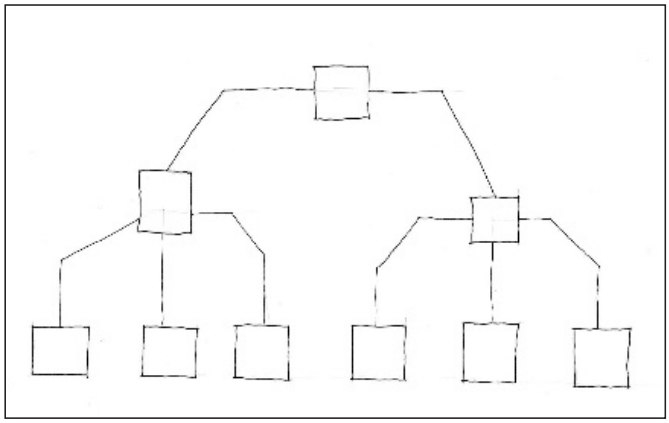
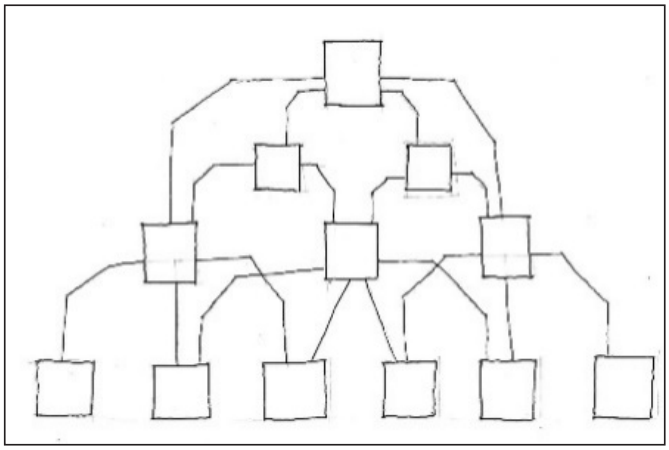
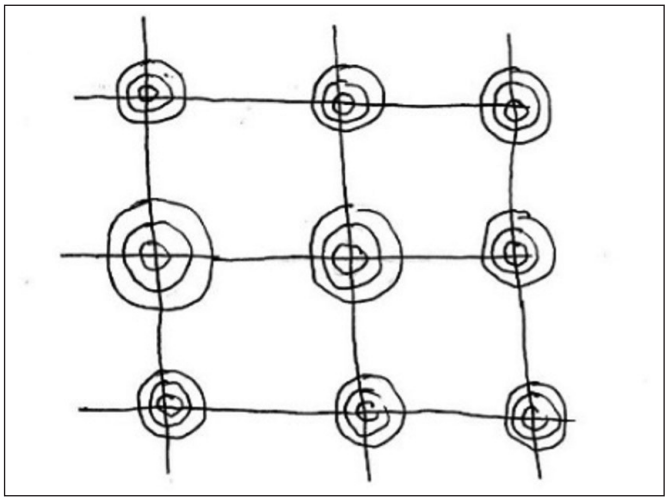


Figure 4.2: A Semi- Lattice Structure



The decentralization of space, and an emphasis on social connections, the creation of multiple activity nodes, allowance for the gradual growth of a city according to the change of needs, as can be seen in Figure 4.3. This reduces the spatial bias experienced as the socioeconomic interactions that cause the overlaps in a city, additionally allow for being centered place to be the created. (Kelbaugh, 2015)

Figure 4.3: Diagram Illustrating the Creation of Activity Nodes



The irony of Durban is in its duality - the "Black" CBD can be described as a semi- lattice structure, with its mix of uses and multiple overlaps, whereas the "White" Umhlanga New Town CBD is a tree structure with its over-designed arrangement and zoning of uses and its lack of identity. (Davies, 1981) It is a tree because it is 'complete' in its artificial design. A real city is, contrastingly, never complete but a constant work in progress. The principles of Alexander can be applied in numerous ways to transform the Umhlanga CBD into a semilattice structure. Bettencourt's quote summarizes the approach that would need to be taken to the growth of Durban, "Most developing cities have vast slum neighbourhoods, which must develop in ways that respect and develop existing socioeconomic networks without creating zones of exclusion or ghettos typical of many 'solutions' of the past' (Bettencourt, 2016, pp. 55) as seen in Figures 4.4 and 4.5.

Figure 4.4: Diagram Illustrating Gradual Growth of a City

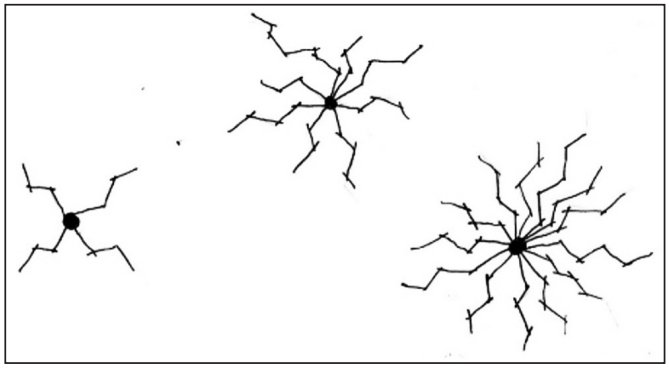
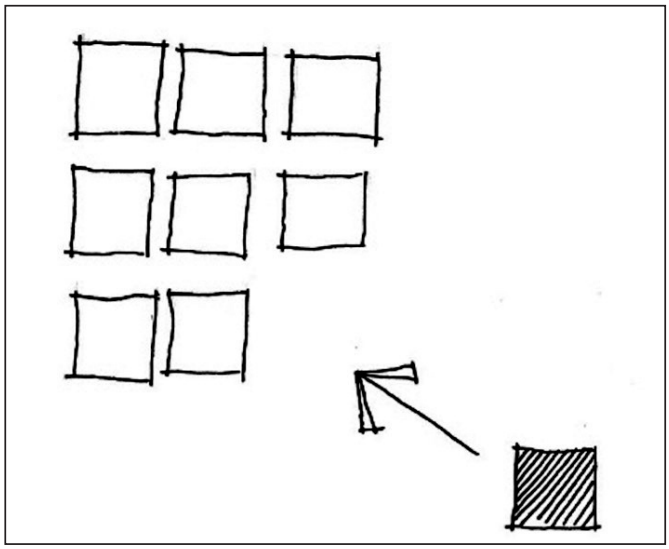


Figure 4.5: Diagram Illustrating the Creation of Inclusive Spaces



Contrastingly. while the "White" CBD may not be a slum in the traditional and obvious sense, it is with regards to its identity and means of inclusivity. (Alexander, 1965) Despite a better standard of living in the Umhlanga Newtown CBD, the research shows no means of identity and place. (Guarda, & Guerreiro, 2016) The typical tree arrangement ensures that a certain level of exclusivity will always be enforced within a community with no opportunity for individuality and connecting with one another. (Marshall, 2003) Contrastingly, while the historic Black CBD remains dilapidated with no attempts to improve the dwelling situation for its people, it proves to be a semilattice enriched with identity and culture, stemming from a strong sense of community rooted in heritage, tradition and an identity the people have created for themselves. (Maharaj, 1999)

How has RDP Housing responded to existing examples of a humanistic approach to Social Housing?

Aranya Township was designed along a central spine in a business district By B.V Doshi. This project was aimed at providing low-cost housing to India's poor in a similar way that RDP Housing aimed at providing affordable housing to South Africa's previously historically disadvantaged. Doshi used a hierarchy of open spaces that included small communal courtyards, larger green spaces for each settlement's broader community, and a central playing field to serve the entire housing project. Through open spaces and intersecting pedestrian pathways, the clusters were connected to the spine for ease of access to all services. Utilizing multiple arrangements, Doshi aimed to cater for various family arrangements, emphasizing a sense of community and neighbourhood while striving to encourage adaptation and personalization according to an individual's needs and capabilities. (Gangwar, 2017) RDP Housing can be likened to how Aranya combined its social aspect with its private aspect. Both developments took advantage of density and communal spaces to create multiple interaction zones, allowing community and culture to develop. This is a clear example of how Modern principles can use vernacular architecture and readapt it to suit the needs of people and their need for a sense of belonging and dwelling identity. (Nomico, 2003)

Both projects moved beyond an aesthetic approach and used architecture as a means to transform marginalized groups socially. A humanistic approach, when carried through, creates inclusivity and allows for a balance of organic and planned. While the community is vital in Aranya, RDP Housing's lack of open spaces suitable for civic activity ensures a limit to a crucial opportunity to connect people. There lacks in RDP Housing as well as the Umhlangha Newton precinct, a humanistic approach that considers the cooperative communities' input on their communities and context, found in Aranya and Barcelona. (Langra, 2009)

5. CONCLUSION

Through a critical analysis of dwelling and the effects, exclusivity has had on its ability to create place and identity, Humanistic Place - Making aims to foster that sense of community and identity that Modernist Planning failed to implement Post - Apartheid. By creating neighbourhoods with residents of different economic and ethnic backgrounds, a more diverse and livable community caters to a broader range of households and homes. The collaboration of culture, context, and people shows the need to bring multiplicity and heterogeneity into unity to be in harmony, creating an identity for each group rather than imposing one. Instead of community being socially repressive, it aims to show the difference does not imply exclusion but rather the affirmation of group differences. Research has indicated that groups can live together without forming a single community, remaining conscious of the differences within the city life scheme while still maintaining individuality. Social differentiation, as evident in Warwick Junction, without exclusion, emphasizes how multiple and varied lifestyles and identities create neighbourhoods and communities rather than a single shared vision, encountering difference but affirming sameness. Neighbourhoods that value diversity and address social and economic issues generate strong foundations that allow these arrangments and its diverse residents to thrive despite the influence of historic planning and segregation. (Day, 2003) Modernist Planning can make an earnest attempt to address the issues currently facing marginalized neighbourhoods and their means of dwelling rather than the constant improvement of traditionally privileged neighbourhoods as seen in the Umhlangha Precinct. By redirecting the efforts back to these historically disadvantaged

zones, the home for these groups can now be reminiscent of their rich identity rather than their status, being able to say that their means of dwelling is equal despite economic standing or historic background and is something that connects us all. Efforts can be made to realize a self – sustaining, socially conscious housing scheme. By taking a bottom – up approach to the creation of the home in the 21st century, marginalized groups can have a personal and truthful impact on the growth of their identity and community. Housing schemes such as the Aranya Housing Plan and the Elemental Housing Plan which require a certain amount of community involvement, are on the right oath to a successful and completely integrated home. (Vale *et al.,* 2014)

6. REFERENCES:

Alexander, C., 1965, *A City is Not a Tree*, Architectural Forum, Vol 122, No 1, April 1965, pp 58-62.

Axness, B., 2014, *Township Life: and eye- opening look into Traditional South African Culture*. [online] Available: https://international.uiowa.edu/news/township-life-eye-opening-look-traditional-south-african-culture. [Accessed 22 November 2020]

Badsha, O., n.d., *CBD Durban with Special Emphasis on Warwick Junction.* [online] Available: https://sarpn.org/documents/d0000875/docs/CBD%20DurbanWithSpecialEmphasisOnWarwickJunction.pdf [Accessed 9 February 2021]

Barger, K., 2016, Densification *as a tool for sustainable housing development, A case study of Umhlanga, high income area in Durban,* University of KwaZulu Natal, [online] Available: https://researchspace.ukzn.ac.za/xmlui/bitstream/handle/10413/14616/Barger_Kimi_2016.pdf?sequence=1&isAllowed=y [Accessed 9 February 2021]

Bettencourt, L., 2016, *The Complexity of Cities and the problem of Urban Design,* Sustasis Press. [online] Available at: https://www.researchgate.net/publication/311425838 [Accessed 22 November]

Brookfield, H. & Tatham, M., 1957, *The Distribution of Racial Groups in Durban: The Background of Apartheid in a South African City*, Geographical Review, vol *47*(1), pp. 44-65. [online] Available at: www.jstor.org/stable/212189 [Accessed 22 November]

Corder, C., 1997, The Reconstruction and Development Programme: Success or Failure? *Social Indicators Research,* vol *41*(1/3), pp. 183-203. [online] Available at: http://www.jstor.org/stable/27522262 [Accessed 22 November]

Davies, R. J., 1981, *The Spatial Formation of the South African City*, GeoJournal, pp. 59–72. [online] Available at: www.jstor.org/stable/45185147 [Accessed 22 December 2020]

Day, K., 2003, *New Urbanism and the Challenges of Designing for Diversity*, Journal of Planning Education and Research, vol 23(1), pp. 83-95. [online] Available at: https://www.researchgate.net/publication/270761574_New_Urbanism_and_the_Challenges_of_Designing_for_Diversity [Accessed 22 November 2020]

Duchéne, D., 2019, *Superblocks: A Study of Public Life in Barcelona.* [online] Available at: http://kth.diva-portal.org/smash/record.jsf?pid=diva2:1333426 [Accessed 22 November 2020]

Ellis, C., 2002, *The New Urbanism: Critiques and Rebuttals*; Journal of Urban Design, p. 261-291. [online] Available at: DOI: 10.1080/1357480022000039330. [Accessed 22 November 2020]

Ettehad, S., Reza, A., Azeri, K. & Kari, G., 2014, *The Role of Culture in Promoting Architectural Identity*, European Online Journal of Natural and Social Sciences, Architecture Department, Islamic Azad University, Iran, Vol. 3(4), pp. 410 – 418. [online] Available at: http://european-science.com/eojnss_proc/article/view/4181/1903 [Accessed 22 November 2020]

Fynsk, C., 1982, *The Self and Its Witness; On Heidegger's Being and Time*, Boundary 2, Duke University Press, Vol. 10(3), pp. 185-207. [online] Available at: https://www.jstor.org/stable/302786 [Accessed 22 November 2020]

Gangwar, G., 2017, *Fusion of Ancient and Contemporary Design Principles in the Works of B.V. Doshi*, Journal of Civil Engineering and Environmental Technology, Vol 4(1), pp. 11-16. [online] Available at: https://www.researchgate.net/publication/315701421 [Accessed 22 November 2020]

Guarda, I. & Guerreiro, M., 2016, *Trees and Semilattices: Analyzing Space Configuration of Two urban Systems in Lisbon Region*, Journal of Spatial and Organizational Dynamics, Vol 4(3), pp. 185-198. [online] Available at: http://www.cieo.pt/journal/J_3_2016/article1.pdf [Accessed 22 December 2020]

Goodlad, R., 1996, *"The Housing Challenge in South Africa," Urban Studies*, vol. 33, no. 9, pp. 1629–1646. [online] Available at: www.jstor.org/stable/43083397 [Accessed 9 February 2021]

Heidegger, M. & A. Hofstadter (ed.), 1971, *Building, Dwelling, Thinking*, Poetry, Language and Thought, New York: Harper & Row, pp. 143 – 162.

Herbert., M., 2003, *New Urbanism- the Movement in Context*, Built Environment (1978-), New Urbanism, Vol. 29(3), pp. 193-209.

Hodge, G., 1963, *Use and Misuse of Measurement Scales In City Planning*, Ekistics, vol 16(96), pp. 271-275. [online] Available at: http://www.jstor.org/stable/43613955 [Accessed 22 December 2020]

Huchzermeyer, M., 2001, *Housing Subsidies and Urban Segregation: A Reflection on the Case of South Africa*. Lincoln Institute of Land Policy. [online] Available at: www.jstor.org/stable/resrep18490. [Accessed 9 February 2021]

Iranmanesh, N., 2008, *Pedestrianization: A Great Necessity in Urban Designing to Create a Sustainable City in Developing Countries,* ISOCARP Congress 2008.[online] Available at: https://www.jstor.org/stable/2091416 [Accessed 9 February 2021]

Jaeger, G. & Selznick, P., 1964, *A Normative Theory of Culture*, American Sociological Review, American Sociological Association, Vol. 29(5), pp. 653-669. [online] Available at: https://www.jstor.org/stable/2091416 [Accessed 22 November 2020]

Kitchin, F., Ovens, W., 2008, *Case Studies on Integration,* Urban Landmark, Hatfield, pp. 21 -28. [online] Available at: http://www.urbanlandmark.org.za/downloads/case_studies_integration.pdf [Accessed 9 February 2021]

Kelbaugh, D., 2015, *The Environmental Paradox of the City*, Landscape Urbanism, and New Urbanism; Consilience, pp. 1-15. [online] Available at: https://doi.org/10.7916/D8VT1RSV [Accessed 22 November 2020]

Klug, N., Rubin, M. & Todes, A., 2013, *Inclusionary housing policy: a tool for reshaping South Africa's spatial legacy,* Journal of Housing and the Built Environment, Springer, Vol. 28(4), pp. 667-678. [online] Available at: https://www.jstor.org/stable/42636276 [Accessed 22 November 2020]

Krause, L. R., 1991, *Review: Architecture: Meaning and Place by Christian Norberg-Schulz*, Journal of the Society of Architectural Historians, University of California Press on behalf of the Society of Architectural Historians, Vol. 50, No. 2, pp. 197-199. [online] Available at: https://www.jstor.org/stable/990596 [Accessed 22 November 2020]

Langra, T., 2009, *Housing the poor: a study of Aranya, India*, Deakin University, Geelong, Australia. [online] Available at: https://www.researchgate.net/publication/330870455 [Accessed 22 November 2020]

Laubscher, D., 2020, *The new normal within the built environment*, SACAP April/June, Edition 4. [online] Available at: https://www.sacapsa.com/resource/resmgr/2020/sacap_newsletter_april-june_.pdf [Accessed 22 November 2020]

Lee, R., 2005, *"Reconstructing 'Home' in Apartheid Cape Town: African Women and the Process of Settlement,"* Journal of Southern African Studies, vol. ٣)٣١), pp. ٦٣٠–٦١١. [online] Available at: www.jstor.org/stable/٢٥٠٦٥٠٢٧[Accessed 12 February 2021]

Levenson, Z., 2017*, "Living on the Fringe in Post-Apartheid Cape Town," Contexts*, vol. 16(1), pp. 24–29. [online] Available at: www.jstor.org/stable/26370473 [Accessed 12 February 2021]

Lopez, I., Ortega, J., & Pardo, M., 2020, *Mobility Infrastructures in Cities and Climate Change: An Analysis Through the Superblocks in Barcelona*, ATMOSPHERE 2020*,* Vol 11 *(410)* [online] Available at: https://doi.org/10.3390/atmos11040410 [Accessed 22 November 2020]

Luckan, Y., 2016, *The Human City: People, Place and Time as critical Determinants of Urban Quality*

Luckan, Y., 2020, Architecture and the Ecological Environment: Exploring the Relationship Between Natural and Humanistic Ecosystems

Luckan, Y., 2020, D'Urban Resilience: The Warwick Junction Precinct

Maharaj, B., 1999, *The Integrated Community Apartheid Could Not Destroy: The Warwick Avenue Triangle in Durban,* Journal of Southern African Studies, vol. ٢٥(2), pp. 249–266. [online] Available at: www.jstor.org/stable/2637602. [Accessed 22 November 2020]

Marshall, S., 2003, *New Urbanism: An Introduction*, Built Environment (1978-), New Urbanism, Vol. 29(3), pp. 188-192.

Maylam, P., 1995, *Explaining the Apartheid City: 20 Years of South African Urban Historiography,* Journal of Southern African Studies*,* Vol *21*(1), 19-38. Available at: http://www.jstor.org/stable/2637329 [Accessed 13 February 2021]

Mills, G., 1989, *Space, and power in South Africa: The township as a mechanism of control*, Ekistics, Athens Center of Ekistics, Vol. 56(334/335), pp. 65-74. [online] Available at: https://www.jstor.org/stable/43622104 [Accessed 22 November 2020]

Møller, V., 2001, *Monitoring Quality of Life in Cities: The Durban Case,* Development Southern Africa, Vol. 18, No. 2, pp. 217-238. [online] Available at: https://doi.org/10.1080/037/68350120041910 [Accessed 10 February 2021]

Moolla, R., Kotze, N., & Block, L., 2011, *Housing satisfaction and quality of life in RDP houses in Braamfischerville, Soweto: A South African case study*, Urbani Izziv*,* Vol *22*(1), pp. 138-143. [online] Available at: http://www.jstor.org/stable/24920563 [Accessed 22 November 2020]

Mthiyane, W., 2019, *Ubuntu Architecture: Listen to build,* SAIA KZN Journal, Issue 3. [online] Available at: https://www.kznia-journal.org.za/journal/2019-saia-kzn-informality [Accessed 22 November 2020]

Mueller, N., Rojas-Rueda, D., Khreis, H., Cirach, M., Andrés, D., Ballester, J., Bartoll, X., Daher, C., Deluca, A., Echave, C., Milà, C., Márquez, S., Palou, J., Pérez, K., Tonne, C., Stevenson, M., Rueda, S., Nieuwenhuijsen, M., 2020, *Changing the Urban Design of Cities for Health: The Superblock Model,* Environment International, Vol 134. [online] Available at: http://www.sciencedirect.com/science/article/pii/S0160412019315223 [Accessed 22 November 2020]

Nomico, M., 2003, *Dichotomies of urban change in Durban*, Urban Design international. [online] Available at: https://link.springer.com/article/10.1057/palgrave.udi.9000102 [Accessed 22 November 2020]

Ojo-Aromokudu, J.T., 2019, *What can we learn from Informal Settlements,* SAIA-KZN Journal, Issue 3.

Owen, G., 1989, *Forget Europe, Forget America: Architecture and Apartheid*, Journal of Architectural Education (1984-),Vol. 42, No. 3, pp. 3-23. [online] Available at: https://www.jstor.org/stable/1425059 [Accessed 9 February 2021]

Pillay, K., 2015, *South African Families of Indian Descent: Transmission of Racial Identity*, Journal of Comparative Family Studies, University of Toronto Press, Vol. 46(1), pp. 121-135. [online] Available at: https://www.jstor.org/stable/43613104 [Accessed 22 November 2020]

Shidfar, S., 2013, *The Difference Between Dwelling And Home In Architecture*, IJCSI International Journal of Computer Science Issues, Vol. 10, Issue 4 (2), pp. 239 -243. [online] Available at: https://www.ijcsi.org/papers/IJCSI-10-4-2-239-243.pdf [Accessed 11 February 2021]

Southworth, B., 2003, *City Squares in Cape Town's townships, Public Space as an instrument of urban transformation,* pp. 1-11. [online] Available at: http://www.treasury.gov.za/divisions/bo/ndp/TTRI/TTRI%20Oct%202007/Day%202%20-%2030%20Oct%202007/7.10%20Reading%20Public%20Spaces%20CoCT.PDF [Accessed 22 November 2020]

Southworth III, H., 1991, *Strangling South Africa's Cities: Resistance to Group Areas in Durban during the 1950s*, The International Journal of African Historical Studies, Vol.24(1), pp. 1-34.

Steuteville, R., 2017, Twenty-Five Great Ideas of New Urbanism. [online] Available at: https://www.cnu.org/sites/default/files/25-great-ideas-book.pdf [Accessed 22 November 2020]

Tipple, A., 1994, *The Need for New Urban Housing in Sub-Saharan Africa: Problem or Opportunity*, African Affairs, vol *93*(373), pp. 587-608. [online] Available at: http://www.jstor.org/stable/723668 [Accessed 22 November 2020]

Vahed, G. & Desai, A., 2012, *Identity and Belonging in Post-Apartheid South Africa: The Case of Indian South Africans, Exclusion, Social Capital, and Citizenship. Contested Transitions in South Africa and India Chapter: Identity and Belonging in Post-Apartheid South Africa*, Routledge, New Delhi, pp. 488 - 508 [online] Available at: https://www.researchgate.net/publication/270051163_Identity_and_Belonging_in_Post-Apartheid_South_Africa_The_Case_of_Indian_South_Africans [Accessed 22 November 2020]

Vale, L., Shamsuddin, S., Gray, A., & Bertumen, K., 2014, *What Affordable Housing Should Afford: Housing for Resilient Cities*, Cityscape, vol 16(2), pp. 21-50. [online] Available at: http://www.jstor.org/stable/26326882 [Accessed 13 February 2020]

Vanderbeek, M. & Irazabal, C., 2007, *New Urbanism as a New Modernist Movement: A Comparative Look at Modernism and New Urbanism*, Traditional Dwellings and Settlements Review, Vol. 19(1), pp. 41-57. [online] Available at: https://www.jstor.org/stable/41758514 [Accessed 22 November 2020]

White, L.A., 1959, *The Concept of Culture*, American Anthropologist, Wiley on behalf of the American Anthropological Association, Vol. 61(2), pp. 227-251. [online] Available at: http://www.jstor.com/stable/665095 [Accessed 22 November 2020]

Notes

Published by the University of KwaZulu-Natal
https://journals.ukzn.ac.za/index.php/JICBE

Journal of Inclusive cities and Built environment. Vol. 1 No.1

How to cite: Wahab B., Popoola, A.A, and Medayese, S., 2021. Community Consultation in Risk Management: Examples from Nigeria. *Journal of Inclusive cities and Built environment.* Vol. 1 No.1, Pg 39-52.

COMMUNITY CONSULTATION IN RISK MANAGEMENT: EXAMPLES FROM NIGERIA

By Bolanle Wahab, Ayobami Abayomi Popoola, Samuel Medayese

Published March 2021

ABSTRACT

Disaster and risk experience remains a global pandemic. However, community as an embodiment of stakeholders is an essential aspect to managing the global risk exposures. The argument is that the immediate community plays a vital role in risk management. The study methodology used in exploring community consultations in risk management was through the triangulation of researchers' experience and a sectoral approach which entail the convergent parallel mixed-method of community consultations. Secondary data was obtained from some selected community consultation programmes on risk management organised by selected risk management agencies in Nigeria's South-Eastern and Northern regions. The Youth Transformational Leadership Collaborative Initiative within the National Emergency Management Agency (NEMA), National Youth Service Corps and the NEMA-Military Joint Task Force, and the Borno State residents' programme reports iterate that communities are frontline stakeholders in risk management.

A case study of community disaster risk management in some African countries was also documented. Extensive consultations with critical stakeholders coupled with a healthy sustained collaboration among the stakeholders led to improved coordination in the fight against insurgency in Borno state communities. It was identified that coordinated information dissemination between communities and the Task Force was an effective mechanism for community policing and risk reductions. It was identified that a low level of public awareness of disaster risk, unavailability of relevant data, weak capacity and inadequate personnel, lack of political will, amongst others, were the challenges to community consultation in risk management in Nigeria. The study proposed a community-based disaster risk management approach, which entails intensive and extensive consultation to build people's capacity of coping with disaster risks towards creating safer and resilient communities.

KEYWORDS Communities; Community Consultations; Participation; Risk management

Corresponding Author: Ayobami POPOOLA, SARChI Chair for Inclusive-Cities, University of KwaZulu Natal, Durban,
E-mail: bcoolay2@yahoo.com

Bolanle WAHAB, Department of Urban and Regional Planning, University of Ibadan, Nigeria

Samuel MEDAYESE, Department of Town and Regional Planning, University of KwaZulu Natal, South Africa

1. INTRODUCTION

With the global increase in disaster and environmental incidence and issues, the emphasis has been placed on community consultation as a strategic mechanism and support risk management to ensure sustainable development. Stakeholders have increased their momentum in disaster risk awareness, sensitization, and consultations owing to the impact of various risks, disasters, and hazard anomalies on over 200 million people (FAO, 2015; UNISDR CRED, 2015). One of the factors identified as contributing to frequent natural disasters is climate change (Wahab and Popoola, 2018; Adeleye et al., 2019). Across the globe, cities in African (Ibadan, Lagos, Durban) and other developing nations (India, Bangladesh) are classified as more vulnerable and are at high risk to climate change realism (Nkomo et al., 2006; Betsill and Bulkeley, 2007, Lwasa et al., 2015; Connolly-Butin and Smit, 2016).

The realities of changing climate are evident in several Nigerian coastal and inland cities where flooding has become more frequent, intense, and occurring in locations previously not at risk (Adewole et al., 2015; Adeleye, 2019). The coastal communities in Lagos, Ondo, Bayelsa, and the Rivers States are highly vulnerable to climate-induced risks such as sea-level rise, storm surges, and flooding. Simultaneously, the inland cities are equally exposed to temperature increases, flooding, and windstorms. Studies have reported that the increased risk exposure and multiple hazard incidence can be attributed to poverty, space pressure, overcrowding, and weak adaptive capacity (Cutter et al., 2012; Shepherd et al., 2013; Pourazar, 2017; Wahab and Popoola, 2018; Thomas et al., 2019). In 2012, twenty-nine out of thirty-six states in Nigeria experienced flooding (United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), 2012; Ebuzoeme, 2015; Adeleye et al., 2019, Oduah, 2019; Akukwe, 2019; Xinhua, 2020). However, in all of these, experiences have indicated insufficient information and preparation to combat disasters, thereby making Nigerian stakeholders' responses to be reactionary to provide relief materials to the affected population.

The role of community consultation in eliminating reactive risk management approaches cannot be downplayed. Bahir (2010) iterates that risk management consultations proffer communities a better understanding of the livelihood stress created from the risk exposure and how best to manage the exposure towards improved wellbeing. Community consultations are the keystones for achieving futuristic socio-economic sustainability. Mclaughlin (2007) recognised that maintaining safety and reducing communal vulnerability is dependent on a collective habit among dwellers through consultation. Whatever the effects of the identified risks may be, it would be essential to determine effective ways of informing and sensitising communities about the causes and the solutions if the right measures could be taken on time and long-lasting. The perception is that collective reasoning through consultation amongst societies of the same goal can be critical to risk management sustainability.

This paper examined the significance of community consultation, sensitisation, and engagement in risk management and how it can be undertaken. It explains the underlying concepts of risk, community risk management, community consultation, and sensitisation. Relying on secondary data, the paper discusses the principles of and steps in community consultation and answers why encourage community consultations in risk management, the stages in the consultation and sensitisation process, the requirements and advantages of community involvement in risk management. It also presents the types and levels of community involvement, the affected population's roles, community consultation tools, and risk sensitization activities. Finally, the paper presents community consultation and sensitisation challenges in risk management and offers suggestions on addressing them. It encourages risk management agencies to offer affected communities a range of options for preparedness, mitigation, adaptation, and reconstruction and recovery activities.

2. CONCEPTUAL UNDERPINNING

2.1 COMMUNITY AND COMMUNITY CONSULTATION

The meaning of the term "community" is vital to the proper understanding of this paper. Various scholars have defined community in various literature ways (Gbefwi, 2004; Olise, 2007; Pradeep and Sathyamurthi,2017). The concept of community ranges from micro-systems (which include small groups, extended family units, clusters of isolated homesteads, clans, villages, neighbourhoods, or small towns) to macro systems (such as cities, countries, regions, states, nations, or the entire human population) (Thomas, 1973). According to the World Health Organization (2008), a community consists of people living together in social organization and cohesion. Its members share in varying degrees political, economic, social, and cultural characteristics and interests and aspirations, including health. The definition of community as a group of individuals and households living in the same location and having the same hazard exposure, who can share the same objectives and goals in disaster risk reduction (Victoria, 2009), remains very important to this study. The organizational structure of most communities is as follows: (i) Village Head (Paramount Ruler); (ii) Village Council (Chiefs); (iii) Quarter/Ward Chiefs (Baale); (iv) President/Chairman (Community Development Committee); (v) Compound Heads (Baale) (vi) influential Leaders, and (vii) Members of the Community (the people). In every community, there are three groups of leaders: formal leaders, informal leaders, and opinion leaders. This structure allows the community to identify the starting point in their consultation, mobilisation, and sensitisation processes on risk management issues.

3. FUNDAMENTAL PRINCIPLES OF EFFECTIVE COMMUNITY CONSULTATION

Community Liaison Committee (CLC) (2005) identifies ten basic principles fundamental to any practical consultative, participatory, or consensus process. These are:

- Purpose Driven – For any effective community consultation, people need a reason to participate in the process. They need to know what they stand to gain by participating in the process.
- Inclusive, not Exclusive - All parties with a significant interest in the issue (irrespective of age, literacy level, and gender) should be allowed to be involved in the consultation without bias or discrimination by the facilitators.
- Voluntary Participation - The parties who are affected or interested must participate voluntarily. No party should be forced into the process without their consent.
- Self-Design - The participants should be allowed to design their process regarding when, where, and how to meet.
- Flexibility – The process should be designed flexibly to allow for the opportunity to cross-breed ideas to arrive at the most effective decisions.
- Equal Opportunity - all parties must have equal access to relevant information and the opportunity to participate effectively throughout the process.
- Respect for Diverse Interests - Acceptance of the diverse values, cultures, interests, and knowledge of the parties involved in the consensus process is essential.
- Accountability - The parties are accountable both to their constituencies and the process they have agreed to establish.
- Time Limits - Realistic deadlines are necessary throughout the process to prevent any delay that might be costly to the concerned communities.
- Implementation - Commitment to implementation and effective monitoring are essential parts of any agreement.

4. COMMUNITY CONSULTATION IN RISK MANAGEMENT: TOWARDS A SAFER AND INCLUSIVE SPACE

Active participation through consultations remains a critical success factor in community risk mitigation programmes. This is because the residents are first-hand victims of societal risk exposures and incidence. The community would not participate actively in any risk management programmes that are alien to them or have no idea, information, or experience. Effective community consultation and sensitisation on risk management will ensure the success and sustainability of any risk management project or programme to be put in place. It can also ensure a reduction in the number of casualties and damage likely to occur due to the risk. The community's ability and capacity to mitigate, adapt, and recover from a hazard's impact would be ascertained through consultation. According to UNISDR (2004), collective capacity can be physical, institutional, social, or economic. These dimensions of capacity were why Holzmann and Jha (2008) advocated for a collective balance between community and government priorities towards disaster-risk-reduction outcomes. Also, community members may be unaware of specific hazards, especially if they have never experienced one (e.g., flooding). In such situations, the government needs to organise a comprehensive engagement with communities inform of elaborate dialogue and information-sharing with them at each stage of a risk assessment process (Holzmann and Jha, 2008).

The need for community participation as a driving force for spatial empowerment remains critical to urban sustainability (Aigbavboa and Thwala, 2011). The argument is that without prejudice to the communal skill and capacity contributions of participating residents in projects, they remain critical to policy and development sustainability and inclusive space production. Aigbavboa and Thwala (2011) exemplified that community participation as a process of coming together of various stakeholders and actors in the built environment can be maximised in the production, planning, and management of housing development towards ending exclusion. The World Bank (1996) points out that participatory action among stakeholders is critical to achieving fairness in managing the public good within a space. Recognising the need for communal safe space, Archer et al. (2014) argued that local people and other actors such as non-governmental organisations (NGOs) are critical to the governance of emergency management, infrastructure provision, and urban servicing.

Arguing from the climate change vulnerability adaptation within the urban space, the view that urban poor integration and participation was undoubtedly needful in community-based adaptation to climatic solution goals (Forsyth, 2013; Archer et al., 2014) and urban adaptation to be inclusive to local perspectives. Thus, urban resilience, which gives more room to community voices, can reshape the definition of climate-related problems (disaster-related) and, hence, solutions to them so that urban governance becomes more inclusive, transparent, and accountable (Archer et al., 2014). Recognising social equity, justice, and participatory governance to community sustainability, Cuthill(2011) alluded that inclusiveness and communal sustainability are interwoven (Conole, 2012; Amado et al., 2013; Bhorat, 2020). Summing this, Burr (2011:1) mentioned that the local lens and perspective to public policy and planning could not be ignored in configuring for a progressive response. This is because contemporary planning theories acknowledge the value of community participation in the development process of our built environment, suggesting that community

involvement has the potential to achieve a more sustainable outcome (Van Empel, 2008:549).

5. TOOLS OF COMMUNITY CONSULTATION

Cuthill (2001) cued that community consultation approaches, relying primarily on formal hearings and public meetings, slowly evolve into a diverse range of interactive methods being used early in the planning and decision-making sequence. Direct community participation is educative, developmental, therapeutic, and integrative, legitimising instrument and a necessity to bring about the desired change. However, the need for effective community consultation and sensitisation requires selecting appropriate tools to achieve the required results in terms of risk management (IFRCS, 2011). The following tools are suitable and appropriate for effective community consultation. Their selection depends to no small extent on the results the facilitators want to achieve, the social and economic status of the target community, and available resources for the exercise (IFRCS, 2011):

a. Publications, Audios and Video Materials, and Social Media Publications:

Publications in print or digital materials are a means of promoting public awareness and disseminating public education messages about the effects of risks, especially in literate communities. Professionally produced and pre-scripted videos are tools that can be used for community consultation about risks. The videos are essential for documentation, public relations and an essential means of tapping into the community's indigenous knowledge and practices, stimulating local creativity, sharing stories, and disseminating peer-to-peer education on various aspects of risk management. Social media includes Facebook, Twitter, and YouTube that permit people to communicate and network online without needing traditional organizational support. They can be used to disseminate information, build trust and cohesiveness and reach out to others on risk management. It is a trendy yet inexpensive medium of communication for millions of people in today's world. They promote knowledge sharing and are an effective way to deliver public awareness or sensitization.

b. Curricula, training modules, and presentations:

The development of curriculum and the Africanisation of modules to speak to Africa content has remained essential to responding to the Africa planning problem. Identifying this, Nkoane (2006) presented that recognising the local community problem and its adequate engagement cannot be sustainably achieved without the communities presenting the narrative. This presents a divergence away from the Europeanisation of the experiences of the local African people. Mheta et al. (2018) emphasised that the curriculum's decolonization needs to embrace the meaning of an educational problem. It is this study a disaster problem from the perception of local stakeholders. This is because it presents a paradigm shift away from the criminalisation of the local and indigenous content and approaches of the people and local universities. For example, as Mheta et al.(2018) narrate, modern built environment spaces and their configuration have continued to reflect the European experience and rigid educational templates. Iterating on the South African experience, Knight (2018:273) opted that "...decolonization and transformation at the local level, speaks to wider issues relating to the institution and post-Apartheid..." This points at a local spatial limitation emerging towards the solving of local problems. The notion was that there had been the flaw of incorporating relevant and emerging local issues in the training spaces of African schools, Polytechnics, and universities. Important information such as those on disaster risk management can be conveyed through events such as meetings, seminars, workshops, webinars (online seminars), and face-to-face training for community members. Participant interactive exercises, such as learning by doing and social networking, can also be conducted in face-to-face instruction to facilitate community-based intervention and provide standalone guidance to users. Presentation materials such as cue-cards, flipcharts or boards, consultation plans, and policy display through video and animation are also useful.

c. Performance and the Arts:

The role of indigenous knowledge such as poetry reading, storytelling, singing, and dancing remains important to community consultation. These can involve volunteers and community members, including males and females, the youth and elderly, as performers and audiences. Mheta et al. (2018) advocated embracing multilingual signage to better integrate the local content into problem-solving.

d. Games and Competitions:

Sporting events, games, and competitions offer a powerful, useful, and engaging route to what IFRCS (2011) calls' edutainment.' Soccer, lawn-games, inter-house competitions, quizzes, and debates can be arranged between school-based, community clubs within local government areas or state-based teams to disseminate risk management messages and maximize community sensitization involvement. The Oyo State Universal Primary Education Board organises regular quiz competition amongst public primary schools on risk management under the "Education in Emergency" programme. Games such as traditional chess (***ayò***) are top-rated in south-west Nigeria and usually attract a crowd of adults. Roleplay, problem-solving, and simulation games can also help people learn about complex information such as risk management.

e. Radio, Television, and Early Warning Telecommunication:

Are essential to disseminate information such as early warning messages to communities, especially on impending flood disaster. Radio jingles, short plays on local radio and television are being used extensively in Nigeria at the moment by the National and State Emergency Management Agencies, Ministry of National Orientation, State Ministry of Information, Ministry of Environment, Ministry of Physical Planning, and Urban Development to warn people of the danger of building on flood plains and dumping of solid waste in drains and watercourses. Irregular supply of electricity is, however, a challenge. Early warning systems can also be developed through text and voice messages to targeted populations. Text messages are proven to be valuable in Sri-Lanka for delivering early warning messages.

Box 1: Sustainable Project's (SIP) Community Participation Approach

SIP-facilitated projects are Community-Driven Development (CDD) Projects where the control of decisions and resources for projects is anchored on the community**.** Project initiation rests with the community, with state and local government, private sector, and development partners playing the role of facilitators and enablers. To initiate community-driven projects are community organizations made up of community associations, traditional institutions, age grades, women organizations, youth associations, faith-based organizations, cooperatives, business-oriented associations, and professional associations.

All the programmes and projects undertaken by the SIP are a community- and participation-driven based on the following strategies (Wahab, 2007):

- "Bottomup" participatory, inclusive and collaborative approach as opposed to "topdown" technocratic approach
- Healthy and mutual working relationship between local communities, the private sector, local and State governments, and development partners.
- Initiation, design, implementation, and management of selfsustaining, peoplecentred development programmes and projects with sufficient inputs (information, ideas, and resources) from relevant stakeholders.
- Efficient and sustainable utilization/operation, management, and maintenance of physical and social infrastructure provided in communities.
- Encouragement of beneficiary participation in development projects to ensure project benefits, project continuity, and replication in other community parts.
- Routine preparation of project-specific strategy and actorspecific action plans on every community development issue facilitates healthy and sustainable project development and management.
- Development of community-based planning process builds local capacity to plan sustainable development and benefits from the insights, knowledge, and support of local communities.
- It is strengthening the local government's community development unit to mobilize communities for participatory grassroots development effectively.

There is a continuous dialogue, interaction, and close cooperation between project communities and relevant stakeholders through the SIP Technical Unit on each of the SIP-facilitated projects. However, the tempo seems to have gone down lately due to the paucity of funds for monitoring. The interactions must be sustained for project continuity in the overall interest of the communities.

Table 1: Tools for Facilitating Community Participation

Contextual analysis	Understanding stakeholders	Identifying assets and vulnerabilities	Defining needs, demands, and projects
• Interviews with key informants • Storytelling • Focus groups • Timelines • Mapping damage, risks, land uses • Activity or climatic calendars • Community mapping	• Socio-anthropological analysis • Participatory stakeholder analysis • Interaction diagrams • Venn diagrams • Proximity-distance analysis • Wealth ranking	• Capacity and vulnerability analysis • Proportional piling • Institutional analysis • Cultural asset inventories	• Surveys • Hearings • Participatory planning • Design charts • Participant observation • Preference ranking • Information centres and fairs

Source: ALNAP, 2003

6. FORMS AND LEVELS OF COMMUNITY INVOLVEMENT IN RISK MANAGEMENT DECISIONS

Forms of community involvement differ in citizen involvement in decision-making about risk management and the desired outcomes. Mercy Corps (2009) identifies seven levels or forms of participation: passive participation, participation in information giving, participation by consultation, participation for material incentives, interactive participation, active participation, and self-mobilization. At the lowest end of the spectrum is "passive participation," in which community members participate by being informed about something that will happen or has already happened; at the upper end of the spectrum is "self-mobilization," when communities organize and take the initiative independent of any external actors. ALNAP (2003) summarizes community involvement levels in decision-making into seven types, as shown in Table 2.

Table 2: Types and Level of Community Involvement in Decision Making

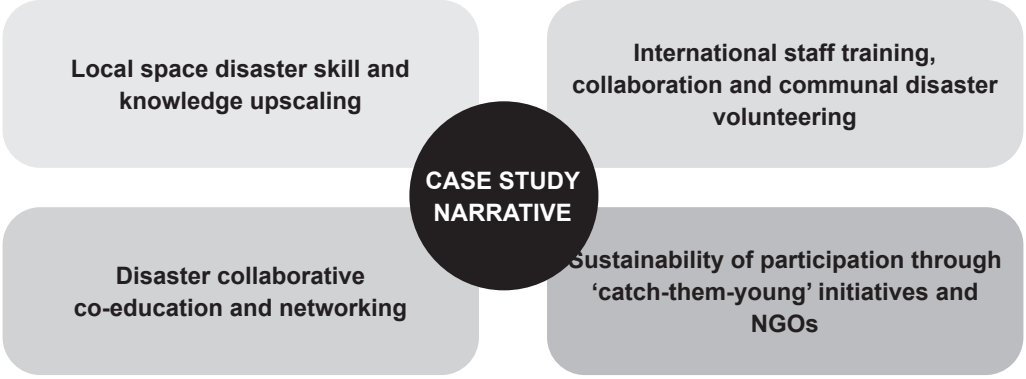
Type of participation	Role of the affected population	Level of control
1. Local initiatives	Conceives, initiates, and runs projects independently; agency participates in the community's projects.	HIGH ↑ LOW
2. Interactive	Participates in the analysis of needs and programme conception and has decision-making powers.	
3. Through the supply of materials, cash, or labour	Supplies materials and labour needed to operationalise an intervention or co-finances it. It helps decide how these inputs are used.	
4. Through material incentives	Supplies materials and labour needed to operationalise an intervention. Receives cash or in-kind payment from the agency.	
5. By consultation	Asked for its perspective on a given subject but has no decision-making powers.	
6. Through the supply of information	Provides information to the agency in response to questions but does not influence the process.	
7. Passive	I was informed of what is going to happen or what has occurred.	

Source: ALNAP (2003)

7. CASE STUDIES OF COMMUNITY PARTICIPATION IN DISASTER MANAGEMENT IN NIGERIA

Drawing from case studies in Nigeria's community participation activities, the researchers identified four main pointers that define community roles and interactions in disaster management (Figure 1).

Figure 1: Thematic Narrative of Community Participation in Disaster Management in Nigeria



Source: Authors' Technical Constructs

Local Knowledge Upscale and International Staff Training through International Collaboration with Bournemouth University Disaster ManagementCentre (BUDMC), Nigerian Red Cross Society (NRCE), and Administrative Staff College of Nigeria (ASCON).

The collaborative network between the Nigeria National Emergency Management Agency (NEMA) and the Bournemouth University, United Kingdom, was held from 1st to 5 March 2010 at Liyafa Palace Hotel, Katsina, North-Western Nigeria. The sensitization workshop aimed to acquaint the local participants and stakeholders with disaster management's fundamental knowledge and skills. This was focused on the knowledge that disasters usually occur in the local environment (community) (NEMA, 2010). The programmes also made particular emphases on disasters that are most prevalent in the North-West of the country. At the end of the workshop, participants were equipped with hands-on information about disaster management and how to prepare for, mitigate and respond to disasters in their respective areas.

International Staff Training and Collaboration with ASCON

Recognising the need for improved staff capacity (Olaniyan et al., 2008; Oteng-Ababio, 2013; Shah et al., 2019), recognised that improving staff intellectual capacity is critical to improving disaster responsiveness, policy formulation, and planning. The technical report by NEMA (2010) posited the existing transnational knowledge interaction between the Administrative Staff College of Nigeria (ASCON), Topo, Badagry, and NEMA in the training of both the staff of the agency as well as stakeholders on purely administrative, finance, and sensitization of the public on disaster management programmes. In the year 2010, there was no collaboration between the agency and ASCON; however, it is on record that the agency nominated twenty-eight (28) staff for training into various courses/ programmes at the college.

Collaboration with the Nigerian Red Cross Society (NRCE)

During the year 2010, the training department also organized the first ACEL training in collaboration with the Nigerian Red Cross Society (NRCS), as shown in Table 3.

Table 3: NEMA Collaboration Programme with NRCS

S/No	Programme/ Activity	Date	Venue	No. of Participants
1.	First-aid at work for newly recruited staff	6th-7th Aug. 2010	NEMA Headquarter, Abuja	105
2.	Advanced train the trainers on the first aid at work	21 August 2010	NEMA Headquarter, Abuja	10
3.	Intermediate disaster Management for volunteers	21st-22nd Aug. 2010	NEMA Headquarter, Abuja	102
4.	First-aid at work for AsstantDirectors and above	6th-7th Sept 2010	Onitsha Hotel Nasarawa	29

Source: NEMA Report, 2010

Volunteer Training

Disaster Management requires a multi-sector approach, and thus the need for volunteer participation and training cannot be over-emphasized. Technical participant observation reveals that the agency's staff cannot handle the emergency cases above. In this report, the training department commenced the training of volunteers on disaster management and casualty control. It is also imperative to note that NEMA has different volunteers, ranging from executive volunteers that marvel officers of different disciplines, e.g., medical doctors, nurses, engineers, and lawyers. The offer is the grassroots volunteers that are at the community level. For this purpose, the agency commenced the training of at least two hundred (200) grassroots volunteers for each local government area. A total of one hundred and two (102) executive volunteers were trained in intermediate disaster management in 2010. These sets of volunteers participated in the basic disaster management programme organized by the department. In this regard, over five hundred volunteers have been trained on first-aid and casualty handling in the local government areas.

8. NEMA/NYSC COLLABORATION PROGRAMME (SOUTH-EAST ZONE)

The National Youth Service Corps (NYSC) scheme was established by decree No.24 of 22 May 1973 to reconstruct, reconcile and rebuild the country after the Nigerian Civil war. The scheme was created with a view of the proper encouragement and development of common ties among Nigeria's youths and promoting national unity (NYSC, 2017).

The National Emergency Management Agency (NEMA) was established in Act 12 of the Federal Republic of Nigeria's constitution as amended by Act 50 of 1999, with the sole agenda of managing disasters in Nigeria. The agency has been tackling disaster-related issues through the establishment of its formidable structures within its organization Elubeku and Fatoki (2018:1)

Urban Gateway (n.d) reported that youths' collaboration and training on disaster prevention aim to improve participants' essential mobilisation and sensitisation skills on disaster reduction. It was envisaged that the corps members' training would promote community resilience to disasters at the grassroots. The programme was designed to empower the youths with community engagement skills to create disaster awareness among the people in their communities.

Quoting Elubeku and Fatoki (2018:1), "...The NEMA/NYSC partnership is intended to reduce disaster risk at the grassroots and give Emergency Management Vanguards (EMVs) a platform to enter the communities and work with the people more formally and collaboratively. The major target of the EMV is to reach out to schools, communities, motor parks, churches, and markets to propagate the message of Emergency/Disaster Management, adding that membership of EMV is open to all genuine members of the NYSC that enthusiastically offer their skills to promote emergency and disaster management principles..." Revealing this collaboration's essence, Nigeria's South-east zone participated in the 2010 NYSC orientation programme in all the states within its jurisdiction. The corps members were trained in disaster management practices and provided with training materials and kits. They were subsequently recruited as volunteers for NEMA/NYSC Emergency Management Vanguards (EMDS). The NYSC orientation exercise programme breakdown for 2010 (Batches A, B, and C) is presented in Table 4.

Table 4: NEMA Collaboration Programmes with National Youth Service Corp

State	Batch			Total				Venue
	A	B	C		A	B	C	
Abia	100	66	280	446			10/11/10	NYSC orientation camp beside LGA
Anambra	121	58	43	222	16-19/3	23 -	11/11/10	NYSC permanent orientation camp umuiaya, Oyi
Enugu	118	150	33	301	2010	24/7/10	9/11/10	NYSC orientation camp Agwu
Imo	110	86	90	286			10/11/10	NYSC Orientation camp Umuchi, Nkwere LG
Ebonyi	0	100	86	273	Nil		10/11/10	NYSC Orientation camp McGregor
Total	**449**	**460**	**532**	**1528**				**Afikpo**

Source: NEMA Report, 2010

Grassroots Emergency Volunteer Corps (GEVC)

The NEMA Zonal Office in Ebonyi State organized and inaugurated the grassroots emergency volunteer corps programme at two LGAsinthe State, namely Ezza North and Ivo. The breakdown is shown in Table 5.

Table 5: NEMA Grassroots Volunteer Corps Programme in Ebonyi State

State	LGA	Date	No. of recruited volunteers
Ebonyi	Ezza North	13-14/01/10	154
	Ivo	26-27/01/10	146

Source: NEMA Report, 2010

9. EDUCATIONAL INSTITUTIONS AS A COLLABORATIVE NETWORK: COLLABORATION WITH NIGERIAN UNIVERSITIES

The National Emergency Management Agency (NEMA) is partnering with six Nigerian Universities selected from each geo-political zone of the country to undertake postgraduate programmes in Disaster Risk Management and Development Studies. This collaboration with the universities has brought significant benefits to disaster risk management and the academia in the country as some of the universities are partnering with foreign institutions in capacity building and research and encouraging their students to undertake to research Disaster Risk Reduction. The Universities are:

University of Ibadan	South West
Ahmadu Bello University, Zaria	North West
The University of Nigeria, Nsukka (Enugu Campus)	South East
Federal University of Technology, Minna	North Central
University of Port-Harcourt	South-South
University of Maiduguri	North-East

10. NEMA'S INTERVENTION ON BRIDGING COMMUNICATION GAPS BETWEEN THE BORNO RESIDENTS AND THE MILITARY JOINT TASK FORCE TOWARD RESTORATION OF PEACE AND SECURITY IN THE STATE

The activities of gunmen within Maiduguri City and the Military Joint Task Force (JTF) to locate the gunmen and their weapons led to severe disruption of commercial activities within the Fish Markets, Motor Park notorious Jajere Wards. These actions led to the severe displacement of people and subsequent sufferings followed by NEMA's evacuation of the vulnerable people, especially women, children, and the aged out of the areas.

Due to NEMA's previous activities in the areas, several residents made passionate calls to NEMA to come to their rescue. The noticeable trust and confidence in NEMA by residents of the Old City and NEMA's ability to read the trends of unfolding events in consultations among youths and other market associations in Baga Market led to effective community consultation. Afterward, all drivers, wheelbarrow pushers, and other stakeholders had open field meetings with more than 20 people expressing their minds on the danger they were exposed to in how JTF was carrying out its operations. In response, the JTF told the gathering that many gunmen, after assaulting people, ran into the market and motor parks. However, no one in these places volunteered to cooperate with the security agencies in fishing out the gunmen. It was agreed that JTF would extend market closure to 6:00 p.m. from the last 2 to 4 p.m. closure time. It was also agreed that a security centre is established in the market to ensure that they would not harbour criminals anymore.

Jajere Push

Starting from the Baga market's success, NEMA Officials proceeded to Lajere ward, one of the most notorious flashpoints, to carry out consultation and initiate meetings between the residents and JTF. Officials met various community segments, and, in the end, the people agreed to meet the JTF if NEMA ensured their safety against arrest and harassment. The trio of NEMA, NPF, and JTF, represented by the Sector Commander, LT. Col. Eteng, met the residents of the Jajere for about 3 hours when youths and community leaders informed the JTF of harassment and floggings by JTF men. The JTF informed the people that the military got angry when residents attacked their men on patrol, and the gunmen ran into the areas without residents disclosing their identity. Above all, the JTFassured, the people in Maiduguri, only to restore security, and the residents must assist in peace restoration through Community Security by identifying criminals.

Transmitting/Dissemination of Information to JTF

Lt. Col. Eteng told the residents that their identity, either names or phone numbers, should be hidden before making calls to him on any susceptible activities or anyone in their area. He instructed NEMA to publicly dictate his phone numbers to the residents he implored to call him if any of his men misbehaved. The JTF re-deployed and transported more than 100 men from the area to other areas immediately after the meeting. Due to the flow of information around the city about NEMA initiatives and the JTF's new friendly disposition 2and rapport, a foiled attempt at robbing in the Sanari ward was successful. Community policing and the fast flow of information to the JTF encouraged the JTF to further consult in other city wards.

Challenges of Community Consultation in Risk Management in Nigeria

a. Public's low level of awareness of disaster risk

This is, perhaps, the greatest challenge facing community sensitization in risk management in Nigeria. There is generally a low level of awareness among members of the society of what constitutes a risk.

b. Unavailability of relevant data

There is presently a dearth of relevant data at the level of communities in Nigeria on the effects of various hazards that cause risk and the statistical analysis to predict future events' probability. Data gathering is still the lowest ebb for lack of funding for the necessary research and disseminating results. Several Planning, Research, and Statistics departments do not have the ability and capability to engage in meaningful data generation activities and have no fund to commission consultants to undertake it for them.

c. Inadequate budgetary allocation and funding for prevention

There is no budget dedicated to DRR in some states in Nigeria, and where there is, the budget is paltry. Adequate budgetary allocation and timely disbursement are critical for meaningful and successful consultation programmes in risk management at all levels. Across the globe, weak political will and policy direction to provide funds for disaster risk projects and plans remains a limitation towards a commitment to collective management of disasters (Cardona and Yamín, 2007; Colombia Ministerio, 2009; ISDR, 2011). The commitment of government and public stakeholders in funding communal disaster risk reduction has been critical to evaluating government commitment to place sustainability and responsive governance (UNDP, 2007; Benson, 2009) in both risk reduction plans and disaster response.

d. Lack of Disaster Management Equipment

At the state level, DRR issues are not formally taken as state responsibilities but passed on to State Emergency Management Agencies (SEMAs) with little support. The issue of equipment is accorded low priority. The emergency management agencies at the federal, State and local levels lack the necessary equipment and facilities for risk management operations, including sending early warning signals, transportation, logistics, rescue, recovery, and rehabilitation operations. The consequence of this is the inadequate, low, and ineffective mobilisation of stakeholders for risk management operations.

e. Inadequate Personnel

Risk management agencies are short-staffed (Akujobi, 2013). NEMA has little capacity to coordinate DRR issues at the state and community levels. Available personnel is grossly inadequate, not only in number but in the right category. Critical personnel, especially those with fire-fighting and swimming/diving skills, are too few. In 2011, the Disaster Vanguards and Community Support Clubs were formed in the FCT to improve resilience, reduce vulnerability, and prepare teams for disaster response at the community level. In Oyo State, Emergency Volunteers are just being established in some LGAs.

f. Unintended Consequences of Community Participation

Community consultation and eventual participation in disaster risk management empower communities, but the outcomes can be unpredictable. The participatory process may give rise to new actors or interests or create conflicts between organizations that previously worked together harmoniously (World Bank, 2010). Guiding the participation process includes making sure that people's expectations are realistic, especially if they believe that large amounts of funding are available.

g. Non-establishment of State, Local and Community Emergency Management Agencies

Some states in Nigeria have not established their SEMAs. Simultaneously, the Local Emergency Management Agencies and the Community Emergency Management Committees (the organs that should drive community activities in disaster management) have also not been established. This continually incapacitates local communal response to disaster management. Reasons for this range from lack of resources to cover costs related to start-up, continuous operations, disaster risk reduction projects, response recovery, and rehabilitation activities, weak political will, and lack of appropriate training and capacity building programmes. Consequently, many such states and local governments, and grassroots communities do not have disaster risk reduction plans and cannot organize stakeholder consultation. States have also not established a DRR Platform for coordination of mechanisms between stakeholders engaging in DRR activities. The various warnings about impending heavy rains that would result in flooding in specific towns and cities are not adequately relayed to the grassroots people, and the required sensitization programmes/activities are not conducted.

h. Building Public Understanding and Political Will

Understanding the community consultation targeted at solving public interest is critical. Bahir (2010) argued that public understanding is an imperative mechanism in disaster management's participatory development approach. Achieving this participatory synergy is, however, dependent on an active political will. There are inadequate attention and a seeming lack of interest on both the elected and career officials in prioritising risk reduction and management programmes in Nigeria. Continuous consultation in risk management programmes for sustainable community development is not given adequate and priority attention. The required strong and sustained political will on the federal, State and local governments in Nigeria is near absent.

i. Lack of Synergy and Cooperation among Emergency Management Agencies

NEMA and some SEMAs are operating as rivals and competitors trying to outdo one another instead of cooperating on risk management aspects. The Channels Television's breakfast programme, Sunrise Daily, on Thursday, 25 July 2013, reported the South West Zonal Coordinator of NEMA, Iyiola Akande, as saying that officials of his agency had been repeatedly chased away each time they attempted to undertake any form of emergency activities in parts of Lagos by LASEMA officials on more than four occasions in recent times and some NEMA officials were allegedly arrested on the instruction of LASEMA officials at the site of a collapsed building. Perhaps, LASEMA should invite NEMA and not the latter rushing to a disaster location. This situation clearly shows no good working relationship between the two agencies, which is not healthy for a sustainable risk management program.

j. Poor utilization of ICT

Information and Communications Technology (ICT) have shaped how information is disseminated to citizens and how people are connected within and between communities in all nations of the world. However, governments in Nigeria and their agencies are not taking

maximum advantage of the ICT in the risk management process, especially community mobilisation. Concerted efforts by all stakeholders are required to build on these communication tools and use them in promoting the active participation of the media for high-level mobilisation and support of the civil society.

k. Lack of Partnership

For an effective community engagement in risk management, a partnership is very crucial. Well-structured partnerships with civil society organisations, the private sector, and the three government levels are a reliable way to mobilise support and secure/attract resources for risk management programmes in Nigeria. The Sustainable Ibadan Project (SIP) established partnerships with Oyo State Ministries, Departments and Agencies, the eleven local government councils in Ibadan region, the organised private sector and philanthropists, academia and community development councils in each local government area to mobilize residents' energy and resources including funds, technical and managerial skills required in its water and waste management projects. As UN-Habitat (2013) rightly observes, partnering communities enables better response to hazards. Communities exposed to risks have a detailed knowledge of how natural hazards affect their neighbourhoods and, if so empowered, can undertake risk mapping exercises, identify cost-effective actions, protect locations within their communities, and recommend affordable and acceptable materials to build sturdy shelters.

11. CONCLUSION AND SUGGESTIONS

The increasing urbanisation in Nigerian has continually put at the fore vulnerability and risk management thinking. The risk management approach provides a more systematic and integrated approach to the prevention of incidents. It enables more significant innovation and efficiency in the design and delivery of services to the community. This paper recognises that increasing the safety of communities involves developing a broad range of strategies to increase the communities' capacity to deal with risks. These strategies are the responsibility of both the emergency service and risk management agencies, other stakeholders, and the community. The key to fostering responsibility and ensuring the sustainability of plans, policies, and strategies is dependent on the involvement of all actors in the risk management process.

The forward argument is that the government in Nigeria should embrace a risk-management process as a matter of necessity. Thus all stakeholders, led by the public risk management agencies, should adopt a community-based disaster risk management approach, which entails intensive and extensive consultation to build people's capacity of coping with disaster risks. This will reduce people's vulnerability, thereby developing safer and more resilient communities.

The government at all levels should adopt climate-related risk reduction strategies which involve protecting critical infrastructure. For risks that cannot be reduced cost-effectively, risk transfer measures such as insurance and catastrophe risk pools/bonds should be introduced in all the 36 states of the federation and the federal capital Abuja as a way of mitigating disaster impacts on physical assets. In all of these approaches and activities, adequate consultation and mobilisation of all rural and urban communities are germane to practical, proactive, and sustainable risk management. They should be accorded priority backed by strong political will and adequate funds. As a lesson of experience and best practice, the SIP framework of community consultation and sensitisation should be replicated in other communities across Nigeria.

In collaboration with the organized private sector, the three government tiers in Nigeria should tap the enormous resources available in the communities and deploy them on risk management projects. Effective collaboration is required between communities, local and national governments, NGOs, and the private sector to initiate, nurture, replicate, and upscale risk-management interventions.

All stakeholders should make conscious efforts to sensitise, educate and motivate children and youth on disaster risk reduction to meet their needs in terms of school safety, child-centred risk assessments, risk communication, and critical elements of disaster management to enable them to function as the drivers of change in the communities.

The success of any risk-mitigation programme at the community level depends on the community members' active participation who are first-hand victims of any dangers of risks. The public organised private sector and civil society groups need to collaborate to routinely empower rural and urban communities through information on how to handle the events that may occur in their communities due to disaster risks. The information should be passed across to the affected community's people through the communication channels available in their areas and in the language they speak and understand. By this, the people would protect their communities against any risk based on the acquired information, thereby reducing the number of casualties and damages likely to occur due to any risk.

REFERENCES

Active Learning Network for Accountability and Performance in Humanitarian (ALNAP) (2003). *Participation by crisis-affected Populations in Humanitarian Action: A Handbook for Practitioners,* London: Overseas Development Institute. http://www.alnap.org/resources/ guides/participation.aspx.

Adeleye, B., Popoola, A., Sanni, L., Zitta, N. and Ayangbile, O. 2019. Poor Development Control as Flood Vulnerability Factor in Suleja, Nigeria. *Town and Regional Planning*, 74, 23-55.

Adewole, I., Agbola, S. and Kasim, O. 2015. Building resilience to climate change impacts after the 2011 flood disaster at the University of Ibadan, Nigeria. *Environment and Urbanization*, *27*(1), 199-216.

Aigbavboa, C. and Thwala, W. 2011. Community participation for housing development. In Proceedings 6 Built Environment Conference 31 July -2 August 2011, JHB, South Africa ISBN:978-0-86970-713-5

Akujobi, J. 2013. National Disaster Management System in Nigeria". Paper presented at the 15th Edition of NITP/TOPREC Mandatory Continuing Professional Development Programme held in Lagos, 22-23 June.

Akukwe, T. 2019. *Spatial Analysis of the Effects of Flooding on Food Security in Agrarian Communities of South Eastern Nigeria*. Doctoral dissertation, University of Nairobi, Kenya.

Amado, A., Stancliffe, R., McCarron, M. and McCallion, P. 2013. Social inclusion and community participation of individuals with intellectual/ developmental disabilities. *Intellectual and developmental disabilities*, *51*(5), 360-375.

Archer, D., Almansi, F., DiGregorio, M., Roberts, D., Sharma, D., & Syam, D. (2014). Moving towards inclusive urban adaptation: approaches to integrating community-based adaptation to climate change at city and national scale. *Climate and Development*, *6*(4), 345-356.

Bahir, D. 2010. Sensitization and Awareness Raising Strategy. Tana Beles Integrated Watershed Development Project. Nile Basin Initiative. ORGUT 2010.

Benson, C. 2009. "Mainstreaming Disaster Risk Reduction into Development: Challenges and Experience in the Philippines." International Federation of Red Cross and Red Crescent Societies/ the ProVention Consortium.

Betsill, M. and Bulkeley, H. 2007. Looking back and thinking ahead: a decade of cities and climate change research. *Local environment*, *12*(5), 447-456.

Bhorat, H. Lilenstein, K. Oosthuizen, M and Thornton, A. 2020. Structural transformation, inequality, and inclusive growth in South Africa. World Institute for Development Economics Research (UNU-WIDER) working Paper 2020/50 ISSN 1798-7237 ISBN 978-92-9256-807-8 https://doi.org/10.35188/UNU-WIDER/2020/807-8

Burr, K. 2011. Local immigration partnerships: Building welcoming and inclusive communities through multi-level governance. *Horizons Policy Research Initiative*, 1-9.

Cardona, O and Yamín, L. 2007. Información para la gestión de riesgo de desastres. Estudio de caso de cinco países. Colombia: United Nations and Inter-American Development Bank.

Channels Television Incorporated Limited. 2013. **"**NEMA Vs. LASEMA: Emergency Agencies clash in Lagos". Sunrise Daily. Thursday, 25 July. Powered by IDS Africa Limited

Colombia Ministerio del Interior y de Justicia, Dirección de Prevención y Atención de Desastres, Government of Colombia. 2009. —Informe Nacional del Progreso en la Implementación del Marco de Acción de Hyogo. Community Based Disaster Risk Management in Vietnam. http://www.ceci.ca/assets/Asia/Asia-Publications/CBDRM-Framework.pdf (accessed on 29 June, 2013 at 1500hr).

Community Liaison Committee. 2005. Community Consultation Guiding Principles for Botany Groundwater Community Liaison Committee. Retrieved from http://www.oricabotanytransformation.com/files/pdf

Conole, G. 2012. Fostering social inclusion through open educational resources (OER), Distance Education, 33(2), 131-134

Connolly-Boutin, L. and Smit, B. 2016. Climate change, food security, and livelihoods in sub-Saharan Africa. *Regional Environmental Change*, *16*(2), 385-399.

Cuthill, M. 2001. Developing local government policy and processes for community consultation and participation. *Urban Policy and Research*, 19(2), 183-202

Cutter, S., Osman-Elasha, J. Campbell, S. Cheong, S. McCormick, R. Pulwarty, Supratid, S. and Ziervogel, G. 2012. Managing the risks from climate extremes at the local level. In: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation [Field, C.B., V. Barros, T.F. Stocker, D. Qin, D.J. Dokken, K.L. Ebi, M.D. Mastrandrea, K.J. Mach, G.-K. Plattner, S.K. Allen, M. Tignor, and P.M. Midgley (eds.)]. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change (IPCC). Cambridge University Press, Cambridge, UK, and New York, NY, USA, pp. 291-338

Ebuzoeme, O. 2015. Evaluating the effects of flooding in six communities in Awka Anambra State of Nigeria. *Journal of Environment and Earth Science*, *5*(4), 26-38.

Elubeku, T. and Fatoki, O. 2018. NYSC – NEMA CDS ILORIN. *Emergency Management Vanguards*. Available at: https://nysc-nemacdsilorin.home.blog/about-us/[Accessed 13 December 2020]

Food and Agriculture Organization of the United Nations. (2015). *The Impact of Natural Hazards and Disasters on Agriculture and Food Security and Nutrition: A Call for Action to Build Resilient Livelihoods*. Food and Agriculture Organization of the United Nations.

Forsyth, T. 2013. Community-based adaptation: a review of past and future challenges. *Wiley Interdisciplinary Reviews: Climate Change*, *4*(5), 439-446.

Gbefwi, N. 2004. Health Education and Communication Strategies: A practical approach for Community-based health practitioners and rural health workers, Lagos: West African Publisher.

Holzmann, R. and Jha, S. 2008. *Building Resilient Communities: Building Resilient Communities Toolkit.* The World Bank: Washington, D.C.

International Federation of Red Cross and Red Crescent Societies (IFRCS). 2011. Public Awareness and Public Education for Disaster Risk Reduction: A guide 302200 E 06 Geneva, 2011.

International Strategy for Disaster Reduction (ISDR). 2011. Global Assessment Report on Disaster Risk Reduction. United Nations. Geneva. Switzerland.

Knight, J. 2018 Decolonizing and transforming the Geography undergraduate curriculum in South Africa. *South African Geographical Journal*, 100(3), 271-290

Lwasa, S., Mugagga, F., Wahab, B., Simon, D., Connors, J. and Griffith, C. 2015. A meta-analysis of urban and peri-urban agriculture and forestry in mediating climate change. *Current Opinion in Environmental Sustainability*, *13*, 68-73.

McLaughlin, K. 2007. Framework On Community Based Disaster Risk Management in Vietnam. Centre for International Studies and Cooperation (CECI).

Mercy Corps. 2009. Guide to Community Mobilisation Programming" Mercy Corps, Portland. Retrieved from www.mercycorps.org

Mheta, G., Lungu, B. and Govender, T. 2018. Decolonisation of the curriculum: A case study of the Durban University of Technology in South Africa. *South African Journal of Education*, *38*(4), Article. #1635.

Nkoane, M. 2006. The Africanisation of the university in Africa. *Alternation*, *13*(1), 49-69.

Nkomo, J., Nyong, A. andKulindwa, K. 2006. The impacts of climate change in Africa. The

Stern Review on the Economics of Climate Change. Available at: http://mediadon.co.za/wp-content/uploads/2019/09/2009-Chapter_5_The_Impacts_of_Climate_Change_in_Africa-5.pdf

Oduah, C. 2019. Flood-Ravaged Nigerian Communities Unprepared for More Rains. Available at: https://www.voanews.com/africa/flood-ravaged-nigerian-communities-unprepared-more-rains [Accessed 13 December 2020]

Olaniyan, D. and Ojo, L. 2008. Staff training and development: A vital tool for organizational effectiveness. *European Journal of Scientific Research*, *24*(3), 326-331.

Olise, P. 2007. *Primary Health Care for Sustainable Development*, Abuja, Ozege Publications.

Oteng-Ababio, M. 2013. 'Prevention is better than cure': assessing Ghana's preparedness (capacity) for disaster management. *Jàmbá: Journal of Disaster Risk Studies*, *5*(2), 1-11.

Pradeep, M. and Sathyamurthi, K. 2017. The 'Community' in 'Community Social Work.' IOSR Journal of Humanities And Social Science (IOSR-JHSS), 22(9:1), 58-64

Pourazar, E. 2017. Spaces of vulnerability and areas prone to natural disaster and crisis in six SADC Countries. International Organization for Migration: Geneva, Switzerland.

Shah, A., Shaw, R., Ye, J., Abid, M., Amir, S., Pervez, A. and Naz, S. 2019. Current capacities, preparedness, and local institutions' needs in dealing with disaster risk reduction in Khyber Pakhtunkhwa, Pakistan. *International journal of disaster risk reduction*, *34*, 165-172.

Shepherd, A., Mitchell, T., Lewis, K., Lenhardt, A., Jones, L., Scott, L., and Muir-Wood, R. 2013. The geography of poverty, disasters, and climate extremes in 2030. ODI: London

Thomas, R. 1973. The Special-Purpose, Problem-Solving Approach. In Huey B. Long, Robert C. Anderson and John A. Blubaugh *Approach to Community Development Edited by Huey B. Long, Robert C. Anderson, and John A. Blubaugh.* Iowa, USA: National University Extension Association and The American College Testing Program.

Thomas, K., Hardy, R., Lazrus, H., Mendez, M., Orlove, B., Rivera-Collazo, I., Roberts, J., Rockman, Warner, B., and Winthrop, R. 2019. Explaining differential vulnerability to climate change: A social science review. *Wiley Interdisciplinary Reviews: Climate Change*, *10*(2), e565.

United Nations Inter-Agency Secretariat for the International Strategy for Disaster Risk Reduction (UNISDR). 2004. *Living with Risk: A global review of disaster reduction initiatives.* Geneva: UN/ISDR. http://www.unisdr.org/eng/about_isdr/bd-lwr-2004-eng.htm

UNISDR CRED. 2015. The human cost of natural disasters: a global perspective. Geneva: CRED.

United Nations Development Programme (UNDP). 2007. A Global Review: UNDP Support to Institutional and Legislative Systems for Disaster Risk Managementǁ. UNDP Bureau for Crisis Prevention and Recovery. Available at: http://www.preventionweb.net/files/113_GlobalReview2007.pdf

UN-Habitat. 2013. Urban Planning for City Leaders. Nairobi: UN-Habitat.

United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA). 2012. Nigeria:

Floods Situation Report. Available at: https://reliefweb.int/report/nigeria/floods-situation-report-no-1-06-november-2012[Accessed 13 December 2020]

Urban Gateway (n.d.). NEMA training 80 NYSC members on essential disaster prevention. Available at: https://www.urbangateway.org/content/news/nema-training-80-nysc-members-basic-disaster-prevention [Accessed 13 December 2020]

Van Empel, C. 2008. The effectiveness of community participation in planning and urban development. *WIT Transactions on Ecology and the Environment*, *117*, 549-556.

Victoria, L. 2009.Community-Based Approaches to Disaster Mitigation. Regional Workshop on Best Practices in Disaster Mitigation. Available at: http://www.gfdrr.org/files/documents/results%2520Management

Wahab, B. 2007. “Community mobilisation and sensitization for effective participation in project initiation, implementation, and management.” Paper presented at a 2-Day training Workshop for the Management Committee members of SIP-Facilitated Community Projects, SIP Working Group Members, and relevant Local and State Government Staff held at SIP Resource Centre, Iyaganku GRA, Ibadan, 3-4 April.

Wahab, B. and Popoola, A. 2018. Climate-Induced Problems and Adaptation Strategies of Urban Farmers in Ibadan. *Ethiopian Journal of Environmental Studies & Management*, 11(1), 31-42.

World Bank. 1996. The World Bank Participation Sourcebook. Available at: http://www.worldbank.org/wbi/sourcebook/sbhome.htm.

World Health Organisation (WHO/UNICEF). 2008. Primary Health Care, Report of the International Conference on Primary Health Care Alma Ata, Russia, 6-12 September.

World Bank. 2010. Safer Homes, Stronger Communities: A Handbook for Reconstructing after Natural Disasters. Available at: www.housingreconstruction.org.

Xinhua, 2020. Nigeria says 28 states at risk of heavy flooding. Available at: http://www.xinhuanet.com/english/2020-05/29/c_139097588.htm[Accessed 13 December 2020]

Published by the University of KwaZulu-Natal
https://journals.ukzn.ac.za/index.php/JICBE

Journal of Inclusive cities and Built environment. Vol. 1 No.1

How to cite: Mbambo S.B, Agbola S.B and Olojede O.A., 2021. The Use of IBTS To Address Housing Challenges in South Africa: A Case Study of Av Light Steel, Potchefstroom, South Africa. *Journal of Inclusive cities and Built environment*. Vol. 1 No.1, Pg 53-66.

THE USE OF IBTs TO ADDRESS HOUSING CHALLENGES IN SOUTH AFRICA: A CASE STUDY OF AV LIGHT STEEL, POTCHEFSTROOM, SOUTH AFRICA

By Mbambo S.B, Agbola S.B and Olojede O.A

Published March 2021

ABSTRACT

This paper examines how Innovative Building Technologies (IBTs) could be used to offset housing backlog and other related challenges in the post-apartheid South Africa. The key areas of assessment include affordability of the building materials, time frame for construction, and sustainability of the system. The study uses a case of AV Light Steel, along with its sister company, Tshitshirisang Construction Company, as a case study from among the active IBT system manufacturers that use light steel for housing production in South Africa. The research methodology included participatory observation as well as semi-structured interviews with system producer officials and beneficiaries of IBT products. Beneficiaries attested to the efficacy of the IBT built houses. The challenges of IBTs were found to include buy-in and marketing of products despite the many successful projects. The conclusion confirms the beneficial prospects of IBTs in solving housing backlog and related challenges in South Africa.

KEYWORDS housing backlog; Innovative Building Technology (IBT); Fortis Building System (FBS); AV Light Steel; user satisfaction; South Africa

1. INTRODUCTION

Housing provision for poor South Africans has always been accorded top priority by the government in the post-apartheid South Africa (South African Cities Network, 2014; Khambule, Nomdo & Siswana, 2018). This is with a view to addressing the lop-sidedness that characterised the apartheid housing in the country. The housing provided for black South Africans have often been on the periphery of cities reinforcing the spatial legacy of apartheid which has caused the confinement of the majority of non-white South Africans to certain areas usually located on the fringe of urban centres and excluded from service delivery, infrastructure and job opportunities (Burgoyne, 2008; South African Cities Network, 2014). In addressing this imbalance, the South African post-apartheid housing policy contains a series of strategies aimed at meeting the various housing needs of the people. The policy is thus an outcome of a relatively inclusive multi-stakeholder process of intense negotiations in the National Housing Forum (NHF) between 1992 and 1994. The mandate for the formation of the NHF at the dawn of democracy was to assess the housing needs and suggest necessary interventions on how the identified housing challenges could be resolved. The negotiations ended in 1994 with the launch of the White Paper: New Housing Policy and Strategy for South Africa which became the new housing policy and strategy for South Africa (Department of Housing (DoH), 1994).

As stated in the HWP, there was an estimated housing backlog of 1.5 million housing units, with an estimated 720,000 urban sites in need of upgrading and approximately 450,000 people in hostel accommodation that needed upgrading (Tissington, 2011). The target set by the HWP was the delivery of one million low-income government-assisted houses within a five-year period. However, in the first five-year period of the HWP, only 721,813 housing units were delivered through government-assisted programme (SA News, 2009). By 2010, the housing backlog had grown to over 2.1 million. This implies that approximately 12 million South Africans, and possibly more, were still in need of adequate housing (DoH, 1994; Tissington, 2011). Over a period of almost 10 years since the inception of the post-apartheid housing policy, several unintended consequences were noted in the existing housing delivery programme. These included perennial peripheral residential developments (as during the apartheid era), poorly constructed housing units and settlements, increasing housing backlog and the continued growth of informal settlements (Tissington, 2011). Moreover, according to Huchezermeyer (2001), the housing products delivered through the capital subsidy scheme, as recommended by the HWP, fell far short of the dignified house with reasonable living space and privacy defined as the norm in the Reconstruction and Development Programme (RDP) in 1994.

Consequently, the Department of Housing commissioned a comprehensive policy review between 2002 and 2003. This process culminated in the launch of the Breaking New Ground (BNG) programme, a comprehensive plan for development of human settlements in 2004. The plan, acknowledging that subsidised houses built till then had not become the valuable assets envisioned in the earlier policy, provided a new housing direction by enhancing the existing mechanisms of the HWP and pledged the eradication of informal settlements by 2014. More importantly, the need to focus on changing the face of the stereotypical RDP houses and settlements, through the promotion of alternative technology and design, as well as support and protection of indigenous knowledge systems, was emphasised (DoH, 2004).

Following various interventions, approximately 3.7 million housing opportunities have been created ranging from the subsidised free-standing house to the more recent social and rental housing (Robbins, 2017; The Presidency, 2014). However, the lack of access to housing remains a key reason for incessant service delivery protests in South Africa (Allan & Heese, 2009). According to the National Planning Commission (NPC) (2012), South Africa still encountered a challenge of addressing the accommodation needs of most of its population. The scale of the housing problem indicated, for example, that the growth of informal settlements in areas of economic opportunity had increased despite the delivery of RDP houses. Thus, between 2.9 and 3.6 million people still live in informal settlements in South Africa, signifying a serious housing crisis that remains unresolved over two decades of democratic dispensation (Davis, 2019).

The growing development of informal settlements has resulted in frustrations, giving rise to violent protests which have been growing in intensity (Samuel, Agbola and Olojede, 2018). The protesting civilians have grieved that they have been on housing waiting lists for many years and dissatisfied with uncertain timeframes for housing developments. The public violence monitoring project conducted by the Institute for Security Studies revealed that housing related protests ranked number six between 2013 and 2015 out of 23 types of protests accounted for (Lancaster, 2016).

This led the National Department of Human Settlements to the conclusion and declaration that the solution to the challenges facing housing provision in the country required new methods using science, technology and innovation (The Mercury, 2019). Thus, basically, IBT came to the fore in South Africa as a form of intervention given the huge housing backlog, the urgency required to meet the pressing need and the inability of the government to afford the cost of adequately housing households in the country (eNCA, 2013; Theart, 2014; Wilkinson, 2014). It also became apparent that without adequate and enthusiastic output of consumers of housing, whatever innovative methods evolved to meet the housing needs will be resisted.

Thus, this paper examines the use of innovative building technologies as a feasible method to offset housing backlog in the post-apartheid South Africa. The key focus areas include affordability of the building materials, time frame for construction, sustainability of the housing product, quality, as well as challenges faced by the production and building industry. The paper is divided

into six sections. After this introduction, section two provides a conceptual framework related to human settlements development in South Africa. Section three gives a penetrating insight into what IBT is, what it does, its advantages, government's, vacillation in the adoption and use of the system and its many problems, notably, its non-acceptance by the building industry and users of IBT products. Section four discusses the methodology used to gather data for the paper, while section five is essentially the relatively detail research results. The future of IBT and the conclusion are contained in section six.

2. SUSTAINABLE DEVELOPMENT: TOWARDS SUSTAINABLE HUMAN SETTLEMENTS

The sustainable development concept emerged in the Brundtland Report of the United Nations General Assembly (1987: 43) to mean "development that meets the needs of the present without compromising the ability of future generations to meet their own needs". The report further stated that "sustainable development is not a fixed state of harmony, but rather a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are made consistent with future as well as present needs" (United Nations General Assembly, 1987: 15). The worldwide adoption of the concept of sustainable development shaped development policies of many countries. In this regards, South Africa has aligned the provision of housing with the broad idea of sustaibale development. The BNG housing policy brought about a shift in housing provision towards a revived commitment with the people and partner organizations for the achievement of sustainable human settlements (Department of Housing, 2004).

Sustainable human settlements according to the BNG housing policy refers to "well-managed entities in which economic growth and social development are in balance with the carrying capacity of the natural systems on which they depend for their existence and result in sustainable development, wealth creation, poverty alleviation and equity" (Department of Housing, 2004: 16). The idea of sustainable human settlements is reinforced in the United Nations General Assembly (2015: 21) sustainable developments goals (SDGs) commiting to "make cities and human settlements inclusive, safe, resilient and sustainable", as per goal 11. The commitment made in this goals is that by 2030 all UN member states shall "ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums" (United Nations General Assembly, 2015: 22).

Therefore, technological advancements in the development of human settlements are crucial to support the idea of sustaible development, the goals stipulated in this regard and the braod policy vision towards sustainable human settlements. The United Nations General Assembly (1987) had earlier asserted that technology and social organization can be both managed and improved to make way for a new era of economic growth. Technology thus becomes a significant vehicle to achieve sustainable human settlements.

3. INNOVATIVE/ ALTERNATIVE BUILDING TECHNOLOGIES (IBTS/ABTS) IN SOUTH AFRICA: A CONTEXTUAL ANALYSIS

Alternative Building Technologies (ABTs), also known as Innovative Building Technologies (IBTs) or Alternative Construction Methods (ACMs), are approved, fit-for-purpose, non-traditional building technologies. They are generally deemed as being non-conventional in that they have features that are different from the traditional brick and mortar. Their use, it is believed, could help enhance the building process substantially. For instance, a 43 square metres house can be built in four to seven days using alternative materials, compared to the average thirty-day period required to build a similar unit using conventional brick-and-mortar construction (Burger, Swilling & Lengkeek, 2012). Their time-saving aspect, especially, can really be of substantial benefit (Lategan, 2012a). According to the Council for Scientific and Industrial Research (CSIR) (2013), IBTs are capable of not only reducing the time and cost of construction by as much as 35% and 41% respectively but also improving the quality, performance and sustainability of construction products. Furthermore, Balleriono (2002) argued that up to 60% of total housing delivery costs can be attributed to engineering design and construction materials, clearly justifying the investigation and implementation of more cost-effective alternatives for the sake of improving the use of financial resources.

IBTs were adopted in South Africa as a form of intervention in the housing debacle that engulfed the country consequent upon the realisation that the government did not have the wherewithal to meet the huge housing backlog (Balleriono 2002; Theart, 2014). The backlog started receiving serious attention in 1994 when the national government initiated the Reconstruction and Development Programme (RDP) and the Housing White Paper which entitles every household earning less than R3,500 a month, along with other criteria, to apply for a fully subsidized house (Centre for Affordable Housing Finance in Africa, 2012). However, the official backlog in housing kept on increasing such that by 2013, it was estimated that for every household to be housed by 2020, R800 billion would be required (eNCA, 2013; Wilkinson, 2014). This was one of the reasons why the government sought after IBTs with a view to tackling the country's housing challenge.

Over the years, IBTs have been evolving and found varied applications in different types and categories of construction in South Africa, including houses, schools, early childhood centres, clinics, student accommodation, public or institutional buildings and even roads (Mphahlele, 2015; Pakade & Odhiambo, 2016; van Wyk, 2010). As at 2015, the National Home Builders Registration Council (NHBRC) recognized as many as 40 IBT systems (Didiza, 2014; Greencape, 2015). Some of these systems employ locally available building materials while some rely solely on imported materials. Of these 40 systems, the following 22 that were already in use in the country, as compiled by NHBRC

(n.d.), are on exhibition at the Eric Molobi Housing Innovation Hub at Thorntree View (Soshanguve A) in the Tswane Metropolitan Municipality in Gauteng and these include:

1. A & D Holdings
2. Abod
3. ECO Beam
4. ECO Innovations
5. Ecodwell
6. Eezybuilt
7. EPS BYGG
8. Finnbuilder
9. Homecrest
10. Ikhaya
11. Intercon
12. Ipozi/Hoesch Bausysteme
13. Lepa
14. Moladi
15. Powerwall
16. Profica/Vela
17. Robust
18. SA Steel
19. Shiebrook 'EVG-3D'
20. Solbric
21. Styrox
22. Ubomi

Meanwhile, other systems that did not make this list are found elsewhere in the country. Of a significant mention is the Fortis Building System (FBS), a light steel frame building technology manufactured by AV Light Steel. Essentially, FBS is an improvement on the Robust Building System. However, the presence, features, contributions and products of FBS have not received sufficient acknowledgement and attention in the literature of IBTs in South Africa. A major reason for this is its relative newness. According to Media Xpose (2019) and Interact Media Defined (2019), however, this relatively new building method as well as its light steel counterparts are now both widely accepted and frequently used locally.

As determined by several factors, the appeal of IBTs is very compelling. Generally, these factors have been identified to include, among others, cost, technical input and material availability (Harrison & Sinha, 1995), intrinsic physical and chemical properties such as bulk density, direct compressive strength, water absorption capacity and thermal conductivity (Mahendran, Sivaram, Shahulhameed & Logaraja, 2016), convenience and speed (Eyiah-Botwe, Aigbavboa & Thwala, 2016), cost, time and quality, social acceptance and environmental sustainability (Botes, 2013), structural strength, durability, reusability and recyclability (Lyon, 2009). In an evaluation carried out on 40 building technologies by CSIR in 2013, it was found that the Standard Brick House (SBH) scored an aggregate of 3.6 and only placed 32nd of all the building systems according to the performance criteria derived from the Agrément Certificates. Evidently, most of the IBTs outperform the traditional brick and mortar technology (van Wyk, 2015), hence, their varied applications in different types and categories of construction in South Africa (Mphahlele, 2015; Pakade & Odhiambo, 2016; van Wyk, 2010).

However, despite the preponderant appeal of IBTs, they have not been well accepted by beneficiaries in South Africa (National Department of Human Settlements (NDHS), 2017). Generally, South Africans often feel that the IBT-built structures are inferior to other government-provided brick structures. Therefore, beneficiaries tend to believe that they are somehow devalued by the state and are given an inferior product. Thus, they have always preferred the brick-and-mortar construction approach and have been slow to react positively to IBTs (Greve, 2012). More often than not, end users usually generalise and end up mixing up the features (desirable and undesirable) of different building systems. The low level of consumer education about these technologies compounds the situation as end users generally tend towards erroneously characterising totally unknown IBT systems by the undesirable features of the less desirable ones that they know. Thus, they adjudge IBT systems as being inferior even before any objective assessment is made. This is especially the case when they lack the understanding of nonconventional housing technologies in the absence of an established market presence (Narsing, 2014) or even when the IBT home does not resemble its conventional counterparts (Botes, 2013).

According to Pakade and Odhiambo (2016), in an attempt to remove or ameliorate these problems, an IBT Indaba was hosted by the South African National Department of Public Works in 2010 and it was noted that IBTs are generally environmentally friendly, sustainable and are able to address other challenges facing housing in the country, particularly speed of delivery. Given the comparative advantages of IBTs, the Minister of Public Works instituted an IBT pilot programme in 12 rural schools, managed by the Independent Development Trust (IDT) in partnership with Agrément South Africa (ASA) and CSIR. CSIR recommended to the Presidential Infrastructure Coordinating Commission in 2013 to adopt IBT in social infrastructure delivery in South Africa (CSIR, 2013). Similarly, the cabinet also took a decision in August 2014 to direct government to use IBT in 60% of social infrastructure delivery in the country by 2017. Ordinarily, all these should have helped as a large number of IBTs would have been developed and made commercially available in South Africa. However, hitherto, a large-scale uptake of IBTs has not been recorded in the country (Burger, Swilling & Lengkeek, 2012; de Villiers, 2012; Greencape, 2015; Madikizela, 2014; Mphahlele, 2015). For instance, of the 2.9 million housing units delivered to the South African low-income earners between 1994 and 2009, only 17,000 (0.06%) were constructed using IBTs (Burger, Swilling & Lengkeek, 2012; Lategan, 2012b).

A number of reasons have been adduced for the foregoing development. Generally, there is limited detailed knowledge on the availability, costs, performance, maintenance costs and longevity of IBTs. Also, the public sector's (authorities, government and implementing agencies) knowledge of IBTs is still at its infancy. Apparently, all these have impact on the capacity to plan and manage the implementation of IBTs. Again, end-users remain

largely suspicious, distrustful about and dissatisfied with IBTs. In his study on the efficacy of innovative technologies in subsidised housing in South Africa, for instance, van Wyk (2010) found that of the households occupying RDP housing, 16.1% complained that the walls were weak or very weak and 14.9% regarded their roofs as weak or very weak. Furthermore, more than 30% of households in the Western and Eastern Cape reported problems with the quality of the roofs and walls.

Another major challenge with IBTs is that some of them exceed the cost of the normal housing subsidy available. Also, for some of the IBTs, the foreign content that has to be imported into the country by far supersedes the locally available content. In addition, labour or expertise required for the technologies is not readily available. Since most of the materials are made and standardisation is decided overseas, there is a problem with maintenance in the future. Given these circumstances and situations, upscaling seems unlikely. Meanwhile, building inspection is lacking as the country's current inspectors are not adequately equipped to do thorough inspections owing to a lack of training (Parliamentary Monitoring Group (PMG), 2011). All these challenges have been threatening the uptake of IBTs in South Africa.

With respect to service delivery, the adoption of IBTs in South Africa was in response to wide-scale poverty, poor living conditions and lack of access to basic services. Unequal and inadequate access to basic services, infrastructure and resources have been plaguing the country for years. On so many occasions, this development has led to violent demonstrations and protests (Samuel, Agbola & Olojede, 2019). As forms of intervention, relevant IBTs were introduced by non-governmental research organizations, universities, international donors, development institutions and IBT entrepreneurs. Happily, these IBTs are affordable, accessible, socioeconomically beneficial and environmentally conscious. Unfortunately, however, the current state of service delivery is not adequately responding to the need owing largely to inefficiencies in government delivery processes, unauthorized expenditure, as well as unsustainable and outdated delivery technologies. Also, there seems to be no evident link between the provision of basic services (energy, water, sanitation and housing) by the state and the appropriate use of innovative technologies (Rajab, 2016).

Furthermore, it has been observed that the availability of data on the use of IBT in South Africa is limited. This is partly because Statistics South Africa does not capture construction data based on technology types. Also, only a few IBT trade associations exist thereby impeding access to data about technology uptake in the building sector. Most of the currently available data on IBTs in the country are provided by contractors and manufacturers. In most cases, these data have not been validated by CSIR (Greencape, 2015). In addition, many low-cost housing interventions in South Africa neither detailed nor specified the IBTs employed in the delivery. Again, many IBTs whose details and specifications are disclosed are such that were implemented on an individual or small-scale basis. For this latter category, many were silent on the cost implications, which, in a number of cases, were not on the side of the low-income households. Usually, they emphasize the short-time delivery advantage. Also, the application of some IBTs was limited to public or institutional buildings where the consumers' acceptance of the technology might not count. Moreover, the applicability of several IBTs was only theorized without any practical demonstration. Some are, at most, implemented at pilot level. Thus, certain general empirical conclusions could not be drawn (Mphahlele, 2015). Generally, given the prevailing circumstances, it is quite difficult to ascertain the many claims associated with the use of IBTs in South Africa. In many cases, many sweeping generalisations are made as most end users mix the features and their perceptions of the existing systems up, one with another.

However, recent developments in the IBT trajectory in South Africa are gradually evolving, bringing about a paradigm shift in the way IBTs are perceived. More awareness is being created, especially of light steel building technologies, as an increasing number of socially acceptable top-notch housing units are springing up using the systems. In some cases, beneficiaries have their houses built at no cost to them. AV Light Steel is among the active system manufacturers which employ the Fortis Building System (FBS) in their IBT housing production.

3.1 THE AV LIGHT STEEL'S FBS: THE NEXUS BETWEEN TECHNOLOGY AND CONSTRUCTION

As the quest for IBTs systems (to meet the housing and infrastructure development of post-apartheid South Africa) gains momentum, perhaps the most promising quest is the introduction, adoption and use of the light steel frame (LSF) building technology, a technology that was little known and first used in the country about a decade ago. As reported by Media Xpose (2019), quoting Marnard, the Director of the South African Steel Frame Association (SASFA), a division of the Southern African Institute of Steel Construction (SAISC), the growth in the popularity of LSF construction locally is due to its inherent innovation and the fact that it reduces building costs in a number of ways especially when compared with the traditional building methods. According to Barnard, LSF building should not be confused with prefabricated building. In LSF building, the supporting frame is made from thin gauge, high-strength galvanized steel sheet which has been cold-formed into lip-channel sections. These sections are joined using rivets or self-tapping screws to form strong wall frames, roof trusses and floor joists. The wall panels are then clad using fibre-cement and gypsum boards, fixed using battery powered screw guns to install the self-drilling screws. Insulation (glass wool) is installed in the wall cavities to provide the thermal efficiency and enhance the acoustic properties of the walls.

Despite the evolving advantages of this technology, the adoption and use by the government and private sector have been slow in South Africa. However, of late, there has been a renewed interest in the use of IBTs and especially in the use of the LSF technology. For example, recently, the government of South Africa recommended that 60%

of all social infrastructure construction must, henceforth, be procured using IBTs. At present, there are three types or categories of IBTs in South Africa. These are the Modular (LSF); Non-masonry (no bricks, foam type), and; Non-masonry heavy weight (for example, the FBS). Using these three categories of IBTs, 105 innovative building systems have been approved by Agrément South Africa. Six (6) of these are walling systems while 95 are other forms of IBTs. However, only 41 of these IBTs are active in the market. Of these 41 active systems, 81% are modular, 12% are non-masonry light-weight steel frame while the remaining 7% are heavy-weight steel frame. These IBTs use different production systems for distinctiveness and take upper end advantages of IBT possibilities.

One of the most compelling obstacles for the uptake of IBTs especially for the rapid production of houses is the observed inherent disadvantages of the LSF buildings. Beneficiaries of LSF buildings compare their houses with the traditional brick and mortar buildings and complain of poor acoustic insulation, extreme coldness and heat in winter and summer respectively, inability to put a nail on the walls, and many other issues. It thus becomes imperative for IBTs to evolve a system or systems that would remove these complaints and still have all the advantages inherent in IBTs.

Fortunately, there are trailblazers in the IBT field using the IBT non-masonry heavy weight system called FBS which has removed and or taken care of all the foregoing observed deficiencies. As stated in the AV Light Steel (2019) company profile, the FBS is defined as an innovative lightweight steel reinforced concrete walling system consisting of expanded metal sheet panels, top and bottom C-Tracking, horizontal spaced steel reinforcing rebar, pre-welded steel mesh, shotcreted (mechanical mortar application) and plastered to complete the structure. FBS is not just any type of alternative construction technology. The system is constructed of structural steel reinforcing and quality mortar that can be designed to suit standard housing projects up to multi-level structures such as apartment buildings or office blocks. FBS is both certified by Agrément South Africa and approved by NHBRC.

4. METHODOLOGY

Both primary and secondary data were used for this paper. A large cadre of literature, published and unpublished were used to present a contextual analysis of IBTs as contained in section two. These included archival sources and especially government publications, reports and speeches on IBTs.

The primary data included on-site visit to AV Light Steel fortis building system manufacturer in Potchefstroom for onsite analysis. This was supplemented with interviews with the Chief Executive Officer (CEO) and technical production staff for the critical appraisal of the production process, especially the validation of the supposed advantages of the system over traditional brick and mortar system.

The study used purposive sampling, which according to Robinson (2014), is an intentional selection of informants based on their ability to elucidate a specific theme, concept, or phenomenon. The company was purposively selected based on its unique internal organization as it combines both IBT manufacturing and construction. Thus, it has the ability to elucidate on the application of the IBT system to houses as finished products. The purposive selection comprised two IBT housing beneficiaries selected from Dikgwale Village and Frankfort in Mpumalanga and Free-State Pronvinces respectively. Both beneficiaries had the houses they currently occupy built using the fortis building system. The houses are part of the projects piloted by National Department of Human Settlements to test the efficacy of the IBT system. Since one of the major problems of IBTs is the reluctance or non-acceptability of its products by would-be consumers, data were sourced from interviews with occupants of IBT houses in two different locations in two provinces i.e. Mpumalanga and Free State. All these data were analysed and presented thematically following a qualitative method in different subsections of section three of this paper. The section in the first part of research results profiles the AV Light Steel fortis building system as a case study analysis of the prospects and problems of IBT in South Africa especially the social acceptability problem which has impeded the uptake of the system.

5. RESEARCH RESULTS

5.1 ORIGIN AND EVOLUTION OF AV LIGHT STEEL

The company's name derives from the original owners, Andrea and Vincent (AV). It was bought over in August 2017 by Ms Lebogang Zulu, the current Chief Executive Officer (CEO) and a former Trainee Station Manager with the Electricity Supply Commission (ESCOM/ ESKOM). Ms. Zulu settled for FBS after her preliminary research, analysis and evaluation revealed its peculiar advantages as an improvement on the Robust IBT system which, hitherto, was the oldest innovative building system in South Africa. As a committed engineer and having decided to make a significant difference in the IBT sector of the South African construction industry, she founded the Tshitshirisang Construction Company to use FBS for its construction projects.

As a new but informed professional and a woman, finance to equip the newly acquired factory was a problem. However, with her doggedness and persistence, funding was obtained from multiple sources within fifteen very hard negotiating months. For example, the Department of Trade and Industry gave a grant of R40million (as a black industrialist in mining and manufacturing), the Industrial Development Corporation (IDC) gave a loan of R61million and ABSA bank, R15 million. With funding secured and with an operational factory, the company has, within two years of its existence, completed projects in different categories of infrastructure such as schools, classrooms, houses and high-rise buildings in different provinces to a total contract value of about R211,265,806.75. Thus, the company has turned its initial asset base of R2 million to R84 million and its turnover has increased from R9 million to R13 million.

5.2 ATTRIBUTES AND ADVANTAGES OF FBS

The compelling advantages of FBS are many and varied, and these are what make the company a first choice and

a trailblazer in the production of IBT products and their uses. According to the brochure of the company and reinforced by Ms Zulu, the AV Light Steel CEO, in her Corporate Profile, 'A Woman Made of Steel', in the September, 2019 issue of *Leadership*, FBS is not just any type of IBT. The system is constructed of structural steel reinforcing and quality mortar that can be designed to suit standard housing projects up to multi-level structures such as apartment or office blocks. A standard FBS wall with a 25Mpa mortar mix can withstand 30 tons/lm, making this wall not just unique in the IBT sector but in the built environment as a whole. The system has successfully been used in multi-level projects throughout its 20-year existence.

The products of the company are lightweight and highly compacted, making transport more cost effective (8,400m^2 of wall core panels fits on a super link truck, equivalent to 73 Breaking New Ground (BNG) houses) with commendable performances in fast-track construction, fire resistance, thermal performance and others. For example, the FBS core panels are light weight and are easily manoeuvrable around the construction site, helping to speed up the construction process, has greater throughput with the same amount of labour with 95% of the workforce being unskilled and the mortar is mechanically applied eliminating the timeous orthodox application by hand. In addition, no beam filling is required. This eliminates another conventional system time-delay function while the services are applied before the mortar application. Thus, there is no need for time wastage chasing after service providers.

The products are classified type FR (non-combustible) with a fire transferable resistance rating of 60 minutes and 4 hours of structural resistance with added 20mm perlite plaster. In thermal performance, the system has an R value of between 0,422m²K/W and 0,620m²K/W with perlite application on external walls and insulated ceiling materials vs the R value of conventional buildings ranging between 0,200m²K/W0, 350m²K/W. With regard to strength, the mortar mix design can be adjusted to suit the structural MPa strength as required by the engineer. The products have been judged to be far more resistant against structural cracks caused by ground movements as well as forces of nature such as earthquakes, tornados and hurricanes. There is also an additional feature in these products with the high load bearing strength of 30 tons/lm on a standard 115mm external wall ratio of 25MPa – 30MPa and thus eliminating the need of columns in a multi-level structure.

The products are immune to permanent water damage and are impervious to high humidity/moisture. It does not warp, crack or split easily. FBS wall strength is between 25 and 30 MPa compared to standard brick wall of 7 MPa. They are versatile because of their flexibility; curved and any other shaped walls can be built but they are also in form of monolithic single diaphragm structure. This makes the structure impervious to any form of structural crack and gives it very high lateral strengths that allows for the elimination of columns up to four storeys high. Perhaps more consoling is its acoustic performance at 50db airborne sound insulation between adjoining rooms on a 100mm thick internal wall.

It is not surprising therefore that AV Light Steel and its affiliated sister company, Tshitshirisang are accredited, certified and valued members of: Agrément South Africa (ASA), National Home Builders Registration Council (NHBRC), Construction Industry Development Board (CIDB), Black Business Council (BBC), Fortis Building Systems (FBS) and the Southern African Light Steel Frame Association (SALSFA).

However, as observed in Section Two of this paper, one of the perennial problems with IBT uptake in SA is the wrong perception of IBT products by the end-users/consumers of IBT. This paper then sought the perception of the end-users of the AV Light Steel system.

5.3 BENEFICIARIES' PERCEPTIONS OF FBS-BUILT LOW-INCOME HOUSES

With a view to capturing the perceptions of beneficiaries who have lived in AV Light Steel's products, visits were conducted to two project sites where the users/beneficiaries were interviewed. The projects are located in Dikgwale Village, Mpumalanga and Frankfort, Free State. As determined by their experiences, the beneficiaries' perceptions of AV Light Steel's products were assessed.

5.3.1 THE DIKGWALE VILLAGE PROJECT, MPUMALANGA

Plates 1a & 1b: The Dikgwale AV Light Steel House

The housing unit was built using the Fortis Building System (FBS) by AV Light Steel (Plates 1a & 1b). The two-bedroom unit is 45 square metres in size. It has a kitchenette attached to the sitting room and a separate bathroom in which there is an enamelled bathtub, a stand-alone wash hand basin and a waterless toilet unit (also manufactured by AV Light Steel) (Plates 2a & 2b). There are two external wooden doors, each measuring 2.1 metre by 1 metre. There is cross ventilation and the thermal performance, as perceived, was good. The floor is tiled, and the house is moderately furnished. There is a terrace of about 80 centimetres round about the house. The design was adopted from the government's RDP prototype design.

Plates 2a & 2b: The AV Light Steel Waterless Toilet and Vent System

The beneficiary, Gogo (Granny) Lisbert Mdileni-Chawuke, on her experiential perception and overall acceptability of the AV Light Steel house enthused:

I had been living in a shack since 1986 until I was given this FBS house this year (2019). This house is too much different. I thought they would build me an RDP house, but I later realised it is built with something I never knew.

The shack she referred to is as shown in Plate 3. On the waterless toilet, thermal performance, general performance of the house and her acceptance of the IBT/FBS product, Mrs Mdileni-Chawuke said:

My toilet—I love it so much! I have no problems with it. Inside the house, it is very cool. I have not encountered any problems with this house. I would be very happy if other people—my relatives, friends and community—can receive houses built through this system. My relatives from Venda and Giyane visited me and stayed for a whole week. They came here just to see this house! They said that they had never seen such a beautiful house built by government and that they also want to have this type of house. The people in this area now want to have a house like this one I have. My life is better now since I am living in this house.

Plate 3: The Shack in Dikgwale

On her satisfaction with the housing unit and the improvement brought about in her standard of living, she remarked that:

Today, with this house, I feel like Chawuke [my husband] has been raised from death! This house is too different from brick and mortar. Door size is bigger than what obtains in the normal RDP house. When I received the house, it was fitted with everything—furniture inclusive. I did not have to move in anything from my old shack.

5.3.2 THE FRANKFORT PROJECT, FREE STATE

Just like the Dikgwale Village house, the house in Frankfort is an FBS-built two-bedroom unit measuring 45 square metres (Plates 4 & 5). Also, it has a kitchenette attached to the sitting room. However, it is a much more improved design with the kitchenette bigger and much more spacious than the house in Dikgwale. The kitchenette is also fitted with wall cabinets (Plate 6). There is a separate bathroom with an enamelled bathtub, a stand-alone wash hand basin and a flush toilet (water closet), as there is water supply in Frankfort.

Plate 4: The AV Light Steel House in Frankfort

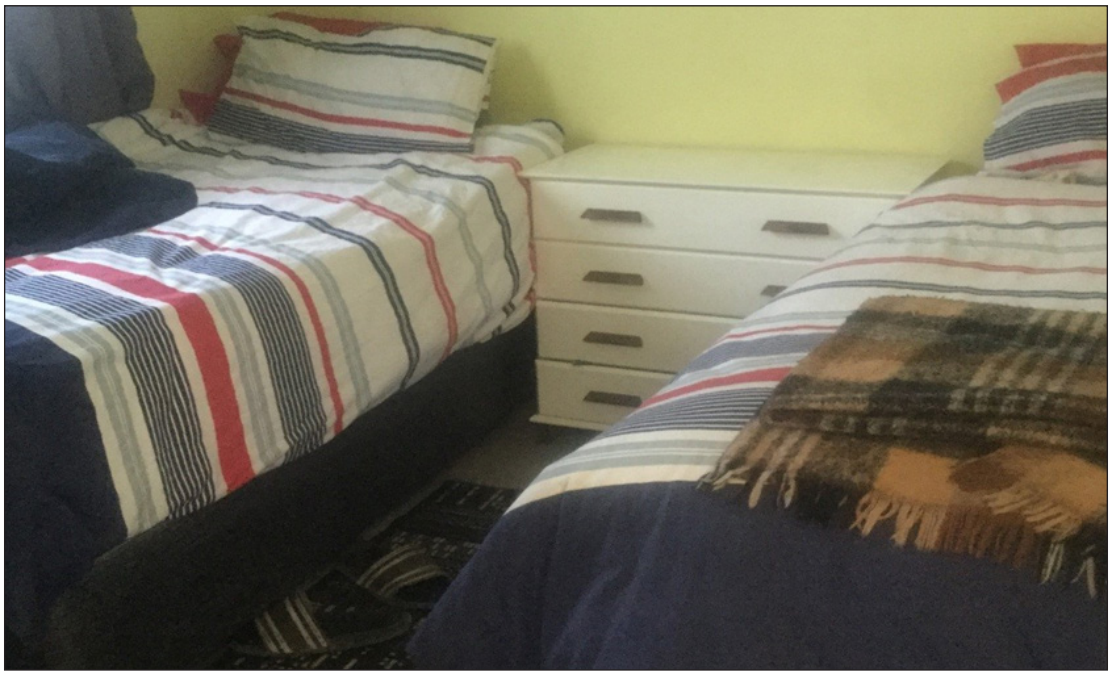


Plate 5: The Double-Bed Room in the AV Light Steel House in Frankfort

The entire house is tiled and moderately furnished. A slim, beautifully finished wooden board is also fitted to the sitting room wall on which a flat-screen television is hung. There are two external doors and there is cross ventilation. There is a terrace of about 80 centimetres round about the house. In addition, the house is fenced and provided with a sliding gate. Between the gate and the main entrance, there is semi-hard landscaping done with coarse gravels. Also, there is a solar-powered geyser carefully installed on the roof. The shack in which the beneficiary used to live is also retained in the compound (Plate 7).

Plate 6: Kitchen Cabinets in the Frankfort AV Light Steel House

Plate 7: Shack That Served as Former Dwelling Unit in Frankfort

The housing beneficiary, Gogo (Granny) Maria Mashinini, on her experiential perception and overall acceptability of the AV Light Steel house observed that:

After staying in a shack (plate 7) for years, I am now living very happily in a nice house. They gave me a house with furniture. This house is different from others. This house is from God; it is blessed, and it is built differently. My life has changed since I started staying in this house. I have even gained weight! I have not encountered any problems with this house. My only problem here has to do with the Nyaope guys (drug addicts). They have been troubling me so much. They scaled the fence into the compound, vandalised the copper water pipe and stole it along with other items from the yard.

On the social acceptability of FBS as an IBT, Mrs Mashinini recommended that:

That family, friends and community get this same house—but this one is for me only. Now, the people of this community are saying they also want this same house. They can't help wondering how and why I am the only one who got this type of house. I would like the government to build with this system for other people in need of housing.

On the assessment of thermal performance of the house, she said:

The interior of this house is very cool in hot weather conditions. It feels like there is a fan inside the house. I don't even need to go out and sit in the shade; I just sleep down here on the floor because the house is so cool.

There is no doubt that the beneficiaries of FBS, as an example of IBT, are satisfied with the AV Light Steel products. This is an indication and a pointer to the capability of the system in meeting the nation's housing need, especially for the benefit of the low-income households. However, a continuous assessment should be carried out over time, since the projects are not old enough to make definitive conclusions from the clients' assessment done. It is only significant to highlight that the low-cost houses delivered through the FBS have indicated a high potential and huge uptake of IBTs in South Africa for an accelerated reduction in housing backlogs in South Africa.

5.4 THE CHALLENGES OF IBT SYSTEM PRODUCERS AND CONTRACTORS

According to Ms Zulu, in an interview with her on the 16th October 2019 on the AV Light Company premises in Potchefstroom, the main challenge which faced in the IBT production and construction industry is the buy-in by and marketing of the IBT products to the government and the private sector. Consumer education is significantly low as most South Africans cannot really distinguish between one IBT system and the other. Accordingly, they generalise their frustrations and/or displeasure at one to characterise the entire IBT systems market. For example, the AV Light Steel has been persuaded, even by government agencies, to produce samples of their IBT products to prove efficacy of their system. Meanwhile, the company has many projects already delivered to these same agencies the commissioning of which had representatives of several government agencies in attendance.

Also, the quantum of subsidies to aid and help IBT product manufacturers, and contractors have been small and insufficient. This has limited the number of capable entrants into the IBT industry. In addition, there is no synergy between system producers/developers and contractors. The synergy and beneficial interface between AV Light Steel (system manufacturer) and Tshitshirisang (contractor) is very unusual and uncommon in the industry. Yet, it is this type of synergy that is needed for the beneficial growth and development of the IBT industry in the country. This is particularly needed to honour the government adoption that 60% of its infrastructure must be undertaken using the IBT systems.

One of the challenges from the clients' opinions is the need for continuous assessment of the IBT houses as the uptake in IBT uses gather momentum. Such dedicated assessments will aid product improvements and customers' satisfaction.

6. ANTICIPATING THE FUTURE AND CONCLUSION

It could thus be concluded that the future of IBTs is bright and the prospects of its use in meeting the huge backlog of houses in SA is very promising. IBT is a much essential building method in South Africa as its constitutes attributes that respond directly to shortcomings in the provision of low-cost housing such as its affordability, enhancing housing quality, ecological friendliness, and accelerated speed of housing construction and provision for the most needy. However, though the government considers IBT system as a solution to the unaffordable housing backlog, the emerging IBT industry has not received significant support or endorsement.The system shows efficacy of solving poor housing quality products which have been costly to government and offers sustainable solution to meet the broad policy vision of the development of sustainable human settlements. With government's insistence and encouragement and a sincere intensive drive at adoption of IBT product consumers as to its quality and durability, the future of IBTs as a major player in the South African housing production process is guaranteed.

The future goal of AV Light Steel is to build the replica of the Potchefstroom factory in at least three other provinces in the next three to five years. This, definitely, would have multiplier effects on the economies of those provinces, the uptake of the IBT, and a huge dent on the infrastructure backlog in the country. Therefore, for the government to fully enroll the IBT building system, a lot of work is required to educate and convince stakeholders about the efficacy of the system. The building sector alone needs to be taken into confidence. This should include investors such as banks and end-users. Since one of the problems of IBT uptake in the country is the dearth of qualified and certified labour in the art and craft of IBTs, government must partner with active IBT system producers like AV Light Steel to capacitate more contractors. This will obviously have a multiplier effect on the labour supply for the IBT industry in South Africa. In addition, there is a need to intensify an inclusive approach in the uptake of IBTs to favour interests of all stakeholders and ensure a smooth application of the system in solving challenges faced in human settlements development and management in South Africa.

REFERENCES

Allan, K., & Heese, K. (2009, August 30). 'Burning issues at the core of community protests', *Sunday Independent*. Available at: http://www.municipaliq.co.za/publications/articles/sunday_indep.pdf [Accessed on: 30 October 2019]

Ampofo-Anti, N. (2017). Delivering construction projects using using innovative building technologies. Durban: 11th Built Environment Conference, 6-8 August.

AV Light Steel (Pty) Ltd (2019). *AV Light Steel Innovative Building Systems*. Company Brochure. Potchefstroom: AV Light Steel (Pty) Ltd.

Ballerino, C. C. (2002). Building Materials and Engineering Design for Low-Income Housing Projects, Port Elizabeth, South Africa. Unpublished MSc Dissertation. Royal Institute of Technology. Stockholm.

Botes, A. W. (2013). A Feasibility Study of Utilising Shipping Containers to Address the

Housing Backlog in South Africa. Unpublished Master's Thesis. Faculty of Engineering, Stellenbosch University, Stellenbosch.

Burger, J., Swilling, M., & Lengkeek, J. (2012). A Sustainable Housing Calculator: Demonstrating the Long-Term Benefits of Sustainable Building Interventions. *Human Settlements Review 1*(1), 101-117.

Burgoyne, M-L. (2008). Factors Affecting Housing Delivery in South Africa: A Case Study of the Fisantekraal Housing Development Project, Western Cape. Master's Thesis (Community and Development), Department of Sociology and Social Anthropology, Faculty of Arts and Social Sciences, University of Stellenbosch. Stellenbosch, South Africa. Available at: http://scholar.sun.ac.za/handle/10019.1/2862

Centre for Affordable Housing Finance in Africa (2012). *2012 Yearbook: Housing Finance in Africa.* Centre for Affordable Housing Finance in Africa.

CSIR (2013). *Innovative Building Technology: Value Proposition*. Pretoria: Council for Scientific and Industrial Research.

Davis, R. (2019). Provision of adequate land and housing has been one of democratic SA's failures. Available at:https://www.dailymaverick.co.za/article/2019-04-26-provision-of-adequate-land-and-housing-has-been-one-of-democratic-sas-failures/ (Accessed on 07 November 2019).

Department of Housing. (1994). *White Paper: A New Housing Policy and Strategy for South Africa.* Pretoria.

Department of Housing. (2004). *Breaking New Ground: Comprehensive Plan for Housing Delivery.* Cape Town: National Assembly.

de Villiers, W. I. (2012). Regulation of Alternative Building Materials and Systems in South Africa. Paper presented at The Southern African Housing Foundation International Conference, Exhibition & Housing Awards. 16-19 September. Cape Town, South Africa. Available at: http://www.sahf.org.za/Images/2012%20Proceedings/Papers/DE%20VILLIERS_WIBKE.pdf [Accessed on: 28 October 2019].

Didiza, S. (2014). Market Intelligence Report: Built Environment. Available at: https://www.greencape.co.za/assets/Uploads/GreenCape-MIR-Built-Environment.pdf [Accessed on: 30 October 2019]

eNCA (2013, October). R800-billion needed to solve housing woes by 2020. Available at: http://www.enca.com/south-africa/r800-billion-solve-countys-housing-woes-2020 [Accessed on: 30 October 2019]

Eyiah-Botwe, E., Aigbavboa, C. O., & Thwala, W. D. (2016). Adopting Innovative Methods in the Ghanaian Construction Industry. Available at: http://hdl.handle.net/10210/216984. [Accessed on: 30 October 2019]

Greencape (2015). *Greening the Construction Sector: 2015 Market Intelligence Report.* Cape Town: Greencape. Available at: https://www.greencape.co.za/assets/MIRs-2015/GreenCape-Market-Intelligence-Report-2015-Greening-the-Construction-Sector.pdf. [Accessed on: 28 October 2019]

Greve, N. (2012, July 27). South Africa Begins to Embrace New Building Techniques in Bid

to Beat Homes Backlog. *Creamer Media's Engineering News*. Available at: http://www.engineeringnews.co.za/article/building-on-bricks-2012-07-27/rep_id:4136 [Accessed on: 20 October 2019]

Harrison, S. W., & Sinha, B. P. (1995). A Study of Alternative Building Materials and Technologies for Housing in Bangalore, India. *Construction and Building Materials, 9*(4), 211-217.

Hartmann, M. (2018, December 24). *A solution to SA's housing crisis is right under our noses*. Available at:Fin24: https://www.fin24.com/Opinion/a-solution-to-sas-housing-crisis-is-right-under-our-noses-20181224-2. [Accessed on: 20 October 2019]

Huchzemeyer, M. (2001). Housing for the poor? Negotiated housing policy in South Africa. . *Habitat International 25,* ., 303-331.

Interact Media Defined (2019, May 6). 'Reframing' construction in Southern Africa. Available at: http://saaffordablehousing.co.za/reframing-construction-in-southern-africa/. [Accessed on: 25 October 2019].

Khambule, I., Nomdo, A., & Siswana, B. (2018). The Social Cost of Violent and Destructive Service-Delivery Protests in South Africa. *Human Sciences Research Council (HSRC) Review, 16*(4), 26-27. Available at: http://www.hsrc.ac.za/uploads/pages/1278/HSRC%20Review%20December%202018_fa.pdf [Accessed on: 25 October 2019]

Lancaster, L. (2016). *At the heart of discontent: Measuring public violence in South Africa.* South Africa: Institute for Security Studies.

Lategan, L. G. (2012b). Chapter Eight: Alternative Housing Design and Construction

Proposals. M.Art et Scien (Urban Planning) Dissertation, North-West University, Potchefstroom Campus, South Africa. Available at: https://dspace.nwu.ac.za/bitstream/handle/10394/9517/Lategan_LG_Chapter_8.pdf?sequence=9&isAllowed=y. [Accessed on: 01 November 2019]

Lategan, L. G. (2012a). A Study of the Current South African Housing Environment with Specific Reference to Possible Alternative Approaches to Improve Living Conditions. Unpublished M. Art et Scien Dissertation (Urban Planning), North-West University, Potchefstroom.

Leadership (2019, September). Leadership Focus: Corporate Profile. *Leadership* Magazine, Edition 407, September, pp. 61-65.

Lyon, M. (2009). A Comparative Analysis between Steel, Masonry and Timber Frame Construction in Residential Housing. Unpublished BSc Thesis. Faculty of Engineering, Built Environment and Information Technology, University of Pretoria.

Madikizela, B. (2014). Keynote Address: Championing ABTs in Affordable Housing in the Western Cape - The Case of Delft. Paper Presentation by the Western Cape Minister for Human Settlements at the African Union for Housing Finance Conference, November 17-19. Cape Town. Available at: http://www.auhf.co.za/wordpress/assets/MinisterMadikizela.pptxsm1.pdf

Mahendran, K., Sivaram, T., Shahulhameed, M., & Logaraja, R. (2016). A Comparative Study on Various Building Blocks as an Alternative to Conventional Bricks. Paper presented at the International Conference on Emerging Trends in Engineering and Management Research, Anjaneri, Nashik (MS). Available at: http://data.conferenceworld.in/ICETEMR/P1097-1109.pdf

Media Xpose (2019, March 25). 'Reframing' construction in Southern Africa: Light steel frame building offers quality, energy-efficient and affordable construction which is growing in popularity. Available at: https://mediaxpose.co.za/2019/03/25/reframing-construction-in-southern-africa-light-steel-frame-building-offers-quality-energy-efficient-and-affordable-construction-which-is-growing-in-popularity/ [Accessed on: 25 October 2019]

Mphahlele, C. (2015). Key Performance Indicators for Project Success on Innovative Building Technology Projects. Paper delivered at the Smart and Sustainable Built Environment (SASBE) Conference 2015. University of Pretoria, Pretoria, South Africa. Available at: https://researchspace.csir.co.za/dspace/bitstream/handle/10204/9901/Mphahlele_16270_2015.pdf?sequence=1&isAllowed=y

Narsing, Y. (2014). A Demand Led Approach to Affordable Housing. Paper presented at the African Union for Housing Finance Conference. November. Cape Town. Available at: http://www.auhf.co.za/wordpress/assets/YogeshNarsing.pptxsm.pdf

National Planning Commission. (2012). *National Development Plan 2030: Our Future-make it work.* Pretoria: The Presidency.

NDHS (2017). *"Building Our Future Today – Ensuring Liveable Spaces for Every Family".*

Concept Note for Commission 4. 2017 National Human Settlements Development Summit.

NHBRC (n.d.). *Eric Molobi Housing Innovation Hub*. Pretoria: NHBRC.

Osman, A. (2017). *South Africa urgently needs to rethink its approach to housing*. Available at:https://mg.co.za/article/2017-06-05-south-africa-urgently-needs-to-rethink-its-approach-to-housing (Accessed on 06 November 2019)

Pakade, C. B. J. & Odhiambo, J. (2016). The Contribution of Alternative Building Technologies (ABTs) in the Transformation of the Construction Industry in South Africa. Presentation at the National Stakeholder Forum (NSF) on the Transformation of the Construction Industry, 10 March. Available at: http://www.cidb.org.za/publications/Document%20Store/cidb%20National%20Stakeholder%20Form%20Meeting%20Presentation%20on%20-%20The%20Role%20of%20ABTs%20in%20The%20Transformation%20(29-03-2016).pdf

PMG (2011, February 15). Alternative Building Technology (ABT): A Progress Report.

Rural Infrastructure Programme and Innovative Housing Technologies: Department of Human Settlements Briefing. Available at: https://pmg.org.za/committee-meeting/12555/

Presence, C. (2014). SA's 'sad story of housing' - Lindiwe Sisulu. Available at: https://mg.co.za/article/2014-07-15-sas-sad-story-of-housing (Accessed on 07 November 2019)

Rajab, A. (2016, July 4). The Adoption of Appropriate Technology in Service Delivery in South Africa. Paper presented at the Planning Africa Conference 2016, 3-6 July, Johannesburg, South Africa. Available at: http://stepsa.org/pdf/planning_africa_2016/Rajab_planning%20africa%2003072016.pdf

Robinson R.S. (2014) Purposive Sampling. In: Michalos A.C. (eds) Encyclopedia of Quality of Life and Well-Being Research. Springer, Dordrecht. https://doi.org/10.1007/978-94-007-0753-5_2337. [Accessed on: 15 November 2020]

Robbins, G. (2017, September 21). South Africa's Housing Challenge Seen through the Lens of Its Third Largest City. *The Conversation*. Available at: http://theconversation.com/south-africas-housing-challenge-seen-through-the-lens-of-its-third-largest-city-83460. [Accessed on: 07 November 2019]

SA News. (2009). Over 2.6mil houses built since 1994. Available at:South African News Agency: https://www.sanews.gov.za/south-africa/over-26mil-houses-built-1994 (Accessed on 08 November 2019)

Samuel, K. J., Agbola, S. B., & Olojede, O. A. (2019). Contestations and Protests in Human Settlements Service Delivery in South Africa: The Past as Prologue. Paper presented at the South African Association of Public Administration and Management (SAAPAM) Conference, University of Mpumalanga, Nelspruit, South Africa, 14-17 May.

South African Cities Network (2014). *From Housing to Human Settlements: Evolving Perspectives*. Braamfontein: South African Cities Network.

Spinks, C. (2001). A new apartheid? Urban spatiality (fear of) crime and segregation in Cape Town, South Africa. London: Development Studies Institute.

Theart, P. J. (2014). Development of a Multi-Criteria Assessment Tool to Choose between Housing Systems for the Low Cost Housing Market. Unpublished MS. Eng. Thesis. University of Stellenbosch.

The Mercury. (2019, January 31). Using Technology to Help Solve Housing Problem. Available at:IOL: https://www.iol.co.za/mercury/network/using-technology-to-help-solve-housing-problem-19044648

The Presidency (2014). *The Presidency Annual Report 2013/2014*. Pretoria: The Presidency, Republic of South Africa. Available at: http://www.thepresidency.gov.za/download/file/fid/1018 [Accessed on: 28 October 2019]

Tissington, K. (2011). *A Resource Guide to Housing in South Africa 1994-2010: Legislation, Policy, Programmes and Practice*. Cape Town: Socio-economic Rights Institute of South Africa.

United Nations General Assembly (1987). Report of the World Commission on Environment and Development: Our Common Future. United Nations: Brundtland. Available at: https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf

van Wyk, L. (2010). The Efficacy of Innovative Technologies in Subsidised Housing in South Africa: A Case Study. Proceedings of CSIR 3rd Biennial Conference 2010, Science Real and Relevant, 30 August-1 September, CSIR International Convention Centre, Pretoria. Available at: www.info.gov.za/aboutsa/housing.htm

van Wyk, L. (2015). Accelerating the Green Agenda through Innovative Building Technologies. Available at: http://researchspace.csir.co.za/dspace/handle/10204/8310

Wilkinson, K. (2014). *Factsheet: The Housing Situation in South Africa*. Available at https://africacheck.org/factsheets/factsheet-the-housing-situation-in-south-africa/ [Accessed on: 30 October 2019]

Published by the University of KwaZulu-Natal
https://journals.ukzn.ac.za/index.php/JICBE

Journal of Inclusive cities and Built environment. Vol. 1 No.1

How to cite: Ogunmodede, O and Olufemi, O. 2021. Safeguarding the Food Basket from Oil Pollution in Nigeria: Post-Oil City Perspective. *Journal of Inclusive cities and Built environment.* Vol. 1 No.1, Pg 67-79.

SAFEGUARDING THE FOOD BASKET FROM OIL POLLUTION IN NIGERIA: POST-OIL CITY PERSPECTIVE

By Ogunmodede, O and Olufemi, O

Published March 2021

ABSTRACT

The ecological and health damage of oil spills and pollution in Nigeria is unquantifiable and the systematic degradation of the environment, health, livelihoods and food system of people residing in oil spill areas is visibly intolerable. This paper using secondary data, reviews literature on oil spills and contends that decades of environmental inequities significantly contribute to oil spills, environmental toxicity and contamination, and impoverishes the food basket and people's health in the Niger Delta region in Nigeria. Oil spill is the release of oil or liquid petroleum hydrocarbon into the natural and built environment. Findings revealed oil spills results in the collapse of the local economy, impact negatively on lives, livelihoods, stifles food production and food security. Oil spills also have consequential health implications both for human in the region and the ecosystems. Paper suggests that in the post-oil city an inclusive approach that detoxifies the environment, preserve livelihoods and health, restores human dignity and promotes environmental justice will help rebuild and safeguard water and food security.

KEY WORDS Food Basket, Food security, Environmental Justice, Oil Spill, Pollution

1. INTRODUCTION

Oil pollution in the Niger Delta is an ongoing chronic disaster and an environmental adversity with no end in sight. There entails little or no support for communities and individuals that are affected (Ovadia, 2013; Obi, 2010). The oil industry in the Niger Delta is run by joint ventures involving the Nigerian government and subsidiaries of multinational companies such as Shell, Eni, Chevron, Total and ExxonMobil (Amnesty International, 2018). Shell has been pumping oil from the Niger Delta since 1958 and it remains the largest multinational oil company operating in the region. The chronic nature of the oil pollution and its associated environmental and social impacts have an insidious impact on one's physical health (sustained systemic toxicity by oil-related contaminants) and mental health (such as increased risk for high levels of distress) which are different from those of discrete traumatic events (Kolassa et al., 2010).

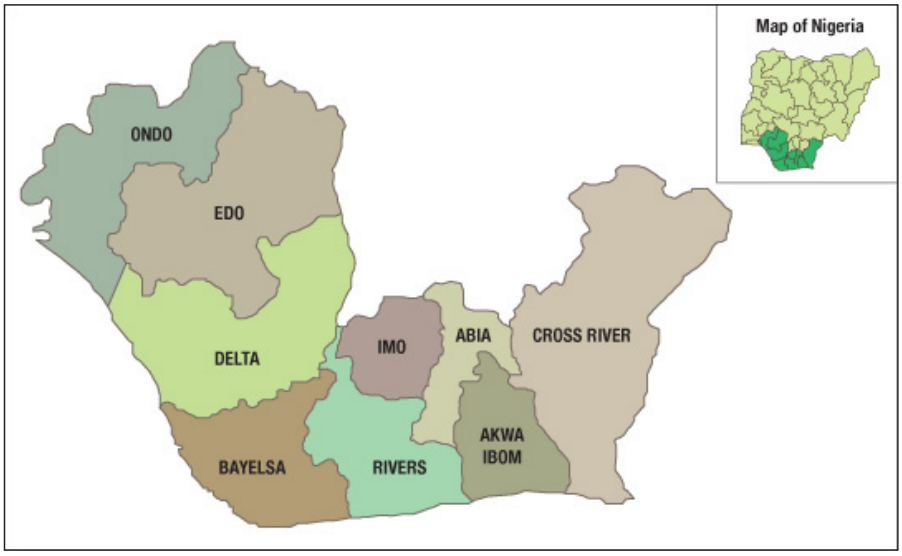
Frequent and extensive oil spills occur in the Niger Delta area and these spills are under-reported. Independent estimates indicate at least 115,000 barrels (15,000 tons) of oil are spilled into the Delta each year, making the Niger Delta one of the most oil-impacted ecosystems in the world (Steiner, 2008). With these spills, drinking water is polluted, fishing and farming are significantly impacted, soils are polluted and ecosystems degraded. Oil spills significantly affect the health and food security of rural people living near oil facilities. Put succinctly that oil spills disaster had gone almost certainly unnoticed over several decades, demonstrate the appalling state of environment management in Nigeria (Agbonifo, 2016). Two research questions posed are: what are the environmental and health implications from oil spills? and how can the food basket be safeguarded in post-oil city?

The ecological and health damage of oil spills and oil pollution in Nigeria is unquantifiable. Systemic and systematic degradation of the environment, health, livelihoods and food system of people residing in oil spill areas is visibly inexcusable. This paper using secondary data through literature review from journal articles, textbook and print media sources examines oil spills as it significantly contributes to impoverishing the food basket and people's health in the Niger Delta region in Nigeria. Objectives to achieve this aim include definition of oil spill, types of spills, causes of spills, level of spills, impact of spills on the food basket in the region. Paper suggests that in the post-oil city, an inclusive approach that detoxifies the environment, preserve livelihoods and health, and restores human dignity will help rebuild and safeguard water and food security.

2. NIGER DELTA GEO CONTEXT

The Niger Delta is Africa's most important oil-producing region, and one of the most polluted places on earth because for decades oil spills have been damaging the environment and devastating lives in this part of Nigeria (Amnesty International, 2018). The Niger Delta, comprises of nine states cutting across three geopolitical zones in Nigeria (Akwa Ibom, Bayelsa, Edo, Cross Rivers, Rivers, Delta-South in the Southern part of the nation; Abia, Imo-south in the Eastern part; and Ondo state in the South-western location of Nigeria; (Figure 1) and it is inhabited by over 31 million people in 186 Local Government Areas (Imevbore, Imevbore and Gundlac, 1997; Ordinioha and Brisibe, 2013).

Figure 1: The Niger Delta Region, Nigeria.



Source: Udotong et al. (2017)

The region occupies a total area of about 70,000 km and makes up 7.5% of Nigeria's land mass which cut across over 800 oil producing communities with an extension network of over 900 oil producing wells and several petroleum production related facilities. The region holds 95 per cent of Nigerian oil reserves which account for 90 percent of Nigerian government revenue and 95 per cent of its export receipts (Adishi and Hunga, 2017). A vast network of pipes connecting numerous oil and gas fields traverse the Delta many of which run close to people's homes, farmlands, through swamps and waterways where people fish.

2.1 METHODOLOGY

This study employs secondary data sourced from Department of Petroleum Resources Statistical Bulletin (2002, 2016), Nigerian National Petroleum Corporation (NNPC) Annual Statistical Bulletin (2013) and Amnesty International (2011, 2018). The data for quantity of oil production and oil spill in barrels, were obtained from these sources. Other secondary data were sourced from the review of scholarly journal articles from scholars in Nigeria.

3. CONCEPTUAL DISCOURSE

This section discusses the environmental inequities and injustices associated with oil spillage in the Niger Delta region and situate it within the concept of environmental justice. With environmental justice, communities can begin to integrate new green deals in the resuscitation of thrive-ability of their environment incorporating economic, environmental, and social sustainability, investment in green infrastructure and social development where no one is left behind.

3.1 ENVIRONMENTAL INEQUITY

Environmental inequity relates to the skewness of power, power distribution, allocation of resources, burden and benefits of environmental challenges. "It describes a condition where unhealthful or dangerous conditions are disproportionately proximate to minority communities" (Robbins, Hintz and Moore, 2010:65, 269). Environmental inequity as it relates to this study describes how regulatory powers and principles continue to compromise the health and quality of life of vulnerable people in the oil producing Niger Delta region. The Niger Delta is among the ten most important wetland and marine ecosystems in the world but unsustainable oil exploration activities has rendered the region one of the five most severely petroleum damaged ecosystems in the world (Kadafa, 2012). Steiner (2008) notes "throughout 50 years of oil production, this ecologically productive region has suffered extensive habitat degradation, forest clearing, toxic discharges, dredging and filling, and significant alteration by extensive road and pipeline construction from the petroleum industry". Environmental inequities erode on the rights of people and the rights of having a sustainable, inclusive and clean environment. Hence, the need for proper environmental justice and accountability.

3.2 ENVIRONMENTAL JUSTICE

Environmental justice (EJ) "is a principle, body of thought and research stressing the need for equitable distribution of environmental goods (parks, clean air, healthful working conditions) and environmental ills (pollution, hazards, waste) between people, no matter their race, ethnicity or gender" (Robbins, Hintz and Moore, 2010:65, 269). It is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies (EPA, 2020). "EJ must be understood in terms of socially-derived inequalities affecting health, well-being and the environment both within and between countries. The unequal distribution of benefits and burdens of production systems and their associated environmental pollution, with disproportionate burdens borne by the poorest and most marginalized populations, has its roots in underlying inequalities of power" (London et al., 2019:553). Bolte, Pauli and Hornberg (2011:459) asserts "environmental justice seeks the equitable treatment and involvement of people of all races, cultures, incomes, and educational levels in the development, implementation, and enforcement of environmental programs, laws, rules, and policies". Environmental justice is concerned with the fair distribution amongst social groups of environmental quality (Mitchell, ٢٠١٩).

Environmental justice is an important part of the struggle to improve and maintain a clean and healthful environment, especially for those who have traditionally lived, worked and played closest to the sources of pollution (Skelton and Miller, 2016). Environmental justice beliefs are important vehicles for social change (Reese and Jacob, 2015) and environmental justice is but one element of a larger environmentalism of the poor that can be found everywhere in the world (Martinez-Alier, 2003). For example, the Anglo-Dutch oil company – Shell – was forced to quit Ogoniland in 1993 because of community unrest led by the activist Ken Saro-Wiwa over pollution, chronic under development and contamination of the land. Ken Saro-Wiwa and eight other Niger Delta leaders of MOSOP (Movement for the Support of Ogoni People) were executed in 1995 by Nigeria's then military regime. MOSOP, as a social movement, raised awareness of the environmental inequities embedded in the system, operations and policies regarding the extraction of oil/petroleum in the region especially by foreign operators.

The concept of environmental justice as employed in this study is both a human rights and moral issue and it is about addressing the inequities and injustices of oils spills and pollution unleashed on unsuspecting people in context of development through oil extraction without legal protection.

4. LITERATURE REVIEW

4.1 THE CONCEPT OF OIL SPILL

Oil spill have been conceptualized in so many ways by several authors. William (2002) and Chinedu and Chukwuemeka (2018) described oil spill as the release of liquid petroleum hydrocarbon into the natural environment from human induced activities such as crude oil extraction, refining, transportation and storage; exploration and prospecting. Oyebamiji and Mba (2014) conceived oil spill to include releases of crude oil from tankers, offshore platforms, drilling rigs and wells, as well as spills of refined petroleum products (such as gasoline, diesel) and their by-products, and heavier fuels used by large ships such as bunker fuel, or the spill of any oily refuse or waste oil. In this paper, oil spill is conceptualized in tandem with Oyebamiji and Mba (2014) definition.

Crude oil is very important to Nigeria's economy and Nigeria is Africa's largest oil producer (OPEC, 2018). It is a complex mixture of hydrocarbon and non-hydrocarbon compounds (including heavy metals) found in subsurface deposits worldwide. The Nigeria Bureau of Statistics (NBS) revealed that crude oil export accounted for ₦3.74 trillion (9.8 billion USD) or 70.84% of total exports in the third quarter of 2019, making it the most exported product in Nigeria while its contribution to the Gross Domestic Products (GDP) was 9.77% (Adebayo, 2019). Despite this, the oil-producing

communities suffer from numerous oil spills. Between 2003 and 2014, there were devastating oil spills from the Bomu manifold, a Shell facility at Kegbara Dere (K-Dere) located in Gokana local government area of Rivers State. K-Dere is home to 52 oil wells owned by the Anglo-Dutch oil giant. Shell was the only oil major company in Ogoniland but quit production and exploration in the area in 1993 because of community rest (unrest).

The crude exploitation has brought to bear oil spillage and its numerous problems including contamination of water bodies, danger to aquatic life, and destruction of farmlands (Nwilo and Badejo, 2008). Spillage also results from accidents, lack of maintenance of engineering equipment and deliberate acts (including oil bunkering and sabotage). In addition, oil spills can also occur as a result of natural disasters such as earthquakes and hurricanes (Egbe and Thompson, 2010).

4.2 CATEGORIES, CAUSES AND VOLUME OF OIL SPILLS IN THE NIGER DELTA

Every year hundreds of oil spills damage the environment and devastate the lives of people living in the Niger Delta. These spillages are categorized into operational spills and third-party interference spills (Amnesty International, 2018). Operational spills results from corrosion, poor maintenance and equipment failure occurring along the main pipelines, smaller flowlines, and at the wells operated by both Shell and ENI. Shell oil terminals are always polluted owing to spills from pipelines leakage and other infrastructural damages. These have been caused by decades of poor maintenance and underinvestment (Amnesty International, 2018). One measure of this deterioration is the frequency and severity of oil pollution incidents caused by corrosion and other integrity failures in the production system (Shell, 1994).

The second category of spill is from third-party interference which is caused by deliberate interference with wells, pipelines and other infrastructure by armed militant groups, criminal gangs and others (Amnesty International, 2018). Some groups seek to disrupt oil production to put pressure on the government for political or financial reasons while some tap the pipelines to steal oil or intentionally create spills in order to receive money as the contractor hired for the clean-up. The oil companies and the government state that, the vast majority of spills have been caused by this third-party interference. However, the proportion of oil spills in the Niger Delta that are caused by sabotage or theft is keenly contested by communities and cannot be determined with any degree of accuracy because of flaws surrounding the collection and presentation of oil spill data (Amnesty International, 2018). Oftentimes, illegal bunkering and petroleum pipeline vandalization results from destructive tendencies of youths who were aggrieved by government's neglect of oil producing communities and corruption of the ruling class in amassing wealth through collaborations with oil companies (Odalonu, 2015).

There are no consistent figures on the quantity of oil spills in the Niger Delta (Ordinioha and Brisibe, 2013), but it is estimated that oil spill accounts for as many as 546 million gallons of oil into the Niger Delta environment over the last five decades, equivalent of about 11 million gallons annually (Amnesty International, 2011). Nigeria is Africa's largest oil producer and the country's crude oil production – estimated at over 300 million litres per day – makes up 70 per cent of the Nigerian government's revenue. Big oil spills are common in the Niger Delta where over 40 million litres of crude oil is spilled annually, resulting in human deaths and damage to the local ecosystem and more than 12,000 oil spill incidents have occurred in the oil-rich region between 1976 and 2014 (Adebayo, 2019). Pipeline corrosion and tanker accidents caused more than 50 per cent of them. Other incidents can be attributed to operational error, mechanical failure, and sabotage mostly from militant groups, the study said (Adebayo, 2019).

Oil spills continue to occur in alarming proportion in the Niger Delta communities, particularly in Ogoniland where people are living in a chronic state of pollution (UNEP, 2011). Oil thefts, illegal bunkering and pipeline vandalism acts were carried out at different levels and quantities; hence there are various methods in which the operations are carried out in the Niger Delta. These include pipeline vandalism, illegal oil bunkering, underdevelopment and neglect of the Niger Delta region and corruption as identified by Adishi and Hunga (2017).

Pipeline vandalism is the intentional act of destroying pipelines, platforms loading barge and other facilities for selfish reasons or vendetta purposes and it is an illicit trade that involves the theft of crude oil and its derivative products through a variety of mechanisms (Odalonu, 2015). The most popular method for stealing the crude oil is to puncture the pipeline conveying the product from one point to the other and tap it at the point where it had been punctured or ruptured (Adishi and Hunga, 2017). Illegal oil bunkering on the other hand involves taking oil from pipelines or flow stations, as well as extra crude oil added to legitimate cargo that is not accounted for (Asuni, 2009).

Four operational methods of illegal bunkering in the Niger Delta include: minor and small-scale pilfering of condensate and petroleum product destined for local market; direct hacking into pipelines or tapping with a hose from wellhead through practical removal of the Christmas tree; excess lifting of crude oil beyond the licensed amount, using forged bills of lading and the fourth is the act of blasting the crude oil pipeline with explosives like (dynamite or bomb) to interrupt supply process to refineries or loading stations (Asuni, 2009 cited in Adishi and Hunga, 2017). Due to years of neglect, marginalization and underdevelopment of the Niger Delta by the Federal Government and the Multinational Oil Companies (MNCs) operating in the region, rings of organized criminal groups, called oil bunkers have evolved in the creeks and along the territorial waters, who specializes in stealing, illegal refining and transporting of Nigeria's crude oil to the international black market (Brock, 2012).

Another factor encouraging oil bunkering is corruption that has eaten deep into the fabric of Nigeria National Petroleum Corporation (NNPC) (Igbinova, 2014).

High calibre thievery (Bassey, 2013) and corruption has negatively influenced the costs of operations, repairs, birthed unnecessary purchase of items, overstocking, and payment for items not supplied. These illegal acts in the Niger Delta involve a convoluted and complex web of relationship spanning all levels of the society- involving diverse interest. These interests are alleged to include highly connected people in and outside government, oil companies, businessmen, retired and serving military officers, militants, politicians, Niger Delta Youth and community leaders, foreign nationals and countries (Asuni, 2009).

Other factors engendering the persistent thriving of these illegal activities in the Niger Delta identified from authors like Igbuku (2014); Victor et al. (2016); and Adishi and Hunga (2017) include (a) poverty; (b) ignorance; (c) greed; (d) lack of respect for national economic survival; (e) get rich syndrome; (f) lack of gainful employment among the youths in the region; (g) exploiting the loopholes in the criminal justice system to circumvent the law; (h) evolving culture of impunity from the wrong perception that some people are above the law; (i) weak institutional structure to checkmate criminals; (j) malice; and (k) bad governance (corruption, incompetency), (l) criminal impunity in the country (m) quest in sharing and taking part in national cake; and (n) collaboration between the security agents and the bunkers.

Although there are no accurate and recent data on the volume of spills in Nigeria, however, between 1998 and 2007 there were about 1,628 incidents of oil spills ranging from theft and sabotage, equipment failure, ageing pipeline and human errors (Amnesty International, 2011). Amnesty International (2011) indicated that through 2005 and 2010 there were about 1,110 oil spill incidences resulting into 298,000 barrels of oil from sabotage and operational problems (NNPC, 2013; Ordinioha and Brisibe, 2013) (Tables 1 and 2). Amnesty International, a human rights organization, in its 2015 report said about 352, 000 barrels of crude were spilled between 2007 to 2014. “It is estimated in some quarters that crude oil theft in Nigeria costs us about 400,000 barrels per day. This is equal to a revenue loss of about $1.7 billion per month and $20.4 billion annually (WetinHappen, 2020). Oil spill incidents have occurred at different times along the Niger Delta area. From the records of the Department of Petroleum Resources (DPR, 2002; 2016), within the period 1976-2015, a total number of 16,476 spills occurred at different occasions and a total quantity of approximately 3 million barrels spilled into the environment. These figures are vast, and of course do not include all those spills which occurred in the decades before the companies began public reporting (Osuagwu and Olaifa, 2018).

Steiner (2008) notes “throughout 50 years of oil production, this ecologically productive region has suffered extensive habitat degradation, forest clearing, toxic discharges, dredging and filling, and significant alteration by extensive road and pipeline construction from the petroleum industry. Of particular concern in the Niger Delta are the frequent and extensive oil spills that have occurred. Spills are under-reported, but independent estimates are that at least 115,000 barrels (15,000 tons) of oil are spilled into the Delta each year, making the Niger Delta one of the most oil-impacted ecosystems in the world”. The Niger Delta in Nigeria has been the attention of environmentalists, human rights activists and fair-trade advocates around the world. The trial and hanging of environmentalist Ken Saro-Wiwa and eight other members of the Ogoni ethnic minority made world attention. So too did the non-violent protests of the Ogoni people. The activists of large oil corporations such as Mobil, Chevron, Shell Elf, Agip etc. have raised many concerns and criticisms (Shah, 2010).

Table 1: Major Source of Oil Spills in the Niger Delta (1998-2007)

Year	Equipment Failure	Human Error	Sabotage/ Theft	Total
1998	28	12	65	105
1999	19	28	55	102
2000	34	39	40	113
2001	46	15	64	125
2002	39	20	67	126
2003	41	53	63	157
2004	38	32	96	166
2005	49	27	127	203
2006	37	39	187	263
2007	31	29	209	269
Percentage	22.2%	18.1%	59.7%	100%

Source: NNPC (2013)

Table 2: Oil Spill, Volume and Causes (2005-2010)

Year	Number of Spills	Volume of Spills/Barrels	Major Causes
2005	180	10,000	95% Sabotage
2006	170	20,000	Sabotage and Operational (50% each)
2007	250	30,000	Operational 70%; Sabotage 30%
2008	170	100,000	Operational and Sabotage 50% each
2009	150	110,000	Sabotage 90% and Operational 10%
2010	190	28,000	Sabotage 80% and Operational 20%

Source: Amnesty International (2011).

Although Shell has not pumped oil from its oil wells in Ogoni since 1993 when Ogoni activists led protests against the oil company for destroying the environment, halting its operations, its pipelines still carry crude oil worth 150, 000 barrels daily through the region to its export terminal at Bonny Island on the coast. The pipelines were reported

to be ageing and poorly maintained, prompting multiple splits as a result of internal pressure and spilling thousands of barrels of crude oil.

Umana (2018) notes the implementation of environmental policies and strategies as documented in the Environmental Impact Assessment (EIA) Decree of 1992 which is an environmental instrument not just for the oil and gas Industry in Nigeria, but also for all other industries in Nigeria are currently fraught with certain challenges, cutting across socio-economic, scientific and cultural frontiers. Some of such key challenges include: overlap of authorities, inadequate access to environmental Information, bureaucratic bottle-necks and non-existence of a defined regulatory professional body. Other challenges include poor environmental education, lack of equipment and logistics for policies and strategies actualization, inadequate and poorly trained workers, poor research and documentation.

Large multinational oil company operating in the Niger Delta employ inadequate environmental standards, public health standards, human rights standards, and relations with affected communities. These oil companies act as a destabilizing force, pitting one community against another, and acting a catalyst-together with the military with whom they work closely-to some of the violence racking the region today (Shah, 2010). In spite of the environmental policies and legal frameworks, these oil spills continue to have significant impact on lives and livelihoods; and on land, soil, water and the environment.

4.3 IMPACTS OF OIL SPILLS IN THE NIGER DELTA REGION

The Niger Delta is a diverse region with rich mangroves and fish-rich waterways. Many residents try to make their livelihoods from fishing and farming. The livelihoods and health of people and communities across the Niger Delta are closely linked to the land and environmental quality, and hence are vulnerable to oil contamination. Crude oil extraction has effectively uprooted the people from the soil, polluted the waters and poisoned the air (Bassey, 2013). The Niger Delta region experiences a high number of oil spill incidents because it is the seat of crude oil activities in Nigeria. Odjuvwuederhie et al. (2006) considered the effect of crude oil pollution on food crop production using primary data obtained from 262 small-scale crop farmers drawn randomly from 10 communities in 5 LGAs in the oil producing agro-ecological zones of Delta State. The study revealed that oil spill has a negative and statistically significant impact on crop yield, land productivity and farm income in a manner consistent with economic expectation.

The United Nations Environment Programme, (UNEP, 2011) scientific survey found that many K-Dere residents grew up near Kidaro Creek, where they fish. Fishing was one trade they excelled in but the harvest is poor as the creek is now contaminated with crude oil. Farmlands and agricultural productivity are shrinking or diminishing due to environmental degradation, agricultural land and fish ponds as well as long-standing ecological buoyancy are being eroded daily by oil spills. The report also revealed damage to fragile mangrove forest, threatening of rare species, including primates, fish, turtles and birds, contamination of underground drinking water and pollution of air quality for the local people, destruction of the livelihoods of the people, reducing the fertility of the soil, unprecedented widespread oil contamination of soil and water body with severe consequences on health, agriculture, ecology and aquatic life. Hence, there is food insecurity and prevalence of hunger in the Niger-Delta region because of the unsustainable farming and fishing practices. Farmers and fishers find it impossible to conduct their daily work because the water and soil are polluted and they are increasingly moving out of the region to find livelihoods elsewhere.

Recently, Nriagu et al. (2016), 86% the residents in Niger now live within 100 m from some type of visible oil pollution while 48% lived less than 100 m from gas flares. Most residents confirmed they came into direct contact with oil pollution fairly frequently with 53% reporting 1-5 contacts per month and 40% reporting 5-10 contacts per month. These contact come during bathing, washing clothes or fishing in oil-contaminated waters, farm work on oil-contaminated soils, and from job-related exposures. 77% of residents perceived the drinking water to be highly contaminated. The release of certain harmful metals and chemicals is an obvious evidence of oil spills (Egbe and Thompson, 2010). Olurounbi and Iruoma (2020) notes petroleum hydrocarbons can enter the body through the air, food, and water or when one accidentally eats or touches soil or sediment that is contaminated with oil. Crude oil contains a significant number of aromatic chemical compounds including Benzene, Ethylbenzene, Toluene, and Xylenes (BTEX), which are the most dangerous gaseous elements of crude oil and poses the risk of acute or chronic toxicity in humans during its production, distribution, and use. Benzene is a known carcinogen while toluene can cause kidney and liver damage (Olurounbi and Iruoma, 2020). Occupants of the Niger Delta region may be at risk of air, soil and water systems damage and heavy metal toxicity because of the large amount of oil being spilled in the region (Chinedu and Chukwuemeka, 2018).

To corroborate this assertion, the United Nations Environment Programme (UNEP, 2011) report revealed an appalling level of pollution, including the contamination of air, agricultural land and fisheries, drinking water, and the exposure of hundreds of thousands of people to serious health risks. People inhale chemicals like the smell of benzene, people are diagnosed with respiratory disease and could not survive it. They revealed drinking water from wells in communities in Ogoniland was contaminated with benzene, a known carcinogen at levels over 900 times above the World Health Organization (WHO) guideline. Thus, the study found out that, many residents complain of symptoms they do not know the underlying causes. They further reported that many spills also cause fires, which release toxic fumes that can cause respiratory problems. Women, men and children in the Niger Delta have to drink, cook with, and wash in polluted water; they eat fish contaminated with oil and other toxins (if they are lucky enough to still be able to find fish); the land they use for farming has been contaminated. After oil spills, the air reeks of oil, gas and

other pollutants and there are complaints of breathing problems, skin lesions and other health problems.

The rivers have been contaminated with crude oil crawling on the water. Fishermen could no longer catch healthy fish but a few unhealthy crabs. Farmlands were affected by the oil spill and farm harvests smell the stench of crude oil. The consequences of this include poverty, unemployment, productivity loss, rural-urban migration, population displacement and conflict. The collapse of the local economy and the dispossession of local people from farming and fishing due to the activities of oil spills have displaced many people from their occupation without viable alternatives (Opukri and Ibaba, 2008).

5. THE FOOD BASKET AND FOOD INSECURITY IMPACT OF OIL SPILLAGE

This section discusses the food basket and the impact on food security. The ripple impact of oils spills and pollution are contamination, degradation and toxicity rendering Niger Delta food basket unsustainable and increasing food insecurity.

5.1 FOOD BASKET

Food basket (Figure 2) comprise of nutritious food meant for a healthy, active, and productive well-being of a people, whether in emergency, celebration, as a monitoring tool or agricultural food production in a region. The food basket could be used as a:

- #1: Monitoring tool for healthy eating. The Nutritious Food Basket (NFB) serves as a tool to monitor the cost and affordability of healthy eating and it has approximately 60 foods that represent a nutritious diet for individuals in various age and gender groups (Proof, 2020); or
- #2: Basket of food produce for a region or the pool of food production in a particular area or region has significant impact on other dependent regions. For example, food baskets in Nigeria include the Niger-Delta, Benue, Shakí and the northern food basket, all producing variety of food crops that serves the rest of the country. Benue state is reputed to produce over 120 agricultural products, and as such the state prides itself as the food basket of the nation and some of the crops grown include yam, cassava, soya bean, maize, cow pea, potatoes and citrus (Abah, 2012); or
- #3: Basket of food or food basket/food hamper. Food basket as a gift during celebrations e.g. religious, personal or institutional; or
- #4: Food Basket as a collective food package or food aid in emergency situations. The food that World Food Programme (WFP) distributes depends on the needs of the groups and a suitably composed food basket is critical to maintaining the nutritional status of affected people, especially when they are fully dependent on food aid. The size and composition of the food basket is tailored to local preferences, demographic profile, activity levels, climatic conditions, local coping capacity and existing levels of malnutrition and disease. It is designed to meet the nutritional requirements of a population rather than individuals (who can be targeted through tailored nutrition programmes) (WFP, 2021). In emergencies or refugee situations, when people are completely dependent on food assistance, the main components of the WFP food basket are staples such as wheat flour or rice; lentils, chickpeas or other pulses; vegetable oil (fortified with vitamin A and D); sugar; and iodized salt.

Figure 2: Local Food Basket in Nigeria

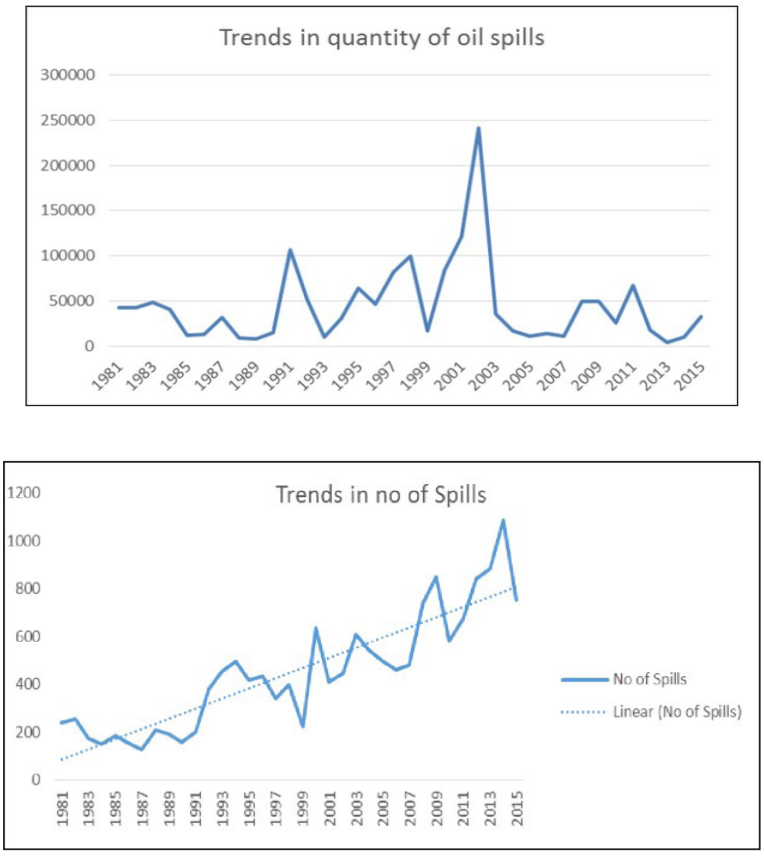
Source: Author's Fieldwork, 2021

The Niger-Delta region is one of the productive food baskets (definition #2) in Nigeria. With oil spills on land, swamps or offshore, the main source of livelihoods (farming and fishing) of the people is completely contaminated and the oil spills definitely continue to have an undeniably devastating impact on the lives and livelihoods of the people of the Niger Delta. Ahmadu and Egbodion (2012) examined the effect of oil spills on cassava farm land, yield and land productivity in Delta State asserted that, About 45% of the variation in land productivity in cassava production was influenced by oil spill and the farmers' farming experience. The productivity increased with increase in farming experiences, but decreased with increase in oil spills. Ojimba (2012) discovered that the effect of crude oil pollution on crop farms reduced the size of farmland, significantly at 1%, indicating that environmental degradation poses a serious threat to farmers by diminishing both physical ability and psychological desires to farm. The goal of farming may be defeated before the proper exercise, especially when the individual has no hope of any compensation when the crops are

destroyed, or the waters are polluted, as always, the case in the Niger delta region. Oil spills have negative effect on agricultural productivity owing to forest loss and degraded farmlands in the Niger Delta region of Nigeria (Akpokodje and Salau, 2015; Ekanem and Nwachukwu, 2015).

Given the present circumstances in the Niger Delta, Osuagwu and Olaifa (2018) carried out an empirical study on the effect of oil spills on fish production in the Niger Delta. The study confirms the evidence of adverse effect of increase in oil spills on fish production in the Niger delta region of Nigeria. This study corroborates the findings of Akpokodje and Salau (2015) and Ekanem and Nwachukwu (2015) that oil spill is a major impediment to agricultural activities in the Niger Delta region of the country. In addition, the study showed that the pollution caused by oil spillage does not end with the mopping up of the spilled oil in the land area or water; it also contaminates fishes in the rivers. It is now known that health risk is not averted by abstinence from fish killed by spilled oil because, some of the fishes and animals that escape instant death from pollution are known to have taken in some of the toxic substances, which in turn get into human beings that eat them. This in turn cause infections coupled with other "side effects in form of genetic mutations. His findings are shown in Figures 3 and 4.

Figures 3&4: Trends and Number of Oil spills from 1981-2015



Source: Osuagwu and Olaifa (2018)

Though the quantity of oil spill has reduced owing to the stoppage of shell in the region, the effects of oil spilled in the previous year's still have enormous effect on the fish production in the region. This is because before now, oil companies operate with impunity in the oilfields and to pollute, destroy and dislocate the very basis of survival of the people. Nothing grows or survives on the land because of the slick oil in the soil and water. Residents dig boreholes for water, but as soon as the taps are tuned on, a smell emerge similar to used engine oil and cooking gas. The foul-smelling and oily rivers have become unsustainable. The major ripple impact of oils spills and pollution are contamination, degradation/destruction; food insecurity, pollution of the ecosystems and loss of livelihoods; rendering Niger-Delta food basket unsustainable (Bassey, 2013).

5.2 CLEAN UP EFFORTS

Decades of oil spill left the region an environmental disaster zone-but now hopes are high of a rebirth of farming, fishing and clean water (Agoi, 2019). The Hydrocarbon Pollution Remediation Project (HYPREP) was set up with the mandate to remediate the environment and restore the livelihood of the people. In 2018, the remediation phase of oil impacted sites in Ogoniland and procurement processes commenced for remediation in line with the Federal Government Public Procurement Act of 2007. Alode-Eleme, located outside the oil hub of Port Harcourt, is one of 21 sites that the state-run Hydrocarbon Pollution Remediation Project has earmarked for restoration (Agoi, 2019). The Ogoni clean-up project described as the biggest clean-up project in the world is a project that continues to attract both national and global attention and about 70% of the contractors are expected to complete work by ending of August 2020 while the other 30% are expected to finalize by end of November 2020 (Wasa, 2020).

In 2019, 15 Ogoni youths received three months intensive hands-on training in the fabrication and use of cassava processing machines through a tripartite arrangement between HYPREP, Stakeholder Democracy Network (SDN) and the International Institute of Tropical Agriculture (IITA), Onne (Wasa, 2020). HYPREP has carried out water quality assessment of all drinking water sources in the four local government areas of Ogoniland and the assessment of the water sources has enabled HYPREP to determine areas most needed for the emergency water supply scheme. HYPREP has also carried out a survey of the water reticulating distances in the four LGAs for the supply of potable water in the communities.

However, Amnesty International and other organizations have repeatedly exposed how, despite regulations, the Nigerian government is failing to enforce its own rules on how firms should prevent and respond to oil spills (Amnesty International and CEHRD,

2013). UNEP in 2011 opined that the environmental restoration of Ogoniland was possible but could take 25 to 30 years if a comprehensive clean up exercise could begin immediately. While Essen (2020) stipulated that the Ogoni clean-up might take up to 50 years to complete. It recommended the creation of an Environmental Restoration Fund (ERF) for Ogoniland with a capital of 1billion USD, to be co-funded by the Federal Government of Nigeria, Nigeria National Petroleum Corporation (NNPC) and Shell for the remediation of polluted sites in Ogoniland and restoration of livelihoods of people in impacted communities.

Lack of funding and neglect on the side of the government have been identified as some of the reasons forestalling the actualisation of the Sustainable Development Goals (SDGs) in the oil communities of the South-East zone as well as that of the South-South (Alozie, 2020). Delay in the implementation of the recommendations will not only undermine the livelihoods of the Ogoni communities. But it will also cause the pollution footprint to expand, requiring a fresh investigation to rescope the place and determine the extent of the contamination. This cleanup project has been very slow and even slower due to COVID-19 pandemic. In order to ensure that the individuals involved in the remediation of oil spills are not put at risk of COVID-19 infection, after due consultation with relevant government regulators, there is currently a restriction to its oil spill response activities to only those sites where containment and recovery of oil from new releases is required. At sites where containment and recovery has been achieved, but remediation of residual oil impact has not yet completed, activities have been suspended for the safety of workers and community members. This approach will be reviewed on a regular basis and in consideration of advice from Nigerian and international health officials (Shell, 2020).

Sam et al. (2017) suggests soil screening and massive clean-up funding to enhance contaminated land legislation. The study further recommends that bioremediation should be adopted considering its low greenhouse effect and the reduced cost burden on the weak and overstretched economy of Nigeria. The efforts of government in the recently commissioned clean-up exercise of affected areas in the Niger Delta could not be ascertained but given the importance of oil exploration and exploitation to the Nigerian economy one would expect that this initiative will yield positive results.

6. RECOMMENDATION AND CONCLUSION

6.1 RECOMMENDATIONS: POST-OIL: SAFEGUARDING THE FOOD BASKET

The observed impact of oil spills are becoming increasing enormous therefore protecting and preserving livelihoods of the people (most especially farmers and fishers) of Niger Delta region for the present and future generations is paramount. Likewise is the protection and preserving of the ecosystem involving the land, water sources and the soil from further pollution and contamination. Several studies like that of Ani et al. (2015) and Osuagwu and Olaifa (2018) have shown that the pollution caused by oil spillage has depresses the activities of farmers and fishermen resulting into low productivity and income owing to the unwholesome environmental degradation that accompany exploration of crude oil in the region. Many people are worried of the health risk that ensues from consuming fishes and food contaminated with toxic substances from oil spills.

Safeguarding the food basket (ensuring water and food security) entails detoxifying the food environment. To minimize the level of exposure to heavy metals and the risk of toxicity in the Niger Delta region, effective strategies should be adopted to reduce the occurrence of oil spills (Chinedu and Chukwuemeka, 2018:1). Strategies to achieve this include dismantling the agents causing destruction whether they are private or public, multinational or national, from government or citizens and decontaminating the soil using microbial treatment that help break down the hydrocarbons.

There is therefore need to protect the region through urgent prioritisation of sites for the clean-up exercise in the Niger Delta region. This clean up activity is known as detoxification. Detoxifying the environment, soil and water to replenish the farming and fishing communities entails activities like stoppage of gas flaring, oil theft/sabotage/illegal bunkering. This can only be achieved by ensuring adequate measures be put in place by oil companies to guard against the incessant pollution of air, soil and water. “The preservation of the environment, the restoration of polluted streams and lands, the recovery of the peoples’ dignity will only come about when citizens stand away from the pull of the barrel of crude oil and understand that the soil is more important to our people than oil and its spoils” (Bassey, 2013:128; ERA/FoEN, 2009:11).

Decontamination of the soil is another proposed strategy from the literature. Soils are the foundation of food production and many essential ecosystem services. It has been shown that sustainable soil management contributes to increasing food. Soils are fundamental for producing crops, feed, fibre, fuel (FAO, 2017:1). Healthy soils supply the essential nutrients, water, oxygen and root support that our food-producing plants need to grow and flourish. Soils also serve as a buffer to protect delicate plant roots from drastic fluctuations in temperature (FAO, 2015:1). Prevention of soil contamination remains the best way to maintain healthy soils and food safety in accordance to the Sustainable Development Goals. Contaminants can enter soils from a variety of sources including agricultural inputs, land application of by-products, atmospheric deposition, flood and irrigation water, accidental spills, inappropriate urban waste and wastewater management, and other means. Accumulation and contamination occur if the rate of addition of a given contaminant exceeds its rate of removal from the soil system. Negative consequences may include plant toxicities and subsequent productivity declines, contamination of water and off-site areas through sediment transport, and increased human and animal health risks through accumulation in the food-chain (FAO, 2017:10).

Finally, ensuring sustainable food production practices is another strategy for safeguarding the food basket. Sustainable food production is a method of production using processes and systems that are non-polluting, conserve non-renewable energy and natural resources, are economically efficient, are safe for workers, communities and consumers, and do not compromise the needs of future generations (Foresight, 2011). Sustainable Development Goal (SDG) (2015, Para 34) indicates the reduction of the negative impacts of urban activities and of chemicals which are hazardous for human health and the environment, including through the environmentally sound management and safe use of chemicals, the reduction and recycling of waste and more efficient use of water and energy. While SDGs 2 and 15 emphasise sustainable and resilient food production systems.

Sustainable Development Goals and Safeguarding the Food Basket

- SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture.
- SDG 2.4: By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.
- SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
- SDG 15.5: Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species.

The stoppage of gas flaring and putting a halt to new oil exploration/extraction, by ending oil block licensing, will mark a major step towards detoxifying the Niger Delta and a continuous auditing of all oil spills, drilling and other related polluting incidents in the region.

It was observed that, the impotency or ineptitude of environmental policy on oil spills have further aggravates the effects of oil spills on the food basket of the region. Safeguarding the food basket through sustainable food production system is key to revitalisation of the Niger-Delta region. There is an urgent need to speed up the on-going detoxification projects in the region to protect and preserve the people and their environment. The Department of Petroleum Resources should enforce policies on oil facilities life span especially on pipeline life span duration, in order to reduce corrosion of pipelines. In addition, we recommend effective monitoring of on-going cleanup process in the region and the establishment of a framework to assess the outputs of these projects

The Post-Oil City must, therefore, adopt models for achieving water and food security that include reductions in long-distance transportation, increased urban food production, improved water capture and reuse and new solutions for an aging and outdated urban infrastructure. Post oil city will refrain from dirtier fossil fuels such as bitumen and coal; and gas flaring. While Bassey (2013: 117) asserts “leave the oil in the soil, the coal in the hole and the tar sands in the land”, “the preservation of our environment; the restoration of polluted streams and lands; the recovery of our dignity will only come about when we stand away from the pull of the barrel of crude oil and understand that the soil is more important to our people than oil.”

6.2 CONCLUSION

Oil pollution in the Niger Delta is an ongoing chronic disaster occurring at an alarming rate in the Niger Delta communities. These spills emanate from both operational spillage and third-party interference spillage. However, despite the magnitude of spills and its effects, these spills are under-reported. Oil spills have both environmental and social impacts on the livelihood, food security, physical and mental health, and the ecosystem. Protecting and preserving the natural habitat is critical for the post-oil city. It is paramount to protect and preserve lives and livelihoods of the present and future generations; and protect the ecosystems (land, water sources and the soil) from further degradation, pollution, contamination and exposure to toxic substances.

The ineptitude of environmental policy and regulations on oil spills further aggravates the effects of oil spills on the food basket of the region. It has contaminated the soil, water and air causing great loss for food production. Safeguarding the food basket through sustainable food production system is key to revitalisation of the Niger Delta region. Safeguarding the food basket in a post-oil city through sustainable food production system is germane to revitalisation of any region/community experiencing oil spills. After all, environmental justice is also about addressing the food insecurity and injustices that have come about due to decades of oil pollution in the region. The just distribution of resources (distributive justice) and strengthening of environmental laws, policies and regulations in imperative for an inclusivity and generational equity.

There is an urgent need to speed up the clean up efforts to protect and preserve the people and their environment. There is an urgent need to speed up the on-going detoxification projects in the region to protect and preserve the people and their environment. The Department of Petroleum Resources should enforce policies on oil facilities life span especially on pipeline life span duration, in order to reduce corrosion of pipelines. In addition, there should be effective monitoring of on-going cleanup process in the region and the establishment of

a framework to assess the outcome of these projects.

The Post-Oil City must adopt inclusive and sustainable food systems that leaves the oil in the soil, minimises damage to the ecosystems and ensures water and food security. The Post-Oil City must, therefore, adopt models for achieving water and food security that include reductions in long-distance transportation, increased urban food production, improved water capture and reuse, and new solutions for an aging and outdated urban infrastructure. Post oil city should refrain from dirtier fossil fuels such as bitumen and coal; and gas flaring. To restore dignity and health, it even becomes more imperative to leave the oil in the soil in the post-oil city especially with the fall in oil prices per barrel, deregulation of the petroleum sector and removal of petroleum subsidy, limitations in transportation fuel consumption and teleworking/remote working due to COVID-19 pandemic disruptions.

REFERENCES

ADEBAYO, B. 2019. Major new inquiry into oil spills in Nigeria's Niger Delta launched, March 26, 2019. Accessed July 22, 2020 from https://www.cnn.com/2019/03/26/africa/nigeria-oil-spill-inquiry-intl/index.html.

ADISHI, E. and HUNGA, M. 2017. Oil Theft, Illegal Bunkering and Pipeline Vandalism: It's Impact on Nigeria Economy, 2015 – 2016. *IIARD International Journal of Economics and Business Management,* 3.2: 46-65.

AGBONIFO, P. 2016. Oil spills injustices in the niger delta region: reflections on oil industry failure in relation to the United Nations Environment Programme (UNEP) Report. *International Journal of Petroleum and Gas Exploration Management*, 2.1: 26-37.

AGOI, J. O. 2019. In Nigeria's Polluted Ogoniland, Signs of A Clean-Up, March 8, 2019, Accessed January 7, 2020 from https://phys.org/news/2019-03-nigeria-polluted-ogoniland-cleanup.html.

AHMADU, J. and EGBODION, J. 2013. Effect of Oil Spillage on Cassava Production in Niger Delta Region of Nigeria, *American Journal of Experimental Agriculture*, 3. 4:914-926.

AKPOKODJE, J., SALAU, S. (2015). Oil pollution and agricultural productivity in the Niger Delta of Nigeria. *Journal of Environmental Economics,* 6. 4:68-75.

ALOZIE, C. 2018. Why SDG projects failed in oil communities of South-East, South-South, Vanguard News online, December 19, 2018, www.vanguardngr.com/2018-12/why-sdprojects-failed-in-oil-communities-of-south-east-south-south-2/

AMNESTY INTERNATIONAL 2011. UN Confirms Massive Oil Pollution in Niger Delta. Accessed June 2020 from http://www.amnestyusa.org/news/news-item/un-confirms-massive-oil-pollution-in-niger-delta.

AMNESTY INTERNATIONAL 2018. The Niger Delta is one of the Most Polluted Places on Earth. Accessed July 13, 2020 from https://www.amnesty.org/en/latest/news/2018/03/Niger-Delta-Oil-Spills-Decoders/.

ANI, A.O., CHIKAIRE, J.U., Ogueri,E.I. and ORUSHA, J.O. 2015. Effects of Oil Spillage (Pollution) on Agricultural Production in Delta Central Agricultural Zone of Delta State Nigeria. *International Journal of Environmental Sciences,* 4. 2:75-80.

ASUNI, B. J. 2009. *Blood Oil in the Niger Delta Special Report.* Washington; United States Institute of Peace. Accessed June 2020 from http://www.usip.org.

BASSEY, N. 2013. *To Cook A Continent: Destructive Extraction and Climate Change in Africa*. Kraft Books Limited, Ibadan, Nigeria.

BOLTE, G.; PAULI, A.; and HORNBERG, C. 2011.Environmental Justice: Social Disparities in Environmental Exposures and Health: Overview*, Encyclopedia of Environmental Health*, 459-470

BROCK, J. 2012. Rampant Oil Theft Ravages Nigeria's Delta. *Chicago Tribune*, June 4, p.67. Accessed October 30, 2020.

CHINEDU, E., 2018. Oil Spillage and Heavy Metals Toxicity Risk is the Niger Delta, Nigeria, *Journal of Health and Pollution,* 8.19: 8-19.

Delta of Nigeria, *Global Journal of Science Frontier Research Environment & Earth Sciences*, 12.3:18-28.

Department of Petroleum Resources Statistical Bulletin, 2002.

Department of Petroleum Resources Statistical Bulletin, 2016.

EGBE, R. E. and THOMPSON, D. 2010. Environmental Challenges of oil spillage for families in oil producing communities of the Niger Delta region, *JHER* 13: 24-34.

EKANEM, J. and NWACHUKWU, I. 2015. Sustainable Agricultural Production in Degraded Oil Producing and Conflict, *Journal of Agriculture and Sustainability,* 8.1: 14-28.

Environmental Protection Agency (EPA) 2020. Environmental Justice, United States

Environmental Protection Agency, Accessed February 11, 2021 from https://www.epa.gov/environmentaljustice/learn-about-environmental-justice

ERA/FoEN 2009. Building a Post Petroleum Nigeria: Leave New Oil in the Soil, A Proposal Submitted by Environmental Rights Action/Friends of the Earth, Nigeria to the Federal Government of Nigeria, November 25, 2009, 10pp.

FAO 2015. Healthy soils are the basis for healthy food production Accessed August 27, 2020 from http://www.fao.org/3/a-i4405e.pdf, 4pp.

FAO 2017. Voluntary Guidelines for Sustainable Soil Management, Food and Agriculture Organization of the United Nations, Rome, Italy.

FORESIGHT 2011. The Future of Food and Farming: Challenges and Choices for Global Sustainability. Final Project Report. London: Government Office for Science.

IGBINOVIA, P.E. 2014. *Oil Thefts and Pipeline Vandalization in Nigeria*, Safari Books Limited, Nigeria.

IGBUKU, A. 2014. Crude Oil Theft and Illegal Refining in the Niger Delta. Delta State Oil and Gas Stakeholders' Conference, Tuesday, April 15, 2014, Accessed July 15, 2020from http://www.reformeronline.com/crude-oil- theft-and-illegal-refining-in-the-niger-delta/

IMEVBORE, V., IMEVBORE, A., and GUNDLACH, E. 1997. Niger Delta Environmental Survey Final Report Phase 1, Volume 1 Environmental and Socio-Economic Characteristics. Lagos, Nigeria: Environmental Resources Managers Limited; September 1997, 301pp.

IPCC 2000. Land use, land use change, and forestry. Summary for policy-makers. Accessed August 27, 2020 from https://www.ipcc.ch/site/assets/uploads/2018/03/srl-en-1.pdf,

KADAFA, A.A. 2012. Environmental Impacts of Oil Exploration and Exploitation in the Niger

KOLASSA, I.T.; ERTL, V.; ECKART, C.; KOLASSA, S.; ONYUT, L.P.; ELBERT, T. 2010. Spontaneous remission from PTSD depends on the number of traumatic event types experienced. *Psychol. Trauma Theory Res. Pract. Policy,*, *2*, 169-174.

LONDON, L.; KOSHI, I.K.; CAIRNCROSS, E.; GILMORE, J. L 2019. Environmental Justice: An International Perspective, in Nriagu, J.O. (ed.). Encyclopedia of Environmental Health, Second Edition, Pages 553-560, Elsevier.

MARTINEZ-ALIER, J. 2003. Mining Conflicts, Environmental Justice and Valuation, in Agyeman, J. et.al. (eds.) *Just Sustainabilities,* MIT Press.

MITCHELL, G. 2019. Environmental Justice: An Overview, in Nriagu, J.O. (ed.) Encyclopedia of Environmental Health, Second Edition, Elsevier, Pages 569-577.

NNPC 2013. NNPC Annual Statistical Bulletin Accessed July 15, 2020 from http://www.nnpcgroup.com/PublicRelations/OilandGasStatistics/AnnualStatisticsBulletin.asp.

NRIAGU, J. UDOFIA, E. A. and EBUK, G. 2016. Health Risks Associated with Oil Pollution in the Niger Delta, Nigeria. *Int J Environ Res Public Health*. 13(3): 346-358.

NWILO, P.C. and BADEJO, O. T. 2008. Oil Dispersion and Trajectories on Nigerian open sea. The Conference Proceedings of the International Conference on the Nigeria State, Oil Industry and the Niger Delta, 164-192.

OBI, C.I. 2010. Oil as the "Curse" of Conflict in Africa: Peering Through the Smoke and Mirrors. *Rev. Afr. Political Econ.*, *37*, 483-495.

ODALONU, B. H. 2015. The Upsurge of Oil Theft and Illegal Bunkering in the Niger Delta Region of Nigeria: Is There a Way Out? *Mediterranean Journal of Social Sciences*, 6. 3.: 221-249.

ODJUVWUEDERHIE, E. I. DOUGLASON, G. O., FELICIA, N. A. 2006. The effect of oil spillage on crop yield and farm income in Delta State, Nigeria. *Journal of Central European Agriculture*, 7. 1: 41-48.

OJIMBA T.P. (2012). Determining the Effects of Crude Oil Pollution on Crop Production Using Stochastic Translog Production Function in River State Nigeria, *Journal of Development and Agricultural Economics*, 4.13:346-360.

OLUROUNBI, R. and IRUOMA, K. 2020. Silent killer: How oil spill pollution is poisoning Nigerians. Accessed July 15, 2020 from,https://www.msn.com/en-xl/africa/nigeria/silent-killer-how-oil-spill-pollution-is-poisoning-nigerians/ar-BB12cfYY.

OPUKRI, C. O. and IBABA, I. S. 2008. Oil Induced Environmental Degradation and Internal Population Displacement in the Nigeria's Niger Delta. *Journal of Sustainable Development in Africa,* 10.1:173-190.

ORDINIOHA, B. and BRISIBE, S. 2013. The Human Health Implications of Crude Oil Spills in the Niger Delta, Nigeria: An Interpretation of Published Studies. *Nigerian Medical Journal*, Jan; 54.1:10-16.

Organization of the Petroleum Exporting Countries (OPEC) 2018. *Oil data: upstream*, available at https://asb.opec.org/index.php/interactive-charts/oil-data-upstream (last accessed 7 February 2018).

OSUAGWU, E. and OLAIFA, E. 2018. Effects of oil spills on fish production in the Niger Delta. *PLoS ONE* 13.10: e0205114.

OVADIA, J. S. 2013. The Nigerian "One Percent" and the management of national oil wealth through Nigerian content. *Sci. Soc.*, *77*: 315-341.

OYEBAMIJI, M. A. and MBA, C. I. 2014. Effects of Oil Spillage on Community Development in the Niger Delta Region: Implications for the Eradication of Poverty and Hunger (Millennium Development Goal One) in Nigeria. *World Journal of Social Science*. 1. 1:27-35.

PROOF 2020. Nutritious Food Basket, https://proof.utoronto.ca/resources/nutritious-food-basket/.

REESE, G. and JACOB, L. 2015. Principles of environmental justice and pro-environmental action: A two-step process model of moral anger and responsibility to act. *Environmental Science & Policy,* 51:88-94.

ROBBINS, P., HINTZ, J. and MOORE, S.A. 2010. Environment *and Society: A Critical Introduction,* Wiley-Blackwell, United Kingdom.

SAM, K., COULTON, F., PRPICH, G., 2017. A multi-attribute methodology for the prioritization of oil contaminated sites in the Niger Delta. *Science of the Total Environment*, 579.1: 1323-1332.

SDG 2015. Transforming our world: the 2030 Agenda for Sustainable Development , A/Res/70/L.1 Accessed January 7, 2020 from https://sustainabledevelopment.un.org/post2015/transformingourworld/

SHAH, A. 2010. Nigeria and Oil-Global Issues Accessed January 7, 2020 from http://www.globalissues.org/print/article/86.

SHELL 1994. *Note for Information: Environmental and Community Relations Issues in Nigeria*, December 1994, (Exhibit 5. Decl of J. Green in Opp to Motion to Dismiss Ric).

SHELL 2020. Oil Spill Data. Accessed July 29, 2020 from https://www.shell.com.ng/sustainability/environment/oil-spills.html

SKELTON, R. and MILLER, V. 2016. The Environmental Justice Movement, Accessed February 11, 2021 from https://www.nrdc.org/stories/environmental-justice-movement.

STEINER, R. 2008. Double Standards? – International Standards to Prevent and Control Pipeline Oil Spills Compared with Shell Practices in Nigeria, Amsterdam, Milieudefensie.

UMANA, K. 2018. Challenges of Environmental Policies in Nigeria, *November 9, 2018,* Accessed April 21, 2020 from https://researchcyber.com/challenges-prospects-environmental-policies-nigeria/

UNEP. 2011. Environmental Assessment of Ogoniland, United Nations Environment Programme, P.O. Box 30552, Nairobi, KENYA.

VICTOR, E. A; OFFONG, I. A; SUNDAY, O.E. 2016. Oil Theft and Corruption: Pathways to under Development in the Niger Delta. *Research on Humanities and Social Sciences,* 6. 3: 65-79.

WASA, I. 2020. OGONI CLEAN-UP: ACHIEVEMENTS IN THREE YEARS, Press release, June 23 2020. Accessed August 24, 2020 from https://hyprep.gov.ng/ogoni-clean-up-achievements-in-three-years/.

WETINHAPPEN 2020. Nigeria loses $20.4b yearly to oil theft, WetinHappen Magazine, March 11, 2020. Accessed July 13, 2020 from https://www.wetinhappen.com.ng/nigeria-loses-20-4b-yearly-to-oil-theft/.

WFP 2020. The WFP Food Basket. Accessed January 7, 2020 https://www.wfp.org/wfp-food-basket.\

WILLIAM, W. 2002. Citizenship Questions and Environmental Crisis in the Niger Delta: A Critical Reflection. *Nordic Journal of African Studies*, 11.3: 377-389.

Notes

Published by the University of KwaZulu-Natal
https://journals.ukzn.ac.za/index.php/JICBE

Journal of Inclusive cities and Built environment. Vol. 1 No.1

How to cite: Gondwe, James and Manda, Mtafu. 2021. Localizing children's play spaces through the child friendly city lens: Towards children's inclusivity in Mzuzu City, Malawi. *Journal of Inclusive cities and Built environment.* Vol. 1 No.1, Pg 81-89.

LOCALIZING CHILDREN'S PLAY SPACES THROUGH THE CHILD FRIENDLY CITY LENS: TOWARDS CHILDREN'S INCLUSIVITY IN MZUZU CITY, MALAWI

By James Gondwe[1] & Mtafu Manda[2]

Published March 2021

ABSTRACT

This paper draws on a review of childhood discourses on child focused literature and content analysis of some of Malawi's planning instruments to argue that Mzuzu City is not a child-friendly city. Specifically, the planning instruments which include the planning law, national urban policy, planning guide book and Mzuzu city structure plan which dictate public space apportioned for various activities are noted to fulfill the needs and aspirations of adults at the expense of children's play needs. Furthermore, despite the fact that a malleable definition of childhood is likely to accommodate the lived experiences of children living in the City, child agency is conspicuously absent. This paper suggests that there is need to reframe these planning instruments as a way of reimaging the built environment to capture the needs and aspirations of children as it does for adults.

KEYWORDS Child friendly city, childhood, Mzuzu City, child agency and planning instruments.

[1] Senior Lecturer in Human Geography, Mzuzu University. Email: gondwe.j@mzuni.ac.mw
[2] Associate Professor in Urban Planning, Mzuzu University. Email: manda.ma@mzuni.ac.mw

1. INTRODUCTION

The child-friendly city concept is evident in narratives, research reports and other endeavors that promulgate inclusivity in cities. A child friendly city is defined as one committed to improving the lives and aspirations of children as espoused by the UN Convention on Rights of the Child 1989 (CRC) (See UNICEF,2002). Article 31 of this CRC clearly states that children have the right to partake in play and recreational activities (Chin Hai & Tat Low 2019). By signing Article 31 of the CRC, central governments and local governments are encouraged to proactively establish infrastructure that children can use to meet their needs for growth and development (Budiyanti & Djaja (2016). Specifically, child friendly cities are expected to enact legislation, formulate polices and institutional frameworks promoting children rights and welfare (UNICEF,2002). One of the rationalities behind the child-friendly city campaign is to increase children's play and green spaces in cities because of their health benefits (Herrington and Brusson, 2015) such as reduced risk of psychiatric disorders (Engemann, et al. 2019). The number of children in urban areas in another rationale. According to UNICEF (2002) about half of the global population of children live in urban areas but often in poverty, with unmet needs and neglected rights. While the child friendly city campaign appears to have succeeded in raising awareness, its practicality has been elusive. In many countries there is mere cherry picking of the elements that constitute child friendly city concept (Chan, et al 2016) Specifically, despite the framing of the CRC, many cities lack child-oriented facilities (Van Melik & Althuizen 2020). Malawi, as a signatory of the treaty, is also expected to create children's imaginative and material spaces in cities, but like in other cities these are not adequately followed by appropriation of spaces for children's play spaces. Although the population of children is increasing in Mzuzu City (NSO, 2019), the child friendly city narrative is thus more on paper than practical.

This paper argues that to establish and increase play spaces that capture the socio spatial imagination of children, there is need to reframe Malawi's urban planning instruments to suit the lived realities of urban environments where children are growing and living. Since childhood is a contested and negotiated concept (Aiken 2001), the child friendly city concept must shift boundaries of the 'global child' as perceived by global north oriented narratives including the content of Article 31 of CRC. If the term African city is problematic to codify because of its diversity (Myers 2011), then establishing play spaces for children is likely to vary in time and space. Therefore, there is need to reconstruct and reimagine the current urban planning instruments to accommodate the lived realties and the experiences of children in the urban space.

The study used the case of Mzuzu to illustrate the challenge of implementing child friendly cities concept and to illuminate how child agency can make a contribution to achieve the goal of child friendly cities. The paper had three objectives. Firstly, it sought as a pacesetter for localisation esearch in children's geographies in Malawi, which is a realm that is largely ignored in urban research activities, despite the countries being a signatory to conventions and protocols meant to protect the rights of children including the child friendly city concept (Robson 2004). Secondly, the paper sought to contribute to on-going research on city inclusivity but through the lens of the child-friendly city. Thirdly, the paper sought to put forward children's play spaces as an agenda in urban planning that could contribute to the realization of inclusive cities as expected by Sustainable Development Goal (SDG) number 11 which, according to Kates et al 2005) emphasizes on creating cities and human settlements as inclusive, safe, resilient spaces. Thus, the paper is premised on the synthesis of childhood leading to the localization of designing and planning for children's play spaces through the lens of a reframed concept of child-friendly city.

2. THE CHILD FRIENDLY CITY CONCEPT

A child friendly city is defined as spaces in the city where children's rights and perceptions are accommodated, appreciated and recognized (Gleeson and Sipper 2006). According to UNICEF (2018) child friendly city includes the need to integrate needs, rights and voices of children in law, policies, regulations and projects, and budgets. It is one of the layers of urban inclusivity which emerged from the 1996 Istanbul Conference on human settlement with the logic being rooted in decentralisation wave, rights-based approaches to development rapid urbanisation, and (UNICEF, 2018). Brown et al (2019) argue that a child friendly city is fitted with infrastructure that children use to fulfill their needs and future aspirations. It is a concept whose "aim is to make cities worldwide more livable for children," (Chan, et al 2006: 2). Importantly, the child friendly cities attempt to achieve the following 12 cardinal points (Rismanchian and Rismanchian 2007):

i. influence decisions about their city;

ii. express their opinion on the city they want;

iii. receive basic services such as health care and education;

iv. drink safe water and have access to proper sanitation;

v. be protected from exploitation, violence and abuse;

vi. walk safely in the streets on their own;

vii. meet friends and play;

viii. have green spaces for plants and animals;

ix. live in an unpolluted environment;

x. participate in cultural and social events;

xi. participate in family, community and social life;

xii. be an equal citizen of their city with access to every service, regardless of ethnic origin, regional, income, gender or disability.

The twelve cardinal points as contained in the Habitat II Agenda 21 stipulate the conceptual framework which guides city managers, planners, mayors and community organizations on the practice of child friendly cities. According to Gokemen & Tasci (2016) child

participation is central to the realisation of the child friendly city. Thus, from the twelve initiatives, it can be said that the main essence of CFC concept is to proactively improve children's imaginative and material play spaces in urban environments through engaging children's perceptions on how public spaces should be appropriated. The establishment of children's imaginative and material play spaces is essential for the health, body and mind (Yuniastuti & Hasibuan 2019; Aji et al 2016; Van Melik & Althuizen 2020). As noted by Brown et al, 2019, p.1), play is the building block of child health and 'if a city is a healthy place for children, it is a healthy place for everyone.' Thus, if applied in its totality, the CFC leads to the creation of consumption spaces in cities that fulfil not only the needs and aspirations of children, but also those of adults and everyone.

3. CONTEXTUALISING CHILDHOOD

If childhood is a social construction (Harton & Kraftl, 2006; Harton & Kraftl, 2006a, Holloway 2014) children's realms vary not only in time and space but also from one city to another. The shift in childhood narratives from traditional approaches to biosocial models (Holloway 2014; Tisdall & Punch 2012), means as argued by Tisdall & Punch (2012) the transferring of 'global child' discourses derived from Western Europe to the cities of the global South has failed to accommodate the socio-economic realities of such urban environments. The metaphor of a globalized child has lost its universal meaning and application.

"These norms are being globalized when in fact even in the Minority World (Western Europe) they exclude large swathes of children and young people who work, who do not live with their biological parents or who are otherwise excluded (e.g by ethnicity or sextual orientation) or are out of place e.g. street, travelling families those that apply for asylum or refugee status. Thus, these minority World norms are very particular notions of appropriation participation for children and young people and not even universal in their contexts (Tisdall &Punch 2012:254)

The modern models of children's geographies and childhood studies define and characterize childhood as a social construction. As such, childhood is supposed to be contextualized to accommodate children's lived experiences from different urban cultural norms and practices. Fundamentally, this paper advocates for the child-friendly city that is malleable and able to accommodate the rights and child agency according to the social, economic and political contours of different urban environments. It further argues that if normative models of childhood have failed to apply in cultural environments different from the global north where such models originated and popularized, then the concept of the child friendly city should also be unpacked and distilled to accommodate the economic, social and political spheres of African cities. While the child-friendly city's implementation shapes the urban environment where children are growing and playing, its successful applicability is likely to be reshaped by socio-spatial contexts of urban places. As population of children in cities increases, their lives will be determined by their interaction with the various components of the urban environment (Krishnamarthy 2019).

There are many legal instruments that define childhood in Malawi. In 2017, the childhood bar was raised from 16 to 18 years (Kwamula 2017; African Child Policy Forum, 2013). Although the use of the scientific approach provides objective approaches when dealing with childhood issues, its reliance on the Piagetian models of child development is problematic because childhood is also shaped by socio-economic conditions that vary in time and space. Piagetian model argues that the relationality of children corresponds with their age with the sensorimotor being the first stage and formal operational being the last stage in a four-stage model (Huitt & Hummel 2003). It also implies that children who are not yet 18 years as argued by Holloway; Tisdall & Punch (2012) are irrational, immature, therefore, cannot exercise their rights and agency. Standardization of childhood through importing definitions leads to childhood narratives and discourses prevailing in developing countries to be sidelined to the periphery. There is a groundswell of research activities that have questioned the applicability of Eurocentric models of childhood to other social settings (Ansell 2016, Ansell 2009 and Robson 2004). Although the 18 years bar is a quantitative measure of childhood that has been adopted by many countries in the world including Malawi, qualitatively, childhood should be shaped by different socio-economic settings. In any case, when the age bar is used, even within the same country there are varied practical definitions of childhood. For instance, in Malawi different legal instruments apply different ages as bars of childhood.

Generally, in Malawi childhood definitions and constructions are a reflection of the Eurocentric approaches to childhood. Children who may be considered too young to work in the global north are active participants in food and income generation in the global south. For instance, studies on child exploitation in the tobacco industry in Malawi (ILO 2018; Otanez,etal 2006; See also report by Centre for Social Concern, 2015) child domestic workers in Malawi (ILO 2013) and child headed households (Phillips 2011) show that the drivers of child exploitation in the mentioned scenarios were seen through the lens of the global north where childhood is defined as a passive stage that lacks autonomy and rationality, therefore should be locked up in schools. This approach neglects the fact that childhood has many layers of complexity and ambiguities, and hence its definition and construction are not a fit-all model but vary depending on the socio-economic contexts. For example, it has been reported that some urban children are partaking in street vending as a livelihood strategy (Chirwa 2015). The existence of independent child migrants in Malawian cities who live unaccompanied by their parents or legal guardian has been reported by Mpaka (2020). Children also work as care givers in sub-Saharan countries where the formal health systems have collapsed (Robson 2004). In such situations, as argued by Phillips (2011), the right to alternative care in which a child is seeking to survive through certain livelihood strategies should be accommodated by a definition of a childhood.

4. CHILD AGENCY IN URBAN SPACE

Child agency has been recognised in literature though with varying definitions (Montreuil and Carnevale, 2015; Sirkko, et al, 2019). Child agency points to a rejection of previously dominant understanding of children 'as goods consumed by adults' (Lundberg et al, 2009, p.1) or as passive objects of social services…' (Sorbring and Kuczynski, 2019,p.3). It rather reflects the ability for children to make choices and decisions to influence events and to have an impact on children own welfare. Child agency is considered as a part of identity and also as a foundation for learning and wellbeing (Mashford-Scott, et al 2011). Recognition of child agency is a departure from global north discourses in which childhood was conceptualised from adult perspectives focused cultural and historical practices of control and not listening to children (Haring et al,2019).

The importance of child agency is explained not only in the attention given to it by the UN Convention of 1989, but also in literature. *A full issue of the International Journal of Qualitative Studies on Health and Well-being (Sorbring and Kuczynski, 2019) was dedicated child agency. The journal's main thrust is that child agency is not just for the individual children themselves but also for others in family, school and society.* Among the ways to support child agency is to provide for children the needs of their choice. When this fails, they make choices for the improvement of their welfare or to reduce their vulnerability. For example, Aufseeser (2017, p.1) point to children moving to become street children 'as part of an active strategy to mitigate or avoid some of the violence in their lives.' There can be many ways in which children seek to participate in city life that planners and policy makers may not be aware. Failure to incorporate children's play spaces in polices and urban plans is one way in which the child friendly city concept has failed to benefit from positive aspects of child agency. Therefore, in the absence of support to child agency and child friendly city initiative, children will appropriate opportunities that adults might consider disorderly, libelous, unsafe or hazardous. For example, children will use metaphysical imagination to play in any areas of their choice, such as busy streets, sidewalks and drainages, or garbage sites (see Freddy, et al 2017), which may sometimes be to the detriment of their safety and health. In the family setting child resistance might be overt or covert to show their autonomy in decision (Kuczynski, 2019). The above shows that context is central in the understanding child agency. While Sorbring and Kuczynski (2019) cite culture, acculturation, poverty, school and family relationships as key contents, one can argue that the agency of children in global north context will be different from that in the global south context.

5. METHODOLOGY

Mzuzu City is the third largest urban centre in Malawi. The city covers are area of 143.8 km^2 and has 15 political Wards. The City's population was estimated at 221,272 in 2018 (NSO, 2019) having grown from 133,968 in 2008. With a growth rate of 4.4% per year, Mzuzu is the most rapidly growing urban area in the country which is followed by the Capital City Lilongwe at 4.3% per year. The demographic split of the city's population shows that children constitute about 44% (table 1 refers). The city was founded in 1945 when a small tung estate was established and has since then largely grown informally except for enclaves of formerly colonial residential areas and the central commercial core. Due to its colonial and post-colonial planning practices, conflicts of rationality are a major contributor to urban character of urban space that currently obtains.

Table 1: Population by age in Mzuzu City

Year	Children	Other	Total
1998	-	-	87,030
2008	61,265	72,703	133,968
2018	98,177	123,095	221,272
2025 est.	-	-	522,000

Source: National Statistics Office (2019); (2010)

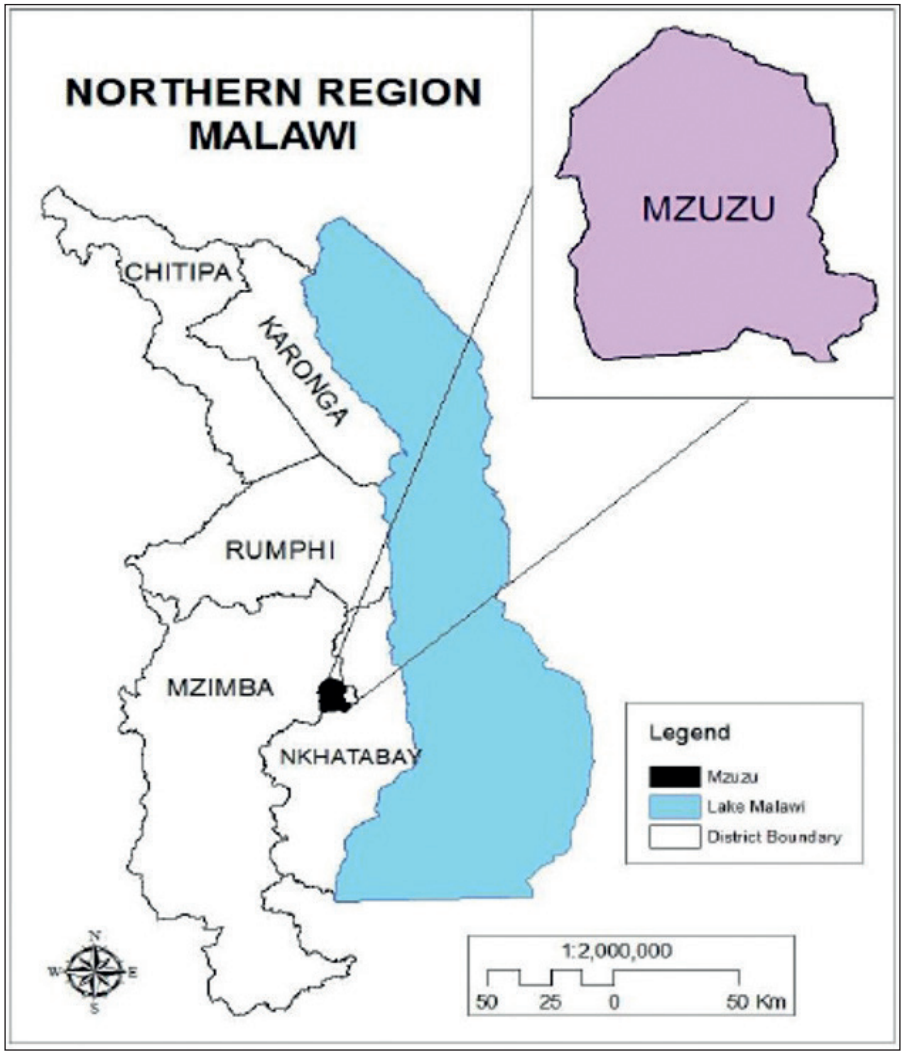


Figure 1: Location of Mzuzu City, Northern Malawi
Source: Mzuzu City Council, 2014. Urban Structure Plan.

The study used a qualitative descriptive design (Wenger, et al 2021) and content analysis to investigate the extent to which the planning instruments, the Planning Law of 2016, National Urban Policy of 2019, Land Use Planning and Development Management (Planning Guide Book of 2014) and Mzuzu Urban Structure Plan of 2014 that are used for the apportionment and designing of space in the city accommodate children's material and imaginative spaces. Child-friendly city (CFC) and childhood theoretical narratives and parameters were systematically reviewed to determine the compatibility of urban planning practice with the CFC initiative. Indicators from the UNICEF Report (2007) were used as the yardstick for determining the extent to which the planning instruments are compatible with the CFC initiative. Furthermore, the concept of child agency was used to understand children's interests and rights and how these are incorporated in understanding the spatiality and complexity of childhood when linked to the diversity of the socio-physical environment of Mzuzu City.

6. ANALYSIS OF PLANNING INSTRUMENTS

Mzuzu City like all others in Malawi are guided by four key instruments. These instruments are (a) the National Urban Policy, 2019; (b) Physical Planning Act, 2016; (c) Planning Guidebook (2014), and the Mzuzu urban structure plan (2014)

a. *Physical Planning Act, 2016:* The law was approved in 2016. Among the key provisions are the levels of planning. The types of plans that can be prepared are national physical development plan, district physical development plan and local physical development plans. For purpose of child play spaces, only local physical development plans are relevant here. Local plans can be urban structure plan, detailed layout plan, civic plans and subject plans. Subject plans are special plans for specific sectors such as, even though not named, child play spaces, but not been obligatory to local governments. By section 35 (3) The commissioner has power to require the inclusion any matter in the plans, but there is no record of the office instructing planning authorities to that regard, except rarely as comments on missing out of child play areas in the detailed layout plans.

b. *National Urban Policy:* the development of national urban policy is expected to set the urban agenda for planners and local governments as well as stakeholders interested in urban development. According to (Schinlder, et al 2018, p1) the role of national urban policies and plans may have potential to foster sustainable land-use systems but only at the national scale, while they are contradictory at the local level. For example, national governments may seek to reduce urban sprawl, while stakeholders situated at the local level 'are typically incentivized to expand urban land use.' This contradiction obtains in Mzuzu in relation to provision of child play and green spaces. A youth sports whose sponsorship is central government is being constructed on a commercial plot not formally designated by the Mzuzu City Council itself and without consultation with children.

c. *Planning Guidebook:* The guidebook is complimented by the local government guidebook (GoM, 2010) which clearly states need for participatory planning processes to be bottom-up starting with the lowest planning

level (neighbourhood or village) where citizens submit their development priorities. These priorities are then incorporated in city wide development plans. The committees responsible for this process at Village, Area, and District levels, serve a three-year term and comprises men and women of different categories including councillors, chiefs and members of parliament, but children are excluded, either by design or default. While the guide book provides room for appointment of special interest groups only gender and disability have been considered in the past.

d. *Mzuzu Urban structure plan:* While the policy, guidebook and law are national level, the urban structure plan is a city level policy and legal framework for guiding the appropriation of space for various uses and activities. In terms of the guidebook, the process of planning requires the participation of all key stakeholders. Prepared in 2014, the plan earmarks land uses for various activities including housing estates, commercial, afforestation and wetlands, industries, institutions and offices. The plan also proposes the preparation of an Open Space Master(subject) Plan and designate a hierarchy but this has not been implemented as planned. At detailed land use planning level, play spaces can be clarified, but when this is done it is mainly in high income locations and schools. Existing play spaces are left to deteriorate due to lack of maintenance and security lapses, or are converted to other land uses e.g. the site for Mzuzu shoprite. An attempt was made recently to rehabilate the open space along M5 through private -public partnership arrangement. However, the open space is located in high income area and away from the areas where most children reside in informal settlements.

Even if all these planning instruments had been effective, the challenge would still persist. This is because the majority of children live in informal settlements where space for play is scarce and open defecation due to their location in marginal flood prone sites is widespread leading to high exposure to pathogens that cause diseases such as cholera. These children cannot access the designated spaces as their parents cannot afford the transport cost while travelling alone would expose them to traffic related risks.

7. RESULTS AND DISCUSSION

7.1 CHILDREN AT THE FRINGE OF URBAN PLANNING IN MZUZU CITY

Malawi's population structure is predominantly young (GoM 2013). The spatiality of the demographic profile shows that cities in Malawi are dominated by children. For example, about 49 % of Mzuzu City are children (NSO 2018). Children are therefore a key component of Mzuzu City which should form part of the process and outcomes of urban planning in the discourse of the child friendly city. Results show that the planning tools have explicitly down played the role of play spaces to the development of the body and mind of children. There is a wide and deep literature on the importance of play spaces to the development of the physical and social spheres of children (Akhter 2018; Arts 2013; Kaymaz, Oguz & Hugul 2017; Lail & Low 2019). Despite the emphasis of research on the importance of children's play and recreational spaces in cities, Malawi's planning instruments, have imported social exclusionary geographies which were practiced during the colonial period that were blind to children rights and welfare. What is more visible in policy and planning documents is marginalization by age and children are the most marginalized. For example, the social objective of planning as stated in the Planning Guidebook of 2014 "to ensure the provision of social services and facilities to meet present and future needs of the population including people with disabilities and the elderly," (GoM 2014: 5) evidently pushes children to periphery. It can, therefore, be argued that the built environment of a city would only respond to the needs and aspirations of adults (UNICEF 2018) at the expense of how.

Results further reveal that children's imaginative and material spaces have not been captured by the Urban Policy as well. Although the Urban Policy captures the need for social inclusion as a strategy for urban development in Malawi (GoM 2016), Mzuzu City inclusive, a deliberate effort to create play spaces has not been made by city managers and planners. The Urban Structure Plan of 2014, the main practical document for implementation has also not given adequate recognition to the children's needs. In many cases it is expected that child spaces can be provided at the stage of detailed layout planning. However, such spaces tend to be rezoned for other uses, usually housing and commercial activities. Thus, construction of play and recreation spaces for children has been implied through the establishment of playgrounds in primary and secondary schools. The establishment of playgrounds in schools do not adequately accommodate the daily behavioral and mobility patterns of children. As argued by UNICEF ,2013) children spatially grow at home, street and the neighborhood. As such, school playgrounds do not adequately capture the play needs of children because of three reasons. First, school playgrounds do not accommodate the everydayness of children as they walk or get driven to school and after knocking off from school business. Horton & Kraftl (2006) argue that children's everyday material geographies should be given more space than hitherto. The reason is through a close examination of the everydayness of children that one can discern play and recreational patterns of children especially after school hours. Children do not stop playing after school hours. As they walk home, they play in informal playgrounds such as stagnant water which is unsafe and hazardous to their health. Second, children who are out of school for various reasons, may not be playing in school playgrounds because such playgrounds might be far away from their homes. Third, some school playgrounds are regulated spaces for play, therefore, accessibility may not be

granted especially after business hours. Therefore, school playgrounds do not fully cater for the play needs of children.

7.2 REINVENTING THE WHEEL: CO-CREATING A CHILD FRIENDLY MZUZU

It is evident from content analysis of planning documents that play spaces cannot be part of Mzuzu City built environment unless the child friendly city concept is adopted. Adoption of child friendly cities in Malawi also entail adaptation of the meaning of childhood to reflect the lived experiences of the children in the context of global south cities like Mzuzu as opposed to importation of child discourses constructed in the global north (Ansell (2017; Robson 2004). Parents who are living in low-income cities of the global south perceive the lives of their children differently, therefore, they cannot provide resources to their children according to the standard definition of a child (Ansell 2017). The fact that some children are involved in livelihood activities like child vending (Chirwa 2015) means that autonomy should be bestowed upon a child who is living in a city like Mzuzu. It should be noted that the exposure of children to activities that are perceived to belong to the adult world would shape the cognitive and psychosocial spheres of children in Mzuzu City. Such children are likely to be actors in decisions pertaining to the location and type of play spaces. Thus, the establishment of play spaces should reflect the cultural histories and geographies of children living in Mzuzu City.

In order to realise this, child agency, involvement of children in decision making in the planning child spaces should be considered beyond the child-adult binary. As Mzuzu City is demographically a child dominated city, the policy processes and documents that guide the appropriation of play spaces should recognise child agency. Ansell (2009: 5) argues:

"That recognizing children's agency increases understanding of their lives, helps avoid inappropriate policies and practices, and enables policies to build on their strength such as resilience, rather than seeing them as simply requiring protection,"

Recognizing child agency provides a basis for weaving policy and legal documents that provide an opportunity for an "engagement with children living in poverty and other challenging situations" even though child agency is more celebrated than practiced (Ansell 2009:6). Furthermore, children's inability to pay taxes and cast votes subdues their voices in development policy (Brown, et al 2019).

A peep into the institutionalised planning structures, that is, planning committees and community level committees, reveal clear bias towards adults thereby hindering children's choices and aspirations. The neglect of child agency goes against principles of good governance institutionalised in the decentralisation and local government laws and guidelines such as the need for social inclusion. Commitment to child agency would reveal itself in 'all aspects of urban life, from planning, policy making and budgetary decisions, to service provision and the introduction of participatory structures,' (UNICEF,2002, p.3). In addition, in the absence of child focused civil society institutions to advocate for spaces for child representation in planning committees, it is difficult to achieve the child friendly city. The absence of children in various planning and spatial organization committees which are outlined in the planning and governance guide books clearly show that children face socio-spatial marginalization. As argued by Freutel (2010), children's participation should not be replaced by adult but should be combined with adult participation. The result of neglecting child agency in law, policy and practice is that children appropriate any available spaces. It is therefore not uncommon for Mzuzu Children to play games on the road or to swim in unclean wetlands or abandoned fish ponds despite the risk of accidents, drowning and diseases. At their level, the children exercise the right to play and socialize among themselves.

8. CONCLUSION

This paper argued that Mzuzu City is not a child-friendly city and did so by reviewing child focused literature and analysed the key planning instruments which dictate public spaces apportioned for various activities. These planning instruments were noted to have excluded the agency of children. Thus, the implementation of the child friendly city should be done beyond child-adult dichotomy where children are viewed as active actors in decision making. Furthermore, reframing the city's planning instruments requires a process that puts children's human rights at the centre of programs and projects that will lead to the construction and reconstruction of children's play spaces in the city. This can reimagine the future of Mzuzu City from the perspectives of of adults as well as of children, where children's infrastructure become part of the built environment. The paper suggests that, as present institutional structures are adult dominated, localizing the child- friendly city concept should be followed by a deliberate creation of city sponsored participatory spaces that would, despite their known limitations, redefine and characterize childhood that resonates well with socio-physical environment of Mzuzu City. Child representatives should be intrinsic members of such committee because children could become partners in local governance. To that end, material geographies of children would become part and parcel of the policy and practice of urban planning. The open space master plan envisaged in the Mzuzu city plan could in this way spell out how play spaces would be located, constructed and reimagined to the benefit of all in the city.

9. REFERENCES

AIJ, H.P.S, BUDIYANTI, R.B., DIJAJ, K. 2016. *The development of child-friendly integrated public spaces in settlement areas as an infrastructure of Jakarta.* WIT Transactions on Ecology and Environment, Vol.210. pp 13-24

AITKEN S .2001. *Global cases of childhood: rights, justice and the unchildlike child*. Area 32.2 pp 119-127.

ANSELL N. 2009. '*Childhood and the politics of scale: descaling children's geography Progress in Human Geography* 32(2). pp 190-209.

ANSELL, N. 2017. *Global South Research in Children's Geographies: From useful illustration to conceptual challenge*. In: Skelton T., Aitken S. (eds) Establishing Geographies of Children and Young People. Geographies of Children and Young People, vol 1. Springer: Singapore.

ANSELL, N.2019.*Global South Research in Children's Geographies: From Useful Illustration to Conceptual Challenge.* In: Skelton T., Aitken S. (eds) Establishing Geographies of Children and Young People. Geographies of Children and Young People, vol 1. Springer: Singapore.

Aufseeser D. 2017. '*Street Children and Everyday Violence.'* In: Skelton T., Harker C., Hörschelmann K. (eds) Conflict, Violence and Peace. Geographies of Children and Young People, vol 11. Springer, Singapore. https://doi.org/10.1007/978-981-287-038-4_31

BRAMMER, M.D., MACDONALD, D., BRAMMER, G., DEANE, P. 2009. Research using dialogue methods. Australian National University: ANU Press.

BROWN, C., de LANNOY., A, McCRACKEN, D., GILL, T., GRANT, H., WRIGHT, H., WILLIAMS, S. 2019. *Special Issue: child-friendly cities.* Cities and Health 3(1): pp 1-7

Centre for Social Concern. 2015. Tobacco Production and Tenancy Labour in Malawi: Treating Individuals and Families as mere Instruments of Production. http://tobacco.cleartheair.org.hk/wp-content/uploads/2016/01/CSC-Malawi-tenant-research-study-2015.pdf Accessed 21/03/2021

CHIRWA J.2015. Tales of Street Kids Vending in Mzuzu City. https://www.nyasatimes.com/malawi-parliament-raise-child-age-definition-14-18-years-illegal-marry-girl-18/.

CHAN, L. ERLINGS, E.; MIZUNOYA, S.; ZAW, H. T, A .2016. City Fit for Children: Mapping and Analysis of Child Friendly Cities Initiatives (December 8, 2016). The Chinese University of Hong Kong Faculty of Law Research Paper No. 2016-35, Available at SSRN: https://ssrn.com/abstract=2882991

ENGEMANNA, K.; PEDERSENC, C.B.; ARGEF, L.; TSIROGIANNISF, C.; MORTENSENC, P.B. AND SVENNING, J. 2019. *'Residential green spaces in childhood is associated with lower risk of psychiatric disorders from adolescence into adulthood,'* PNAS Vol.16 No. 11 pp5188-5193 https://doi.org/10.1073/pnas.1807504116

FREDDY, J.; SARAGIH, B AND TEDJA, M. 2017. 'How Children create their space for play,' International Conference on eco-engineering development. https://iopscience.iop.org/article/10.1088/1755-1315/109/1/012045/pdf

GLESSEN, B, SIPER, N. (eds). 2006. *Creating Child friendly Cities: Reinstating Kids in the City.* London: Routledge.

GOKMEN, H., TASCI, B.G. 2016. *Children's views about Child Friendly City: A case study from Izmi*. Megaron, 11(4): pp 469-482.

Government of Malawi (GoM) 2016. *Malawi National Urban policy.* Lilongwe.

GoM. 2014. *Land use planning and development*. Lilongwe

GoM 2013. *National Youth Policy*. Lilongwe.

GoM 2010. *Guidebook on the Local Government System in Malawi*. Lilongwe.

HARTON, J., KRAFTL, P. 2006a. *Not just growing up, but going on: materials, spacing, bodies, situations.* Children's Geographies, 4:3, pp 259-276.

HARTON, J., KRAFTL, P. 2006. *What else? Some more ways of thinking and doing 'Children Geographies.'* Children's Geographies 4:01 pp 69-75.

HARING, U.; SORIN, R. AND CALTABIANO, N.E. 2019. 'Reflecting on Childhood and Child Agency in History,' Palgrave Communications, pp.1-9. https://doi.org/10.1057/s41599-019-0259-0

HERRINGTON, S.AND BRUSSON, M. .2015, *'Beyond Physical Activity: The Importance of Play and Nature-Based Play Spaces for Children's Health and Development,'* Current Obesity Reports. December, 2015. DOI: 10.1007/s13679-015-0179-2

HOLLOWAY, S.L. 2014. *Changing children's geographies.* Children's Geographies 12:4 pp 377-392.

HUITT, W & HUMMEL., J. 2003. *Piaget's theory of cognitive development*. Educational Psychology Interactive. Valdosta: Valdosta State University.

ILO, 2013. *Ending Labor in domestic work and protecting young workers from abusive working conditions*, Geneva: ILO.

ILO. 2018. *Understanding child labor and youth employment in Malawi*. Geneva: ILO.

KAYMAZ, I., OGUZ, D., CENGIZ-HERGUL, C. 2017. *Factors, influencing children's use of urban green spaces.* Indoor and Built Environment, Vol. 28 (4). pp 520-532.

KEATS, R.W., PARRIS, T.M., LEISEROWITZ, A.A. 2005. Environment: Science and policy for sustainable development. Vol. 47(3) pp 8-21.

KNOWLES-YANEZ, K. 2005. *Children's Participation in Planning Processes.* Journal of Planning Literature 20(13). Pp 3-14.

KRISHNAMARTTHY, S. 2019. *'Reclaiming Spaces: Child inclusive urban design.* Cities and Health, 3: 1-8, pp 86-998.

KUCZYNSKI, L.; PITMAN, R AND TWIGGER, K. 2019. 'Children's agency in the family, in school and in society: implications for health and well-being,' *International Journal of Qualitative Studies on Health and Well-being. Vol. 13 No.1634414.pp.1-11*

KWAMULA, O. 2017. *Malawi Parliament raise child age definition from 14 t0 18 years: Illegal to marry a girl before 18*. https://www.nyasatimes.com/malawi-parliament-raise-child-age-definition-14-18-years-illegal-marry-girl-18/

LAI, C., LOW, T. 2019. Provision of Convenient Play Spaces in A Densely Populated City. International Journal of Environmental Research and Public Health.

LUNDBERG, S., ROMICH, J.L AND TSANG, K.P. 2009. *'Decision making by children,'* Review of Economics of the Household. Vol 17 pp.1-30.

MACDONALD, D., BAMMER, M.D., DEAN, P. 2009. *Research Integration Using Dialogue*. London: ANU Press.

MASHFORD-SCOTT, A. and CHURCH, A, 2011. 'Promoting Children's Agency in Early Childhood Education,' Research on Youth and Language, Vol.5 No. 1 pp. 15-38.

MONTREUIL, M AND CARNEVALE, F.A. 2015. 'A concept analysis of children's agency within the health literature,' Journal of Child Health Care Vol 20, Issue 4, pp. 503–511

MPAKA, C. 2020. *Youth-Rural-Urban Migration Hurts Malawi's Agriculture* http://www.ipsnews.net/2020/08/youth-rural-urban-migration-hurts-malawis-agriculture/

MYERS, G. 2011. African Cities. Alternative visions of urban theory and practice. London: Zed books

Mzuzu City Council, 2014. Urban Structure Plan, 2015-2030, Mzuzu.

OTANEZ, M., MUGGL, M.E., HURT, R.D., GLANTZ, S. 2006. *Eliminating child labour in Malawi: A British American Tobacco Corporate.* Tobacco Control, 224-230.

PHILIPS, C. 2011. *Child headed households: a feasible way forward or an infringement of children's rights to alternative care.* file:///C:/Users/HP/Downloads/eBookChild-headedHouseholds.pdf.

RISMANCHIAN, O., RISMANCHIAN, A .2007. *Children participation in planning processes: the case of Child Friendly City project in post-earthquake Bam, Iran.* Urban design international, vol. 12, pp 143-154.

REUTEL, T. 2010. *Children's Praticipation in Urban Planning. A comparative Study of Vienna, Copenhagen and Madrid.* Master's degree thesis. Unica Euromaster in Urban Studies 4 Cities.

ROBSON, E. 2004. Hidden child workers: Young carers in Zimbabwe. Antipode. Vo.36(1) pp 227-248.

SIRKKO, R.; KYRÖNLAMPI, T AND PUROILA, A. 2019. *'Children's Agency: Opportunities and Constraints,* ' International Journal of Early Childhood, pp. 51:283–300

SCHINDLER, S., MITLIN, D., AND MARVIN, S. 2018. 'National urban policy making and its potential for sustainable urbanism,' Current Opinion in Environmental Sustainability, Vol. 34, 2018, Pages 48-53

SORBRING, E AND KUCZYNSKI, L. 2019. 'Children's agency in the family, in school and in society: implications for health and well-being,' *International Journal of Qualitative Studies on Health and Well-being. Vol. 13 No.1634414. pp.1-4*

TISDALL, E.K.M., PUNCH, S. 2012. Not so 'New?' Looking critically at childhood studies. Children's Geographies. Vol 10, No.3 pp 249-264.

UN-HABITAT. 2011. *Malawi: Mzuzu Urban Profile*. Nairobi: UN-HABITAT Regional and Information Offices.

UNICEF. 2018. *Shaping urbanization for children. A handbook on child responsive urban planning.* New York: UNICEF.

UNICEF. 2002. *Poverty and Exclusion among Urban Children.* Florence. UNICEF

Van MELIK, R., ALTHUIZENI, N. 2020. *Inclusive play policies: Disabled children and their access to Dutch playgrounds.* Tijidschrift voor Economische en Sociale Geografie. Vol.0 (0) pp 1-14.

WENGER, I., SCHULZE, C., LUNDSTROM, U., PRELLWITZ, M. (2021). *Children's perceptions of playing on inclusive playgrounds.* A qualitative study. Scandinavian Journal of Occupational Therapy. Vol 28: issue 2, pp 136-146.

YUNIASTUTI, E., HASIBUAN, H.S. 2019. *Child-friendly green open space to enhance the education process for children*. Conference series. Earth and Environmental Science 240.

Notes