

# ABSTRACT

Title of Thesis: Leapfrogging Development: Analyzing the Trends of Urbanization in Sub-Saharan Africa: Westernization Versus the Informal Economy

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Sub-Saharan Africa is currently urbanizing at the fastest rate the world has ever seen, and with that comes challenges regarding housing, infrastructure, agriculture, industrialization, and service provision. This thesis analyzes trends of urbanization on the continent through the lens of three of the more developed countries—South Africa, Nigeria, and Kenya—with a focus on how urban development via privatization, tech advancement, and foreign trade relations affects spatial inequality, the informal economy, and the environment.

This thesis argues that while ground-up development and privatized service provisions fill the void left by a lack of government funding and programs, they also lead to further inequality. Instead, Western development ideals are best combined with solutions generated by the common people that preserve Africa's informal economy, call upon its cultural legacy of *kanju*, and build upon pre-existing cities through regeneration efforts. Additionally, a focus on technological advancement and production of renewable energy offers a means for the region to bypass the negative consequences of industrialization and enables the population to grow in a way that is sustainable and equitable.

Leapfrogging Development: Analyzing the Trends of Urbanization in Sub-Saharan Africa:  
Westernization Versus the Informal Economy

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## **Dedication**

I would like to dedicate this thesis to my incredible parents. Thank you both so much for instilling within me a passion for the built environment and a fascination for the world around me.

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Thank you to the brilliant teachers and mentors who prepared me to write this thesis. I would first like to thank my primary advisor, Dr. Martin Murray—critiques, your advice, and your passion for African cities inspired me to keep fighting to uncover trends and complete this project. Thank you for teaching me to discuss and represent Sub-Saharan Africa in an appropriate and non-general manner. I also want to thank Dr. Anthony Marcum, who has spent a year during a global pandemic ensuring that the thesis process runs smoothly and that each student in the cohort can accomplish something to be proud of. I am profoundly grateful for his dedication and commitment to helping me write about a topic I am so passionate about.

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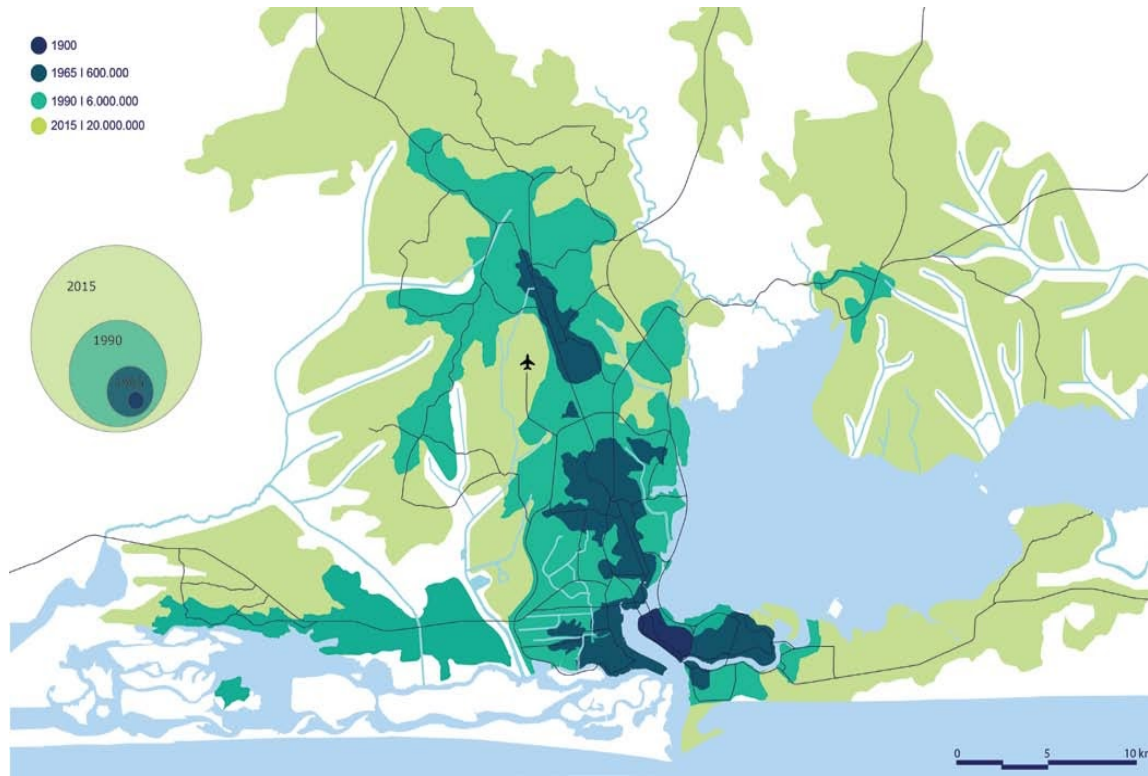
# **Chapter I: Trends of Urbanization in Sub-Saharan Africa**

## **Introduction**

At the turn of the 20th century, only 15% of the global population lived in cities. It was not until the 1950s that urbanization began to take hold in the developing world. As of 2018, more than 55% of the population lives in cities, including 81% of people living in high income countries. By comparison, only 40% of people in Sub-Saharan Africa live in cities (United Nations Population Division, 2018). Sub-Saharan Africa is defined as the countries of the African continent located south of the Sahara Desert. This percentage is expected to change as the African continent is currently urbanizing at the fastest rate the world has ever experienced. Nigeria alone is expected to have 400 million inhabitants by mid-century and currently has an urbanization rate of nearly 5% annually (World Bank, 2019). In this same timeframe, the United Nations predicts that there will be seven African megacities, including Lagos and Johannesburg, with populations of more than 20 million (United Nations African Renewal, 2019). Africa's population is projected to double by 2050 (United Nations African Renewal, 2019).

Sub-Saharan Africa has reached the point of mass urbanization before countries have had the opportunity to industrialize. Infrastructural flaws and extreme inequality that exist throughout the continent are being exacerbated by this rapid growth, as can be seen in the three countries analyzed in these thesis—Nigeria, Kenya, and South Africa. These countries are also at the forefront of technological advancement, renewable energy, and ground-up development and offer a glimpse as to where trends are heading, illustrating the need for public-private partnerships focused on sustainability and renewable energy.





**Figure 1: Urban Growth of Lagos, Nigeria, 1900–2015.** This map shows when areas of Lagos, the largest city in Nigeria, were developed and what the urban population was at the time. The rate of growth is nearly exponential and is projected to increase along a similar trajectory over the coming decades. (<http://futurecapetown.com>)

Nate Laurel first coined the distinction between “developed” and “developing” as *fat* and *lean*, respectively. In a fat economy, like that of the United States, abundance and overconsumption is commonplace and problem-solving goes beyond the basics of sanitation, vaccination, and electrification. By contrast, nearly all countries in Sub-Saharan Africa have lean economies and are considered to be Least Developed Nations, where average gross national income is just \$1,200 per capita compared to \$41,000 in the USA (UNCTAD, 2019). The difficulties stemming from this do have a silver lining, however. African individuals waste less food, owe less money, and maintain the lowest carbon footprint in the world. This thesis does not argue that all government, aid, and modernity is bad for Africa, but rather exposes how formality

bias holds back progress through the tendency of outsiders to recognize solutions to African problems only when they come from governments and other formal organizations. This thesis aims to answer the question of how can formal and informal development coexist to foster an innovative and sustainable urban future for Sub-Saharan Africa. Fat economies must learn from the innovations of lean economies and the ethos of doing more with less—less time, less energy, and less money. Largescale urbanization and the threat of climate change make this a global imperative.

### **Chapter Overview**

Chapter I introduces the region of focus and describes the challenges of urbanization that Sub-Saharan Africa faces. This chapter sets up the dichotomy between formal and informal development and sets the stage for further discussion.

Chapter II will deconstruct common misconceptions and stereotypes about African countries and their populations. After this, the informal economy that is so prominent in much of the continent will be explained and analyzed. Next, aspects of economic mobility and class distinctions will be discussed before ending with a section on the ever-increasing amount of economic segregation and inequality.

Chapter III will go on to discuss the several types of development across the continent ranging from private satellite cities, new technopolises, and Chinese-owned Special Economic Zones. This chapter will focus on how these projects alter urban life and how new developments alter pre-existing cities and communities. This will be followed with details on aspects of gentrification, urban renewal, and foreign-owned infrastructure.

Next, Chapter IV will delve into the prospects of technological advancement as a means to work around formal systems of development and bypass the harmful effects of industrialization. This chapter focuses on the challenges faced by Africans and compares global energy usage, with examples ranging from mobile banking in Kenya and undersea cables in Nigeria to hydroelectric power in South Africa. This chapter discusses many recent development successes around the continent with prospects for the future of continuing the trend of decentralization.

Finally, Chapter V serves as a final comparison of development and innovation and the conclusion of my findings.

### **Argument and Approach**

Formality bias is at the heart of the struggles of African development. Foreign governments, economists, developers, and philanthropists focus on Africa's formal organizations and formal solutions, when the most vibrant, authentic, and economically significant interactions are between individuals and decentralized groups within the informal economy. To understand this, deconstructing stereotypes, understanding local economies, and seeing what is needed on the ground has the potential to achieve more, better, and faster results for sustainable urbanization. Once outsiders better understand daily life for average citizens and the differences between formal and informal economies, a more well-rounded perspective on African development can be achieved.

I argue that due to Western focus on governance and foreign aid, informal social adaptation and individual dynamism have been obscured from view even though they are driving

African development. Africans are finding innovative solutions toward a path to progress for themselves. I want to emphasize the resilience, innovation, and impassioned community leaders of Sub-Saharan Africa by portraying local solutions to the increasingly globalized challenges Africa faces. I aim to challenge the common belief that megacities are the way of the future and propose an alternative that consists of regionalism and less dense urban agglomerations, where urbanization is guided by informal development and local solutions. This thesis is formatted by topic to point out the widespread trends of the region as a whole rather than discussing development on a country-by-country basis.

This thesis will discuss the ways in which reliance on the formal economy and conflict between formal institutions and an informal way of life has led to weak service provision, increased inequality, and an entire society working toward non-governmental solutions. Lack of service provision has been an issue affecting all social classes, but urbanization enables the wealthy to purchase private solutions and take the highest tax bracket away from existing cities as the elite move to new enclaves. Satellite cities, gated communities, and special economic zones allow foreigners and wealthy Africans to work within formalized systems and receive services and benefits through private means. This process excludes the vast majority of Africans, who cannot afford to live in these developments.

Outside these new, exclusive developments remains a multifaceted informal economy filled with innovative minds seeking solutions to the struggles of life in urban Africa. I argue for the notion of smaller, more manageable cities grown through investment in pre-existing urban areas rather than continuing the trend of “clean slate” development and never-ending peripheral growth.



**Figure 2: Aerial View of Spatial Inequality in South Africa.** This photograph shows two worlds existing simultaneously on the same land mass—high-quality infrastructure, greenspace, and large properties right next to highly condensed slum communities outside of Johannesburg, South Africa. (Johnny Miller Photography)

## **Methodology**

In this thesis, I use cases from Nigeria, Kenya, Mozambique, and South Africa as primary examples to critically analyze the distinct types of urban development occurring in Sub-Saharan Africa and examine the clashes between formal and informal economies. All three countries have ground-up developments in the works to accommodate a burgeoning urban population and face similar challenges and opportunities associated with development.

I use academic literature, news media, and sources from the ground from each country to examine the history of regional development in Africa and how it rapidly became global and interconnected to international trade. I investigate trends in development across the continent—from affordable single-family homes to massive mega-projects spanning miles—and correlated exacerbations of inequality due to privatization, land grabbing, and resentment toward the informal economy.

To identify and differentiate aspects of formal versus informal economies, I analyze sources in which lower income Africans discuss day-to-day life and the challenges they face regarding urban living, weak service provision, and displacement. I focus specifically on how individuals navigate informality and create unique solutions such as mobile banking, modular low-income housing, and solar lamps out of necessity.

I also analyze sources that promote mega projects for ground-up development and gated cities as the solution to the alleged failures of African cities. The selected sources include official publications released and circulated by the government, interview transcripts, direct quotes from major news outlets, and books and scholarly articles by experts in the field.

I aim to analyze and uncover the consequences of exclusionary ground-up development. While these new developments offer safer, secure environments where a formal economy can function, they do not solve transportation, housing, and environmental issues that pre-existing cities will be left to face. They also enable a mass exodus of wealthy and upper income Africans that is eerily reminiscent of the White Flight that plagued American cities in the mid-20th century and threatens the longevity of pre-existing cities (Manning-Thomas, 2012).

My research shows that the bulk of physical development on the continent is private or multinational, while the most useful solutions to housing crises, climate disasters, and agricultural issues have been spearheaded by individuals who must deal with the effects daily. Formality defined as structured, often global economic systems, and informality which includes every aspect of unregulated economic activity such as gig economy jobs, are at odds with one another, and while these two worlds develop simultaneously, many people will be left behind.

This realization across the continent has led to informal non-governmental solutions that aim to improve efficiency and quality of life for all Africans rather than just the wealthiest few.

## **Conclusion**

My research aims to analyze the trends of African development and is stated in the introduction to the thesis along with a discussion of my argument and a description of the methodology. In the following chapter, misconceptions and stereotypes about the African continent will be addressed before delving into what the informal economy entails. The concepts of ground-up development, the informal economy, and technology as means to bypass the harms of industrialization are critical to understanding the case studies carried out in this thesis. The case studies and entire thesis illustrate the polarity between economic systems and the inequalities being heightened by exclusionary development in Nigeria, Kenya, and South Africa.

## **Chapter II: Understanding Sub-Saharan Africa**

### **Literature Review:**

#### **Deconstructing Stereotypes**

When westerners imagine Africa, most will picture endless grasslands where wild animals roam free. In reality, almost all Africans would need to visit a zoo or go on a safari to see something like that. In an interview with Al Jazeera, Kenyan author Binyavanga Wainaina discusses the idea of two parallel Africas. One Africa is the one he knows, an urban Africa, while the other is a wild Africa where people live amongst wild animals in complete poverty. Wainaina is a very outspoken and opinionated man who wants the dialogue about Africa to change. While discussions related Africa often center around AIDS, disease, and food or water insecurity, Wainaina is outspoken in insisting that broader discussion is needed to address how hundreds of millions of people are going to urbanize in the next few decades without destroying the planet with pollution and how city planners can allow informal economies to continue and even thrive (Wainaina, 2006).

The most common misconceptions about Africa include but are not limited to the following: Africa is a country, everyone in Africa is poor and black, Africa is dangerous, and, finally, there are no cities in Africa and if there are, they are examples of failed urbanism (Teferi, 2016). While some stereotypes may contain aspects of the truth, generalizations, wariness, and doubt are inhibiting development and perpetuating the widespread misunderstanding of African countries.



African Studies expert, Martin Murray, argues that when people do discuss African cities, there is an “exclusive obsession with urban pathologies and enduring failures—to the exclusion of almost everything else—[that] reduces city life in Africa to a dystopian nightmare, where the eschatological evocation of urban apocalypse feeds into the one-sided perceptions of those ‘Afro-pessimists’ who suggest that cities in Africa, like Africa as a whole, are so hopelessly chaotic and disorderly that they are beyond redemption” (Murray, 2015). While poverty and crime are issues across Africa, as they are around the globe, they do not affect every area of the continent like many people imagine. For example, Luanda, Angola, is home to the richest woman in the world and Kigali, Rwanda, is the 9th safest city on the planet (World Bank, 2018). Konza City, an area South of Nairobi, Kenya, is considered the Silicon Savannah and is home to a bustling tech industry while the Nigerian city of Lagos, West Africa’s new art destination, is a sprawling megacity with a generation of artists, gallerists, and collectors powering the scene (Mitter, 2019).

The drastic social and geographical differences between African cities undermines logical plausibility to create stereotypes about what a city in Africa truly looks like. Some cities are on the coast, along rivers, in the mountains, and even on the edge of deserts. African cities contain remnants of colonization seen in the architecture; many include skyscrapers, gated communities, and shopping malls; and others have famous ancient sites such as the Pyramids of Giza. African cities are also extremely diverse, home to people from around the African continent and around the globe. Durban, South Africa, is a fitting example. The city’s population is 20% South Asian and 8% European and more than eleven languages are widely spoken (Durban Urban Report,

2007). Generalizing African cities is impossible due to their extreme diversity and the nuances of their economies, histories, and governments.

African urbanization has the potential for many benefits, including swift growth of the middle class, an increase in education, and further access to a globalized world (Simone, 2004). Yet, urbanization also carries some downsides. While poverty in rural Africa decreases, urban slums rapidly grow and continually become harder to manage. Aid that is sent to Africa rarely reaches the slums and semi-urban peripheral areas of cities, which are the areas that need investment the most. Instead, western states and private sector actors are focusing their activity and aid within the centers of cities like Abuja, Lagos, and Nairobi, where the corporate and political elite reside and work (Salih, 2014). Private sector collaboration with these urban governments privileges corporate interests over the interests and wellbeing of the total population.

The many stereotypes that exist about Africa lead to misconceptions about what is needed. The reality is that half of Africans live in cities, and that number is increasing exponentially (World Bank, 2019). The bulk of African urban development is focused on vanity projects, satellite cities, and foreign-owned planned cities. Instead of fixing preexisting issues, investments are put toward creating new cities to avoid facing the real problems that average people in Africa face. While these planned cities are modern and claim to offer tons of new jobs, scholars widely contest whether these plans will succeed and whether they will allow for people's current ways of life to continue. New cities undermine the established way of life and the informal economy that many people rely on by forcing residents to adapt to formalized systems through the imposition of Western ideals and standards.

## **Understanding the Informal Economy**

To many outsiders, African cities serve as examples of failed urbanism, filled with poverty, crime, and a backwards way of life. They may differ from Western cities with regard to economy, layout, and political structure, but while many cities across Africa are struggling and poorly governed, they are not as obsolete as many foreign developers claim. Africa's cities function largely through fluid, makeshift collective actions running parallel to proliferating decentralized local authorities, small-scale enterprises, and community associations. Master planned cities disregard the distinct characteristics and unique attributes of history and culture in these places and, by excluding the informal economy, erase a way of life that has dominated for generations.

The key to understanding urban African, is realizing that the majority of jobs in Africa are linked to an informal and unregulated economy which means that most people do not have a set, stable income. Simply put, "The kinds of unregulated production, distribution, and service provision vary widely from city to city throughout the African continent. Likewise, the incomes they yield and the positions they occupy in relation to legal regimes and law enforcement defy simple classification" (Murray, 2013). This type of informal and unregulated economy creates many challenges to the development of cities, including a loss of tax revenue, which limits government capabilities to provide social and infrastructural services. This is one reason new cities are so appealing: they would have a fresh start and avoid some of the issues associated with informal economies. This westernized form of development, however, ignores the lower income people of the city and their current way of life (Rijn, 2015).

Spatial inequalities are ever increasing in African cities as quality of life and access to services vary at an almost unfathomable level. This polarization is created through limited access to natural resources and white-collar corporate jobs and creates a dichotomy in the demands and political preferences of urbanites. Wealthy groups of people can use capital and private investment to obtain goods and services that are normally the government's responsibility to provide. In doing so, these people maintain ultimate control over when, where, and for whom these goods are distributed (Mlambo, Kushamba, and Simawu, 2018). With decreased reliance on the government, the wealthy no longer need to prioritize things such as infrastructure and sanitation when choosing an elected official (Adama, 2012). Instead, aspects of international relations, taxation, and corporate regulation will become of the utmost concern for this demographic, while lower income residents are left to fend for themselves as many basic service provisions become too costly.

The creation of new cities coupled with privatization of service delivery does not offer a solution to the vast majority of urban residents across Sub-Saharan Africa (Murray, 2006). Other solutions for pre-existing cities, like implementing economic regulations such as taxation to collect capital meant for investment in infrastructure, are complicated by the informal economy. Due to the high percentage of urban populations living in slums, the only way to keep these cities alive through an immense period of exclusionary growth is to find a way to make the informal economy work for the government. In Africa, 81% of employment is informal, and the International Labour Organization “stresses the need to facilitate the transition of workers and economic units to the formal economy, to promote the creation, preservation and sustainability

of enterprises and decent jobs in the formal economy and to prevent the informalization of formal economy jobs” (International Labour Organization, 2018).

Shifting the economies of hundreds of millions of people from informal to formal will be a chaotic undertaking. A large informal sector is associated with low productivity, reduced tax revenues, poor governance, excessive regulations, and poverty and income inequality. A legal framework is necessary to develop informal markets in order to remove the formal market constraints affecting these informal enterprises (World Bank, 2018). A solution must include oversight of the informal economy so that people may maintain their way of life while the government collects minimal taxes to ensure basic service provision. This tax base from such a substantial portion of the population would amount to enough capital to jumpstart investment into the pre-existing cities (Olopade, 2014).

Africa is faced with the triple threat issue of discovering new ways to move hundreds of millions of people into adequate housing while preserving their way of life without creating too much pollution. As more people continue to move to the cities, housing and infrastructure are going to become larger problems. The first step toward the advancement of African cities is to understand and acknowledge that their cities are not failures and figure out how to build a world-class city based around African logic rather than following the steps of the west.

### **The Middle Class Myth**

The world is entering a second round of mass urbanization, this time on a scale that has not been experienced before (Pieterse, 2014). To view African development through a Western lens is often problematic and inaccurate and focuses too heavily on what appears to be lacking. Instead, a focus on societal differences and the trends of the past few decades will show whether

the emerging middle class is a myth or is indeed a reality that has the potential to incite widespread social and economic change. When discussing the African middle class, it must be noted that the majority of jobs in Africa are linked to an informal and unregulated economy and that most people do not have a set and stable income. Having an abundance of cheap labor and an abundance of resources to extract, the wealthy and the industrialized world rely on these inequalities to fuel consumer capitalistic society. The reality is that a true, growing middle class can never come from an economy based around exporting raw materials and will depend instead on further development, whether that be industrial or technological (Olopade, 2014).

The growth of the African middle class is one of the most contentious current topics among scholars of African development (Stein, 2020). The African Development Bank defines the African middle class as those spending between US\$2 and US\$20 per day. In the developed world, this figure would be too low to be classified as middle-class spending, but the ADB deems this calculation appropriate due to the lower cost of living on the world's poorest continent (Stein, 2019). While the purchasing power parity is real, calculations of actual costs of living must be accurate to understand the value of money in a specific location. According to Deloitte, the percent of the Sub-Saharan population considered to be middle class has been steadily rising from 111 million, or 26%, in 1980 to 151.4 million, or 27% of the population, in 1990, with a further surge to 196 million in 2000 and a dramatic increase to 313 million in 2010 equating to 34.3% of the population (Deloitte, 2012).

South African political economy professor, Patrick Bond, argues that Africa's rapidly growing middle class may be a myth—that only the upper class and lower classes are expanding and, with that, so is income inequality. Bond and Ncube's data show that less than 5% of

Africans spend more than US\$20 and that the number is shrinking rapidly (Bond, 2017). Rural poverty is decreasing not due to an increase in wealth but rather to mass migrations to cities (Bond, 2017). Another potential explanation is that this false sense of economic growth could stem from the movement of the elite out of society and into separate enclaves. This results in the growth of informal housing and the informal economy. New jobs are seldom being created and FDIs rarely reach the populations that need them the most. The bulk of the investments made across the continent are benefiting the wealthy and the developed world while keeping the African poor impoverished.

While some scholars argue that Africa's middle class is growing quickly, all agree that the slums are growing faster (UNCTAD, 2020). An important question that must be addressed is, would African people prefer to live in low-income housing rather than slums? Further, are running water and electricity worth giving up the community that they built? (Rondinelli, D.A., 1990). Low-income housing in these cities would be sterile and condensed, almost taking away the humanity and individuality of these homes. The United Nations through their Housing Department defines a slum as a household in which the inhabitants' lack of access to improved water sources, improved sanitation facilities, sufficient living area, housing durability, and security of tenure (UNMDGI, 2020). Furthermore, without land ownership there is the threat of eviction and slum households are often excluded from the formal economy, causing residents to become socially outcast from the larger society while being subjected to greater instances of crime and other informal or illegal activities (UNMDGI, 2020). Additionally, without infrastructural services and maintenance, informally occupied properties pose greater risks of

environmental degradation, especially if they were built in an already environmentally precarious area.

Similarly, Henning Melber argues that this distinction of the middle class is inaccurate and that it is fantastical to imagine how, based on the living costs in Africa's urban centers, a \$2-a-day threshold drastically shifts someone from the \$1.99 margin as criteria for poor into a middle-class existence. He further argues that "all those not starving are nowadays considered middle class and that it is unrealistic for the people of this income level to play a pioneering role in the continent's future development" (Melber, 2016). Perhaps \$2 a day can suffice for an individual in a remote region, but in Africa's largest cities, \$2 a day gets virtually nothing. The cost of living in cities such as Kigali, Luanda, and Kampala, for example, is as high as in New York, London, and Hong Kong (Olopade, 2014). The threshold of middle-class income defined by Deloitte would be considered a joke to those living in these cities, where a cup of coffee can cost more than \$2 just as it would in the United States or Europe. Claiming that 34% of Africans are middle class is completely unrealistic, especially when that metric is based around false assumptions of what being middle class means in the African context. United States Data and Statistics projects that half of its citizens are middle class, and the United States is the richest country in history with a formal economy (US Census Bureau 2020). How is it possible that a continent with a collection of the world's poorest countries, with economies that have not diversified, have a middle class only 16% smaller than a global powerhouse? Africa has a population of four times that of the United States. On this scale, there would be more than double the amount of middle-class people in Africa than in the United States, which is absolutely not true.



Some other common defining characteristics of the middle class are the widespread ownership of major household durable goods, such as refrigerators or automobiles, an increase in recreational time, and political influence (UNCTAD, 2020). These characteristics are comparatively lacking in what is considered Africa's middle class (Stein, 2019). In Kenya, there are only 30 cars per 1,000 inhabitants, a number that has remained stagnant for the past decade (Deloitte, 2019). This concept of a class defined by consumption patterns implies a considerable homogeneity, not only regarding socio-economic position, but also with respect to lifestyle, attitudes, and political aims.

While there has undoubtedly been economic growth and the movement of millions out of poverty, claiming that 34% of people are now middle class is ludicrous (Olopade, 2014). Another metric for measuring a population's economic growth is through the usage of telecommunication services. In the past, this major increase in phone ownership would signify increasing disposable income, but in reality, this becomes decreasingly true as reliance on and need for smartphones increases. Today, one billion Africans have a subscription to a telecommunication network, and that number is increasing, especially in rural areas. Rural areas are not becoming more affluent, but rather phones are becoming more of a necessity, especially as mobile banking takes over as the primary form of transaction (Deloitte, 2016). It is common for entire families to share one mobile device while each person possesses their own refillable SIM card (Olopade, 2014). Remittances from abroad also skew the reality of economic growth in Africa because that increased capital is not gained through the creation of higher paying jobs but instead results from increasing brain drain from the continent.

Much of the hype surrounding Africa's growing middle class is misunderstood and does not actually signify the extreme economic growth that many presume to be the case. Despite this, the middle class myth is driving development and foreign investment that is reshaping the urban landscape of Sub-Saharan Africa.

### **Economic Segregation**

The current state of urbanism in Africa is one of the least disputed topics, and scholars agree that problems include overcrowding, poor infrastructure, lack of land-use planning and code enforcement, and increasing traffic congestion; however, these scholars vary in their proposed solutions (Davis and Monk, 2007). Urbanization policies in Sub-Saharan Africa appear to prioritize multinational corporations and the upper class over the needs of the vast majority. African governments will exacerbate this trend if they continue to focus on providing for the private sector. This proves eerily reminiscent of white flight and mass suburbanization seen in the United States during the mid-twentieth century as classes clashed (Manning-Thomas, 1997). Even if the number of people with a middle-class income is not as high as some scholars might argue, there are large economic shifts occurring that have the potential to lead to some profound social changes.

This paper argues that weak state capacity contributes to spatial inequality due to governments and wealthy individuals turning to private sector actors to effectively provide formerly public works, thereby creating wealth-based exclusionary tactics. In many parts of the continent, these exclusionary practices go a step further. A common trend in African cities is the relocation of wealthy individuals to gated enclaves often referred to as satellite cities. Many people with the means to are leaving urban centers for new developments due to crime, poor

infrastructure, and a resentment for the informal economy (Murray, Myers, and Garth, 2006).

This new era of urban regeneration differs from those of the past as the focus is on constructing entirely new cities from the ground up rather than rehabilitating the urban landscapes that already exist (Murray, 2013).

One of the greatest challenges that comes from such a large informal economy is the small tax base, and satellite cities offer a solution for those with the means to relocate. As wealthy people relocate and privatize healthcare, education, and other utilities, governments suffer from the loss of their highest income taxpayers. Murray goes on to argue that there is a direct correlation between the increased creation of satellite cities and the deterioration of the existing built environment. If African governments focus on infrastructure for private development, low-income Africans and those working in the informal economy will undoubtedly be left behind. The private sector is already using its capital and influence to redesign the living situation of the elite, but this comes at a cost with virtually no benefit to the bulk of the population.

Many authors argue that African cities are prime examples of “failed urbanism” and that this “clean slate” approach to development will allow city builders to bypass the current state of urbanism in Africa. If governments allocate their budgets to support privatized and exclusive urban planning, inequality will be exacerbated as those living in existing cities are disenfranchised. One argument is that these experiments of ground up development will offer postindustrial, hypermodern, high tech cities bustling with service industries and skilled workers who can live, work, and play in a “self-enclosed, safe, and secure environment” (Cox, 2006). Other scholars argue that the continent is not ready for a postindustrial era based on the idea that

industrialization is the key to prosperity and wealth generation (Massoud, 2009). Data show that urban slums are growing exponentially and are becoming more challenging to manage and provide for, but instead of allocating funds to directly alleviate poverty and improve the lives of millions, money is being spent on vanity projects and ways to encourage future private investment (United Nations African Renewal, 2019; Murray, 2017).

A more optimistic view is that, wherever there are jobs and a sense of opportunity, people will follow. This optimistic view on blank slate development means that the new roads to satellite cities might allow job seekers access to work in these new enclaves. However, this inevitably leads to informal fringe settlements that lack infrastructure and sanitation arising outside the gates of new developments, further exacerbating and displaying the extreme growing inequality. Most development projects on the continent only serve to improve the lives of the elite, while exploiting the readily available cheap labor of the informal economy. By privatizing the delivery of former public services, the areas predominantly filled with corporate citizens, which in this context often means those working within the oil, technology, and raw material industries, will be the only populations provided for (Massoud, 2009). This group has complete access to services such as sanitation, healthcare, and transportation within their formalized enclaves, while lower-income citizens within the semi-urban peripheral areas of the cities cannot afford the newly privatized services.

If this trend of relocation continues as it appears to be across the continent, a power struggle between the lower classes involved in the informal economy and the exclusionary upper class is inevitable. According to Acemoglu and Robinson, with democratization and redistribution of power increase as the middle class grows, wealth composition becomes more

saturated and globalization increases (Acemoglu and Robinson, 2015). If this middle class is a myth, as wealth stays concentrated at the top and the wealthy remove themselves from civil society, those considered to be the middle class (those making more than \$2USD per day) may still inherit the power that comes along with that title even without a substantial proportion of the wealth.

This globalized, interconnected economic system stemming from the financialization of commodities ensures cheaper prices on manufactured goods by continuing exploitation of the cheap labor and capital-desperate economies across Africa. This is a difficult trap to escape due to reliance on foreign investment and continued mutually beneficial trade relationships, but African economies cannot industrialize or become self-sufficient on an export and extraction-based economy. Agricultural and sustainability-focused investments have long maturing periods but will have extremely high payoffs for the continent and help move Africa away from its globalized trap and toward a path of self-sufficiency and economic freedom. A large issue is that foreign nations offer aid and loans in return for lower prices for raw materials and have no interest in altering current trade agreements. African nations that rely heavily on commodity exports are the most vulnerable to negative terms-of-trade shocks and commodity price volatility, which can negatively impact development through many channels (Stein, 2020).

## **Conclusion**

The redevelopment of African cities is a massive undertaking that will require immense amounts of capital and many years to implement. African cities should not be compared to the cities of North America and Europe because nearly everything about them is different, including

the economic systems and the definition of what it means to be middle class. The biggest obstacle facing African cities is that they are inherently different but, in order to start improving, those differences must be accepted rather than combatted in attempts to mimic Western development. The option of planned cities appears to be the easiest solution but essentially gives up on the millions of people who cannot afford to live in these cities.

Author Dayo Olopade attempts to consolidate the struggles of living in Africa and the savviness that is developed as a result into a single term: kanju. She argues that living with uncertain electricity, clogged roads, and nonexistent social protections produces an extraordinary capacity for making do (Olopade, 2014). In Yoruba, kanju literally means “to rush or to make haste,” which Olopade argues includes creating practical solutions and doing more with far less. Kanju is born out of everything outsiders pity about Africa, such as lack of opportunity and choice, but these obstacles lead to an intense work ethic and products and people that are changing the trajectory of development. It is rare to hear about what ordinary Africans are already doing to help themselves, but resilience and pointed irreverence towards corruption and imposed institutions have led to innovations spearheaded by ordinary people in industries ranging from healthcare, film, and housing to tech startups and agricultural operations.

It is important to note that kanju differs from resilience in that resilience entails returning to a prior status quo. Kanju is about leapfrogging ahead and generating new ways to problem solve in the face of insufficient resources and corrupt, ineffective central governments. This form of empowerment and practicality is out of alignment with much of the formal development occurring across the continent, which disregards the power of kanju and follows the status quo of Western-style development.

## **Chapter III: Types of and Drive for Development**

### **Introduction**

Sub-Saharan Africa is facing several issues with regard to urban development, including lack of desire to live in pre-existing and growing megalopolises and the growing exclusionary trend of satellite cities and special economic zones (SEZs) (Chen, 2015). Even many rural migrants who have moved to cities feel a growing resentment toward urban life and desire to move back to the countryside due to less opportunity for self-sufficiency (Awumbila, 2014).

In addition to privately run satellite cities and Chinese-owned SEZs, a third common form of urban development is small-scale neighborhood renewal. This chapter will discuss how these approaches came to be and analyze the socioeconomic impacts of each type of project. While there are other forms of urban development in progress, these three have only been in the works for a few decades and are relatively new to the continent. Comparing and contrasting these forms of development illustrates the ways in which trends of exclusion, exploitation, and privatization can have implications for the future of African urbanization.

### **Satellite Cities: An Overview**

The controversial “charter cities” or “satellite cities” movement, championed by economist Paul Romer, advocates a fundamental restructuring and regeneration of global urbanism (World Bank, 2019). Romer’s vision of the charter city mirrors the concept of a charter school. These spaces function as independent incubators of modern and cutting-edge urban planning, but not without their qualms. They are a bit of an homage to successful city-states such as Singapore or Hong Kong (Olopade, 2014). These cities come to fruition on the African

continent through governments' bestowal of virgin land for the purpose of building "urban free enterprise zones" that run according to the rules and practices that sociologists and economists see fit (Mallaby, 2010). Satellite cities offer orderly, globalized spaces that are not incorporated into the current systems, policies, or challenges of the host country. By building physical barriers and imposing formal economic systems, separate societies can exist in the same geographic location as extreme poverty and feel as if they are a world away.

Romer's vision includes mixed-use neighborhoods boasting ultramodern architecture with effective utilities for water and electricity. Each city will have location-appropriate industry in a space where "blackouts, bucket baths, begging, and crime will be no more" (Olopade, 2014). These cities physically exclude poverty from existing within their borders but do not actually create solutions to the rampant poverty that will exist right beyond the city walls. Like a charter school, Romer's metropolis offers a gradual set of changes to serve as a counterpoint to the disorganized or corrupt status quo. Governments do not have enough resources to start improving cities on their own, which is why foreign investments and development of planned cities from the ground up serve as the most common solutions (Van Rijn, 2015). If young people opt into the charter city, it is an instant leap to a better life, but unfortunately, the bulk of development in Sub-Saharan Africa caters to multinational corporate investors, local business elites, and affluent consumers (Murray, 2015).

As more people continue to move to cities, housing and infrastructure become larger problems. Until doing so proves profitable, it is extremely unlikely that the private sector will use its means to eradicate homelessness, decrease the number of informal settlements, and build affordable and efficient public transportation for urban Africans. Only through direct government



intervention or a powerful public-private partnership will this type of infrastructure improve for average citizens. The lack of government service provision such as waste removal, reliable electricity, and public transportation, coupled with the elite class's growing resentment for the informal economy, has led to these extreme measures of starting over. This process has been eased by the readily available exploitable worker from the informal economy and access to cheap land and building materials (Noorloos, 2017).

Satellite cities are spreading rapidly around the African continent due to the appeal of privatization of all aspects of life to create an insulated community with a formal economy and top-tier service delivery. Satellite cities lessen the need for a national government because all goods and services, including healthcare, education, and waste management, are privately controlled within the city limits. Over the past two decades, satellite cities have emerged in every corner of the continent and are praised for being a successful option to bypass “failed urbanism,” a term touted by many scholars of African development in reference to the infrastructure and economic issues of preexisting cities (Murray, 2017). This “fresh start” approach to development allows city builders to circumvent the current state of urbanism in Africa by building comprehensively planned, self-contained enclaves from scratch.

Although most planned cities are privately funded, they are inserted into diverse and dynamic political economies. These built environments tend to implement post-democratic, private sector-driven governance that makes them unsuitable for solving the service provision and poverty alleviation problems of urban Africa. Being so far removed from the realities of urban life in the host country, these communities will not face the same issues as the rest of the country and will continue to rely on the private sector for further development. They are

essentially gated communities for the middle and upper classes with the potential to exacerbate urban inequality by increasing expulsions and enclosures of the poor, public funding injustice, and socio-spatial segregation and fragmentation (Noorloos, 2017).

### **The Case against Satellite Cities**

So-called “Afro-pessimists” suggest that cities in Africa, like Africa as a whole, are so hopelessly chaotic and disorderly that they are beyond redemption (Garth, 2006). Arguments like this promote the idea that preexisting urban environments cannot be salvaged, which further promotes the belief that starting over is the only approach. However, African satellite cities will not solve the growing issues that urban Africa is faced with. Despite relying on cheap labor from nearby informal economies, they do not offer any form of poverty relief or even affordable housing and keep out poverty by physically excluding the impoverished. Far from a solution to urbanization challenges, satellite cities instead create a new and even more extreme form of economic segregation that offers a more efficient, formal, and privatized lifestyle for only the upper echelon of society.

Even for those with the means to live in one, satellites cities are not without drawbacks. As African development scholar, AbdouMaliq Simone explains, “Cities are not closed spaces of confinement but open terrains of opportunities.” But, these planned cities are exactly the opposite (AbdouMaliq Simone, 2004). They offer little to no social mobility because in seeking to eradicate the issues of pre-existing cities and the informal economy, they monopolize and privatize every aspect of life in a contained space that can be easily monitored and controlled.

This complete economic segregation stops any form of potential trickle-down economics and disenfranchises and excludes those who cannot afford to live in these bubbles.

For example, Waterfall City, outside of Johannesburg, South Africa, owns everything from the water company and security to schools and restaurants. This development is also completely enclosed by a cement barrier and barbed wire fencing, which furthers the idea of an in-group and an out-group that is actively excluded and even feared. As African and urban studies scholar Martin Murray puts it, “In this instance the process of deterritorialization has resulted in an institutional vacuum that has enabled real estate developers at Waterfall City to effectively delink from the existing normative order of the ‘public city’ and to establish their own privatized regimes of centralized control... The planned rollout of Waterfall City signals how extraterritorial power can produce and justify a new kind of enclave urbanism that bears little relation to conventional practices of city building” (Murray, 2017).

### **The Case for Satellite Cities**

A positive outlook on these developments focuses on the offerings of postindustrial, hypermodern, high tech cities bustling with service industries and skilled workers who can live, work, and play in a “self-enclosed, safe, and secure environment” (Herbert and Murray, 2006). Enclaves like Waterfall City are not just cities but rather machines (Murray, 2015). This kind of project reaps profit from every aspect of life and will act as a city-state. Every aspect of society is planned, mapped out, and there is little room for individuality. Formality through privatization and security will offer the stability that pre-existing cities on the continent currently lack but at a high monetary and social cost.

Technology is also fueling hypermodern private development for both multi-national corporations and private satellite cities that would not be possible without the innovations of the past few decades. Sixty kilometers outside of Nairobi, Kenya, ground has been broken at Konza, Africa's first Technopolis. It currently sits on an unoccupied 5,000-acre slice of the savanna. Global firms like Samsung Huawei and Toyota will set up offices there (Manson, 2013). Upwardly mobile Kenyans will buy homes built to their specifications with water, electricity, and high-speed rail. All the goods and services that the government has deprived ordinary Kenyans of will be diverted into the 20-year, 10-billion-dollar project. As a special economic zone, Konza will have preferential tax and zoning treatment that excludes informal settlements and reinforces formal economic systems (Manson, 2013). Technology and a globalized economy allow cities like this to exist in virtually any environment. As seen below, Konza City emulates a Western style of development that prioritizes aut centrism and corporate office space. It hopes to become a global city, and therefore the rendering of the city looks as if it could be anywhere in the world.



Figure 3: Konza City Rendering. (Konza.co.ke)

### **Informal Settlements and Second-Tier Cities**

As the trend toward satellite cities has swiftly taken off, with dozens of projects in South Africa, Nigeria, and Kenya, the number of slum dwellers IN Sub-Saharan Africa has simultaneously surpassed 200 million in Sub-Saharan Africa (World Bank, 2019). The overcrowding of Africa’s largest cities creates a humongous drain on both public and personal resources, which further exacerbates the issues that informal settlements face. The truism of global urbanization seems to be “the coexistence of slum areas hobbled by limited public services and shelter and boundless disease and crime” (Vidal, 2010). Each major city focused on in this writing has its own infamous slum settlements: “Nairobi has Kibera, Baba Ndogo,

Kawangware, and Mathare. Lagos has Makoko, the stilt city floating inches above the lagoon for which the city is named. Johannesburg has Hillbrow and Alexandra—crowded, dangerous, and omitted from the continent-leading formal economy” (Olopade, 2014). What is to say that these informal settlements will not relocate to surround the satellite cities that low-income residents will inevitably be called upon to build? This is already the trend in Johannesburg, where informal settlements encircle malls and commercial suburbs filled with “stylish apartments and vegan brunches for increasingly wealthy locals—black and white alike” (Olopade, 2014). While aspects of the satellite city may sound appealing and enable certain groups to move into the future, the projects do not offer a solution for the hundreds of millions of people who will not be able to afford to live there or a solution for the incomprehensible scale of urbanization, population growth, and subsequent sprawl of informal settlements the region has yet to experience.

As an alternative to popular speculation by the United Nations that Africa’s largest cities will become megalopolises with upwards of 20 million inhabitants, the idea of “villagization” has been recently floated by scholars, including architect and urbanist Rem Koolhaas. Villagization refers to “the grouping of population in centralized planned settlements” that will at some point in time be connected by high-speed rail (Lorgen, 1999). This option places less of a burden on local urban governments by easing the strain of resources and lack of service delivery while also putting a damper on urban sprawl. In addition, Africa’s second-tier cities have long been overlooked. Places like Nakuru in west-central Kenya and Durban, South Africa, have booming populations but are not at the same scale as the continent’s largest cities. These cities have the potential to be better, offering residents more than a “hardscrabble slum experience...

Seen in this light, the extraordinary realignment of Africa’s booming population is an opportunity like no other” (Olopade, 2014). Second-tier cities may prove to be the most important for lower income development, since cities at this scale and by virtue of their youth can be built better and out of more firm, efficient, and environmentally conscious materials. There is potential to introduce new technology into the existing urban landscape and to improve infrastructure there as opposed to building from the ground up. It is more environmentally harmful to start over than it is to rehabilitate what has already been built. Further, this method of improvement does not explicitly exclude the bulk of the population or force new economic structures upon people. Instead, it preserves culture and history and does not lead to extreme spatial inequality.

### **Housing Crisis and Private Solutions:**

South Africa is a country where housing is a state-sanctioned right, meaning that every citizen is entitled to a shelter from the elements, a place to eat, sleep, relax, and raise a family (Pieterse, 2014). South Africa's government has fallen far short of its constitutional aspirations with more than 500,000 people on a waiting list for public housing in Cape Town alone (Olopade, 2014). Individuals on the waiting list have little choice over where they will eventually be settled, and housing has been described as “miserable tracts of government housing lining the outer rings [of the city]” (Olopade, 2014).

Moladi, an affordable housing alternative, attempts to keep South Africa’s promise of housing by taking matters into their own hands. Moladi is an example of innovative consumer product development doing a better job at government provision. Slums will not just disappear,

as much as the wealthy may wish they would, so instead, affordable housing must be built and designed better. Moladi offers privately run affordable housing with access to water, electricity, and choice within the reach of millions of those in the striving class. Moladi improves the old in South Africa by building dignified modular homes in under a week. Each structure is specific to the consumer's needs, whether commercial or residential. "Trained contractors will set up the housing mold to accommodate plumbing and wiring and fill it with a concrete like mixture. After two days the walls are dried and done and the plastic vanished. No more unfinished homes will be saved for, brick by brick, no more porous scrap and mud walls putting families at the mercy of flooding, collapse, or otherwise" (Oh, 2015). Moladi proves that safe, affordable housing in preexisting cities is a possibility, and that there is high demand for such an option. Such improvements to the built environment are fundamental for evolving cities and the eventual eradication of slum settlements.

### **Urban Renewal and Gentrification: The Case of Johannesburg, South Africa**

A common theme in African cities is that wealth and industry are leaving urban centers for suburbs and new developments due to crime, poor infrastructure, and a resentment for the informal economy; but, a major exception to this trend of diaspora is gentrification and neighborhood redevelopment (Nevin, 2015).

Gentrification is complicated; it helps improve the economic stability and desirability of cities but often excludes those who cannot afford to be a part of it. Gentrification can be defined as the process of investment and development in low income and industrial areas that often leads to the displacement of residents. A reinvestment in declining urban areas and a decreasing



amount of sprawl are the two largest benefits of gentrification. Sadly, lower income residents, oftentimes minorities and immigrants, are priced out of their homes and even forced to shut down their businesses. “Whether blatantly stated or not, city developers who are attempting to rewrite the city’s racial [and economic] spatial politics are doing so primarily through strategies of gentrification. And yet gentrification is a process that often re-inscribes formations of class difference, ultimately doing little to unseat South Africa’s urban inequality” (Nevin, 2015). The architecture and culture of a neighborhood are often what lead to the interest of real estate developers, and removing the people who make a place what it is, is not principled.

One example of successful gentrification with limited displacement is the Maboneng neighborhood in Johannesburg. Maboneng is a multicultural area in the city center that offers an eclectic mix of visitors and residents. Maboneng is one of the most inclusive areas in Johannesburg, both racially and fiscally (Mela, 2015). Inner city Johannesburg is known to be extremely dangerous and impoverished, having experienced a mass exodus of wealthy people post-apartheid. But in Maboneng, “From what one can see, every ground floor retail space is occupied. There are many corner shops selling basic food and supplies, much of which is Halal. Furthermore, informal traders set up on the pavement, selling sweets, cigarettes, and a small selection of fresh fruit. Shop owners sit outside their shops too, chatting to the informal traders and to passers-by. Children join the throngs of people after school, and often sit on the pavement playing games, doing homework, or talking” (Nevin, 2015). Encompassing many aspects of African culture, using pre-existing infrastructure, and offering a safe, mixed-race neighborhood, Maboneng is a splendid example of how urban revival in Africa can look when pre-existing spaces are invested in rather than fled. Maboneng embodies Africa as a whole through its

diversity and the way structure and informality coexist in a hybrid space that is both modern and historic. This neighborhood has a continued character and is an island of regulated mutuality. While this area is highly regulated just as other African urban enclaves are, it is not as blatant and discriminatory. The area caters to a young black middle class and offers a safe and open space for the LGBT community filled with shops, bars, restaurants, and street vendors. Spaces like this are not common in many parts of Johannesburg, especially in the surrounding settlements.

“To make a good city,” Wilhelm-Solomon says, “the middle income and the rich must also be looked after in addition to the poor” (Solomon, 2016). Controversially, Liebmann questions whether the emerging neighborhoods of the inner city are the right place for everyone, or if “some people should be in the inner city and others should be on the outskirts of the city” (Walsh, 2013). In 1990s Johannesburg, the whites left the inner city and low-income black people moved in. Today, white suburbanites say, “I wanna live in a hip cool neighborhood like New York! Not my parents’ suburban house! And why shouldn’t I?” (Walsh, 2013). With the capital and power to gentrify inner city neighborhoods, wealthy and predominantly white South Africans want to take back parts of the city that their parents gave up for a suburban lifestyle of gated communities. The worry is that satellite cities and sterile, hypermodern environments may take away from the positive aspects, culture, and way of life that comes from unregulated and chaotic urban living. Johannesburg would benefit greatly from investment, but gentrifiers must ensure that lower income people are not displaced and neglected. Through rehabilitation, property rights assurance, and creation of mixed-used developments in pre-existing urban environments, this is possible.

There is a current polarity between two groups of wealthy in Johannesburg: those who want to continue life in their “utopian enclaves” and those who wish to live normal lives in a safe neighborhood like Maboneng that is in a pre-existing city. The scene is explained by Martin Murray: “When the residents of these sequestered enclaves are forced to leave their safety zones, they do so within the protective armor of their cars, dreading every moment they are “out there” in the illegible public spaces of the city, exposed to the mercy of unknown predators who lie in wait for victims. In the popular imagination, these public spaces are the perceived “war zones” of the city— dens of iniquity and violence that threaten the very existence of those seeking a safe haven in their private fortresses” (Murray, 2008). The gated communities for the wealthy that surround Johannesburg offer a lumpy and disconnected environment. These enclaves are islands of wealth in an ocean of crime and poverty. The measures people take to remain separate from their old communities foster an increased fear of crime and poverty, which further promotes the desire for division and economic segregation.

Another hybrid example of development is Melrose Arch, just north of inner-city Johannesburg. This community offers a genuine mixed use, urban development project with a focus on walkability and pedestrian-friendly environments where residents and visitors can live, work, and socialize in a safe and properly built neighborhood. As Johannesburg grows, it becomes more fragmented with mini urban centers and shopping malls instead of an economically healthy urban core. Compared to the “unfettered suburban sprawl and steady increase in the numbers of lookalike, gated residential estates on the metropolitan fringe,” Melrose Arch offers an improvement but still fail at achieving a mixed-income environment. In contrast to the stated goals of New Urbanism, Melrose Arch appeals to a narrow spectrum of

income mixing in its client and customer base and very little class diversity in its residential components (Murray, 2013). This development offers a small solution to the scattered and disconnected enclaves that comprise upper class Johannesburg, but while Melrose Arch is not a gated community, it is also not an economically or racially inclusive place. Wealthy South Africans spend the vast majority of their time indoors or travelling from one protected space to another (Southern, 2018). The opportunity to walk freely and still feel protected is what is so appealing about Melrose Arch, and Maboneng as well.

Even though apartheid ended nearly twenty-five years ago, Johannesburg is still extremely segregated, and racist policies toward black residents, men in particular, are carried out by private security companies. These private security and police companies have become commonplace in Johannesburg and in many satellite cities across Africa (Murray, 2017). The companies can ensure higher tech and reliable security methods while removing the threat of corruption and reliance on the state. These private companies have more data than the police, employ more than three times as many people, and are completely replacing public police in satellite cities. Private security companies do everything from removing squatters to preventing white collar crimes like embezzlement (Clarmo, 2013). These companies make up more than 2% of the South African GDP and benefit greatly from the “fear industry” (Murray, 2017). The fear of crime coupled with the desire to create a physical barrier between the outside world leads to the construction of gates and walls and the hiring of these security companies. For residents to feel safe, and to continue the separation of social classes, “Whether on foot or in a car, black males are stopped and questioned about their activities. They are often patted down, and their bags are examined. According to South African law, private security companies are legally

allowed to stop people” (Clarmo and Murray, 2013) Private security is a way to ensure safety and protection but serves to prolong racial segregation and enforce economic segregation on a local scale.

Post-apartheid Johannesburg has transformed into a maze of disconnected zones of wealth surrounding an impoverished and dangerous inner city. If trends continue as they are, with cities across the continent prioritizing vanity projects and the wealthy leaving for satellite developments, Johannesburg—which has seen the most Western influence and has been struggling with redevelopment for decades—should be viewed as a preview of what the future holds for urban Africa. African cities are building from the ground up, removing industry and wealth from cities by creating new spaces where the old city is no longer necessary. This is a new form of development that is completely different from the United States’ suburban model as urban life is still being prioritized, just on a new scale (Sawyer, 2021). Aside from gentrified areas, inner city Johannesburg has become a vertical informal settlement as squatters take over buildings. If mass vacancies arise in other African cities, they will be left with the situation Johannesburg is facing today, with the exception of race-related issues specific to Johannesburg that stem from apartheid.

### **Chinese Involvement: Special Economic Zones and Infrastructure**

China currently exports \$85 billion of goods to Africa annually and imports \$62.8 billion, making them the continent’s largest trade partner. The motivations behind Chinese economic ties to Africa are comparable to those of the United States (Sun, 2014). One major similarity is the focus on extracting natural resources and raw materials from Africa to conduct value addition

through refinement or manufacturing back in China. Nigeria, for example, does not have the capacity to refine their own oil, which creates the necessity for a multifaceted relationship with China where Nigeria has little bargaining power (Sun, 2014). There is a direct correlation between the aid and investment received by an African state and their cooperation with China on the political stage. The “no strings attached” policy led Nigeria to opt for a \$9 billion Chinese-led railroad extension in 2007 instead of a World Bank proposal that attached anti-corruption measures to their investment (Stein, 2020). Instead of trying to change or influence African policy, China would rather have allies on the international stage and ensure stable supply chains. Diplomatic relationships have involved African countries voting for China to host the Olympics and choosing not to recognize Taiwan as a sovereign state (Swaziland is the only remaining state that recognizes Taiwan) (Mlambo, Kushamba, and Simawu, 2018).

Multiple reports claim special economic zones which are designated areas with unique rules and regulations that differ from those of the host country, “were intended to help China’s own restructuring, allowing the labor intensive, less competitive, ‘mature’ industries, such as textiles, leather goods, and building materials to move offshore” (African Development Bank, 2010). Since these zones were initiated, they have not increased Africa’s 3% share in global commodity exports (ADB, 2010). Nigeria’s once thriving textile industry has become nearly extinct as refining cotton grown in Nigeria is cheaper to do in China or in SEZs (Stein, 2020).

Much like the United States, China has capitalized almost exclusively on Africa’s comparative advantage in resource extraction. Petroleum makes up 62% of African exports to China, and ores and metals account for another 17%. In contrast, a third of Chinese products entering Africa are textiles, apparel, and footwear, and another third is machinery and equipment

(Rotberg, 2008). China's comparative advantage is also highlighted in their choice of trading partners, as the top 90% of export origins in Africa are oil producers (excluding South Africa, which almost exclusively supplies minerals and ore), while the recipient countries are far more diverse and determined by the largest accessible markets (Rotberg, 2008).

The immediate question raised from this distinctly binary and extractive exchange is whether Africa will find it helpful and sustainable. Extractive industries have fewer development benefits than those that put more people to work, require more human capital, and have greater value addition (Al-Marhubi, 2000). This reality has pressed scholars and policymakers to investigate what effect Sino-African trade will have on future African product diversification. The current projection is that, because they supply complementary resources to one another, Africa will continue to be trapped as a resource supplier to China (Bruatigham, 2011). This is due to Africa's comparative commodity advantage and because cheap Chinese manufacturing outcompetes African industrial efforts. South Africa's government estimates that 60,000 people have been unemployed in the textile industry due to an influx of Chinese goods (Alden, 2006). Furthermore, China has been classified as a major threat to 82% of exports in Zambia, 73.4% of exports in Mozambique, and 64% of exports in Malawi (Mlambo, Kushamba, and Simawu, 2018).

Fortunately, there are elements of this relationship that support a more positive outcome. First, natural resources could serve as a launching point for value addition. If African governments were to use their resource abundance and revenues from trade to move more of the supply chain into the continent, manufacturing more valuable goods such as aluminum would be possible (Rotberg, 2008). Second, it is possible that Chinese supply chains could loop back

around to Africa as some more developed nations build vertical complements to Chinese products. In these cases, African countries use Chinese products as inputs and experience greater pay-off from fostering their own value addition. In the garment industry, for example, West African cotton is shipped to China for textile production and is then shipped back to Nigeria to be made into apparel (Brautigam, 2009). Machine equipment from China has a similar effect as it provides an input for growing African industries and is originally made from metals that other African states supply (Lawrence and Lawrence, 2010).

Some of the most directly constructive investment initiatives have been in infrastructure projects, which lead to greater allocation efficiency, productivity enhancements, and a general acceleration of economic growth (Mlambo, Kushamba, and Simawu, 2018). Currently, the infrastructure financing gap stands at approximately \$31 billion, creating a valuable opportunity for Chinese financing (Rotberg, 2008). Another major concern is that China is burdening Africa with debt. Around 20% of African external debt is owed to China, and China is the largest single creditor nation of the continent. The World Bank currently classifies 18 countries as being at “high risk of debt distress,” and the looming population crisis raises concerns over the long-term sustainability of this relationship (Rotberg, 2008). The globalized world relies heavily on these relationships. Current trade relationships and reliance on raw materials coupled with infrastructure development will make China’s relationship with Africa long lasting and inextricably link African countries with China, even if those countries become more self-sufficient.

China’s growing relationship with Africa may not be set on equal terms, but in the long run, African countries will grow and prosper more than they otherwise would have without



China's investments, due primarily to the Chinese construction of highways, high speed rails, and ports (UNCTAD, 2018). Much to the dismay of many Kenyans, the new Standard Gauge Rail System that connects Nairobi, Kenya, to the coastal city of Mombasa is primarily for Chinese cargo rather than for the transportation of Kenyan people, which is a common trend of these infrastructure-for-commodity deals (Githaiga, 2019). China is providing countries around the continent with infrastructure that local governments would not be able to afford on their own, but these projects are creating jobs for imported Chinese laborers rather than local residents. While both sides benefit from trade relations, China has the upper hand especially due to the multi-year debt payment systems in place that many African countries will struggle to repay (Stein, 2020).

SEZs offer a way for the Chinese government to avoid interaction and regulations put in place by the African country in which they are located. This phenomenon is quite like the satellite cities movement due to the arbitrary urban borders that these spaces dictate and the fact that the economy is formalized and unlinked to that of the host country. SEZs can bypass social, economic, and infrastructural issues but fail to offer a solution to the problems they are able to avoid. SEZs physically exclude local enterprises from operating within the zones, and the bulk of the housing and employment opportunities are for Chinese nationals.

For example, the Lagos State government owns 40% of shares of the Lekki SEZ in Nigeria, but local manufacturers cannot access this site (Okeke, 2020). It appears that most African governments are satisfied with belonging to the SEZs' company board or bilateral coordination committees rather than seeking larger roles for local manufacturers or supply chains due to the amount of infrastructure being built. Chinese involvement has not impacted

employment rates or increased manufacturing on the continent and in fact has done quite the opposite (Okeke, 2020). SEZs amplify economic segregation, but the benefit of quality infrastructure appears to suffice for the blatant exploitation of African nations that China is involved in. The image of this severe spatial inequality will increasingly be defined by physical borders that encapsulate areas with their own economic laws such as SEZs and charter cities.

### **Conclusion**

The types of development occurring in Sub-Saharan Africa vary greatly. Satellite cities offer infrastructure, private solutions to housing, and an escape from the informal economy that dominates society. From the outside in, solutions like these appear to solve many of the issues of urban life in Africa, but they also create a plethora of unintended consequences that will have to be suffered by those who cannot afford to opt out of pre-existing cities. As hundreds of millions of people urbanize, cities must keep up with demand but both local and national governments do not have the means to provide housing and other services to a growing population. This inevitably has led to a housing crisis and a trend of resentment among migrants toward their new urban life. Instead of the trend of increased spatial inequality prompted by megalopolises and sprawling urban slums, the solution may rest in a more natural gentrification process as seen in inner city Johannesburg. Rehabilitating pre-existing structures and focusing on the blending of social classes as opposed to further segregation and wasteful development embody the kanju spirit of living a more equal and sustainable lifestyle with far less.

Similarly, a focus on regional governments and second-tier cities offers a more hands-on approach that utilizes a newer housing stock and an increase in rail infrastructure as opposed to

the global trend of autocraticism. Another means of development is through special trade relations with China. While each country studied has independent deals, the idea is to trade raw materials, including physical land, for Chinese-built infrastructure that otherwise could not be afforded. The bulk of development, however—whether it be in the form of private cities or Chinese involvement—does not actually benefit the vast majority of Africans due to physical and economic exclusion, which is why many people have taken matters into their own hands as will be seen in the next chapter. Industrial history and modernization theory glorify organization, institutionalism, taxation, and the rejection of informality, but opportunity looks completely different in the lean economies of Sub-Saharan Africa. Faced with frustration and corruption, kanju allows for the creative destruction of low functioning institutions through risk taking, creativity, and a characteristic hustle.

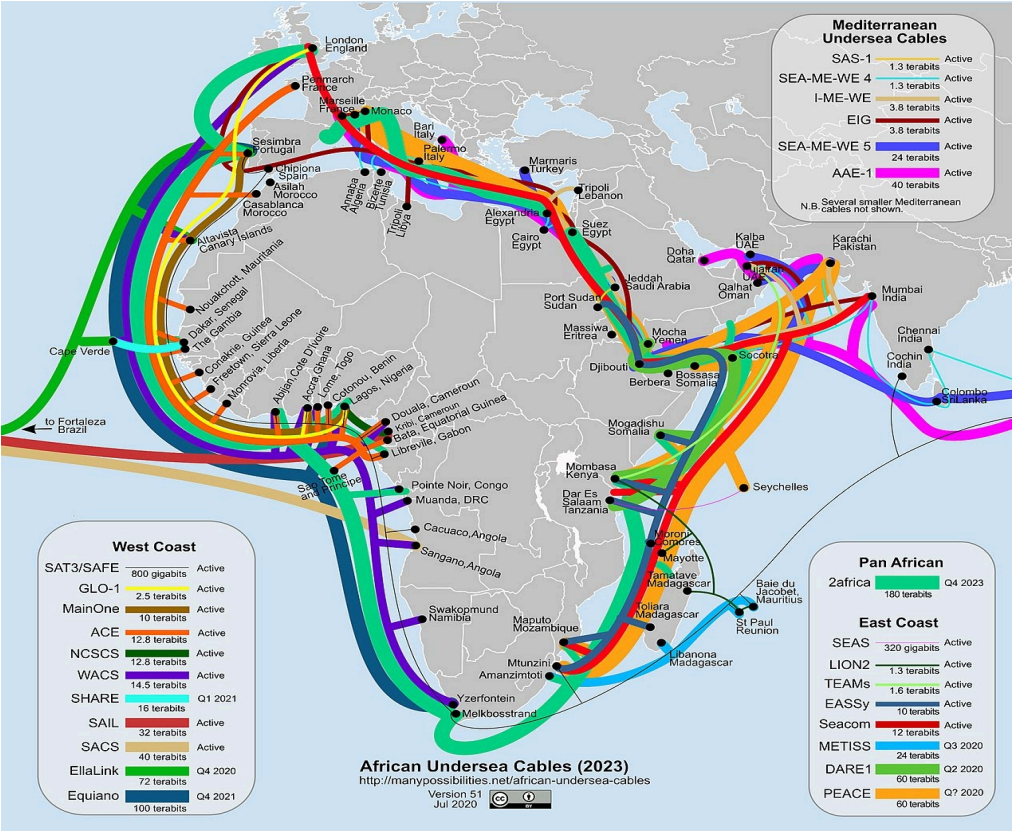
## **Chapter IV: Technology and Renewable Energy as Means of Expediting Development**

### **Introduction**

This chapter will explore the plethora of challenges that Sub-Saharan Africa faces and will further discuss why the successful and sustainable urbanization of the African continent coupled with technological innovation is key to slowing the effects of climate change. Millions of people are migrating to cities on the world's fastest growing continent. Each year more than thirty million Africans urbanize (Murray, 2015). With this comes a need for new infrastructure, including but not limited to roads, housing, airports, and sanitation facilities. Many of these migrants are leaving behind lives of subsistence farming. As of now, nearly every African country lacks the capability for large-scale industrial farming (Deveze, 2011). Without proper irrigation systems and pesticides, African countries have become increasingly reliant on food imports from abroad as climate change has increased the severity of droughts and floods, causing crop failure year after year across all parts of the continent (Stein, 2020).

In addition, African states have been forced into a commodity trap, which has left them unable to industrialize due to the availability of cheaper goods from abroad. Raw materials such as crude oil, precious metals, and cash crops are exported and often reimported once in their final state. For example, Nigeria, one of the world's largest oil exporters, imports nearly all of its oil from China (Hoffmann, 2015). China has created trade deals around the continent to receive crude oil in exchange for development in the form of infrastructure (Stein, 2020). This trade relationship is eerily reminiscent of the colonial period, according to Nigerian president Muhammadu Buhari (Olopade, 2014). Apart from Monaco, every wealthy state on earth has

relied on industrialization to stimulate the economy (UNCTAD, 2015). African countries do not have the capital or the existing infrastructure needed to develop and industrialize if goods from abroad continue to be less expensive. Technology has the potential to offer a solution to this. Since satellites and undersea cables have been laid, “connections have offered millions the chance to depart their geography, class, religion, or culture and access a world out of their sight—but now within their reach” (Olopade, 2014). This chapter will further discuss the growing trend of non-governmental organizations and technology replacing the supposed roles of government and thereby promoting self-sufficiency, individuality, and sustainability.



**Figure 4: African Undersea Cables, 2023.** This map shows the projected undersea cable network for Africa in 2023. (Ustic.gov)

Connection to the internet and the ability to share information instantly has the potential to allow Sub-Saharan Africa to leapfrog to the next stage of development. Internet restrictions and usage laws in Kenya, South Africa, and Nigeria are comparable to those of the US, and each country is ranked similarly on Freedom House's assessment of online freedom (Freedom House, 2020). This not only has positive implications for poverty relief and physical development but also for mitigating the effects of climate change and refocusing on renewable sources of energy. The foundation of these undersea cables offers an almost overnight change for the populations that gain web access from them. Access to remote virtual jobs, unlimited access to information, and instant communication now link these once remote places to the rest of the globe. Entrepreneurship in technology has the opportunity to replace or even direct industrialization and its environmentally harmful consequences in a different, more sustainable way. This chapter will discuss the ways in which technology and the threat of climate change will drive the future of development in Sub-Saharan Africa. While these are not specifically city-building projects, they have implications as to both how and why things will be built in the future.

### **The Effects of Climate Change: Mozambique and South Africa**

The harsh effects of climate change are already being felt across the African continent. A prime example is the case of Southeastern Africa. Already one of the poorest regions on the planet, Mozambique and its border with South Africa is currently suffering from one of the worst droughts to date (FAO, 2017). In Southern Africa, there are more than fifty million food insecure people in a region already suffering from poverty, various conflicts, and previous natural disasters (McVeigh, 2018). In Mozambique alone, more than 1.5 million people are seeking aid

due to the drought and the extreme harvest failure that it caused. The government of Mozambique currently estimates that 100,000 children will be malnourished because of the largest food shortage in decades (Kuo, 2019). Numbers this high have not been seen since the region's previous record-breaking drought back in 1997–98 (UNCTAD, 2019).

This drought is so detrimental because half of all crops grown in the region are rain fed instead of being watered through irrigation systems that are more abundant in the developed world (Anyadike, 2019). This method of cultivation has resulted in the death of half the crops grown for many seasons in a row. 2021 will be no different as 53% of crops are expected to fail (Anyadike, 2019). As urbanization rapidly continues and the population spikes, no Sub-Saharan country can afford to lose half of its crops, especially with a raw material–reliant export economy. For example, agriculture makes up more than 80% of the GDP in rural Mozambique (Stein, 2020). Droughts in general lead to malnutrition, exacerbated poverty, and a cost of an estimated \$3.5 trillion USD to the global economy (World Bank, 2019).

As demand for food increases, demand for land does, too. As virgin land continues to be cultivated, pastoral communities become less mobile and therefore more sensitive to drought. Already shrinking pastoral communities now face competition from the agricultural sector, the increasing amount of land conservation, and ground-up development projects that displace them. In addition, the population of Mozambique has more than doubled since 1990 and as a result of global population growth, global food production must increase 70% by 2050 to meet the anticipated demand (Stein, 2020). Mozambique and South Africa acted fortuitously following a series of cyclones, floods, and droughts that have worsened each decade. As a result, these countries have switched many crops to be more climate resilient. Sweet potatoes and maize have

replaced native favorites such as cassava and batata potatoes. They can more easily survive the worsening conditions. Adaptations are being attempted wherever possible but without global cooperation, the effects of climate change will become more severe.

Sub-Saharan Africa is faced with an unequal share of the global burden of climate change that has been made increasingly severe by the extreme amount of pollution created by and for wealthier nations. Mozambique is one of the lowest global contributors of CO<sub>2</sub> emissions per capita and has invested heavily in renewable energy (Kuo, 2016). It has tried to do its part by using hydroelectric plants on the Zambezi River to mitigate CO<sub>2</sub> emissions. Unfortunately, the 2018 Indian Ocean Dipole has halted rainfall, causing the Zambezi's water level to be lower than required to harvest energy, calling into question the future production potential of the hydroelectric plant (McVeigh, 2018). Even if Mozambique were able to have an agricultural revolution, the country's largest freshwater source, the Zambezi, which South Africa also heavily relies on, is drying rapidly; without it, large scale irrigation would be nearly impossible. Without proper development and attention to emissions, environmental crises like this will become more commonplace around the world. Countries like Mozambique, among many other Southern African nations, will suffer some of the harshest consequences of the climate catastrophe despite the fact that they had extraordinarily little contribution to harmful emissions. Extreme drought in Southern Mozambique has led to over 355,000 internally displaced people who need immediate relief in the form of food and medical care (Stein, 2020).

Humanitarian crises and natural disasters are becoming more severe and more frequent, and mitigating these effects of climate change will improve quality of life across the planet and will be profitable in the long run (Tucker, 2021). Sustainable and inclusionary development must



occur while the agricultural sector adapts to serve a growing urban population. Self-sufficiency is one of Africa's greatest challenges due to commodity traps, reliance on foreign aid, and a lack of infrastructure, but it is possible. The way the African continent develops will alter the fate of the world, especially regarding climate change and the potential resulting refugee crisis that would be worsened as a result. If Africa is developed like China and much of Southeast Asia, carbon emissions will surpass the appropriate level to keep temperatures from rising too dramatically. If renewable energy, technological advancement, and public transport can be prioritized over highways, cheap oil, and industrialization, the African continent has the opportunity to pave the way for a future of sustainable development and an increased focus on renewable resources.

If Africa follows the developmental path of industrialization, the amount of pollution created would be unfathomable. Resource extraction, reliance on automobiles, and globalized shipping would all increase (Brautigam, 2004). Africa is in a tricky situation because the Earth cannot afford for the continent to contribute to pollution like previous nations did during their industrialization periods, and it is exactly through industrialization that the world has created capital and urbanized in the past. Africa is faced with the extremely complex and multifaceted issue of discovering new ways to move hundreds of millions of people into adequate urban housing while preserving their ways of life and without creating too much pollution, all while trying to appease foreign private investors.

### **Renewable Energy**

The African continent is the global leader in renewable energy, with primary focus on wind, solar, and geothermal energy. Kenya, for example, gets half of its energy from geothermal

sources (Stein, 2020). Historically, urbanization has offered opportunities for populations to become more efficient and sustainable due to higher density, less land use (including deforestation, single family homes, and highways), and public transportation (Vidal, 2010). The urbanization of Africa can set the stage for the future of sustainable development, or it can have irreversible and detrimental effects on people's lives and the natural world. Sub-Saharan Africa is simultaneously the least developed global region and the global leader in sustainability and renewable energy. The percentage of the population with the lowest income is also the group of people with the smallest carbon footprint (Pieterse and Parnell, 2014). The sustainability sector is what African governments should be investing in as it is imperative to maintaining humanity's current way of life. The sustainability and renewable energy sector will be one of the fastest growing fields on the planet, and for once, Africa has a head start. Successfully implementing long-term, sustainable urban design must be further prioritized to stop cities from decaying and to grow them as innovation hubs that can further transform development on the continent.



**Figure 5: Satellite Image of Light Pollution.** Viewed from outer space, the illuminated industrialized world and major metropolises contrast sharply with the literal darkness that envelops Sub-Saharan Africa. (Nasa Earth Observatory: [http://www.nasa.gov/mission\\_pages/NPP/news/earth-at-night.html](http://www.nasa.gov/mission_pages/NPP/news/earth-at-night.html))

Only one in every three people in Africa has access to reliable electricity. Total generation power for the forty-eight countries in the region is equal to that of Spain (Eberhard and Shkaratan, 2012). World Bank figures suggest that the average use of basic electricity in high income countries is over 10,000 kilowatt-hours per person annually. The average African uses about twenty times less. New York's 19.5 million people consume the same amount of electricity as all 800 million people on the African continent (World Bank, 2015). Sub-Saharan Africa is the only world region where per capita consumption of electricity is decreasing despite an increase in development (Kenny, 2011).

Renewable energy forms such as hydroelectric, solar, and geothermal offer a relatively untapped solution to the region's lack of power. The Cahora Bassa Dam in Mozambique harnesses energy from the Zambezi River, but two thirds of the harnessed resource is sold to wealthier consumers in South Africa. Construction of the dam displaced more than forty thousand people who now have power lines running through their villages that they do not even have access to. Energy, resources, and labor continue to be taken from Africa to support wealthier nations. This problematic example demonstrates that energy is available and accessible but that it is not being distributed in an ethical manner.

A thermal map of Africa shows that the continent's solar resource is greater than anywhere else in the world and that "the region starved for electricity is spoiled for sun" (Olopade, 2014). Naturally, Africa has huge advantages over the rest of the world. Buried metal and minerals have long overshadowed the potential for renewable energy while creating extreme and varied labor and environmental woes (Walsh, 2011). Fortunately, Africa's fortunes are beginning to revolve around more creative, generative uses of this terrestrial birthright. Bloomberg reports that developing countries as a whole spent \$72 billion on new renewable energy investments in 2010, more than what developed countries invested (Bloomberg, 2012). The solar market is set to double each year with more than two million lamps sold annually (DiCampo, 2011). Solar energy has enabled the continent to leapfrog "the mediocre stopgap of coal-fired power plants and evolve into a cleaner, more individually controlled paradigm. In that sense, the lack of effective organization at the state level may be the best thing that ever happened to Africa" (Olopade, 2014, 164). Due to years of prolonged lack of service provision,

African countries do not have to spend nearly as much time and money on restructuring or removing harmful sources of emissions because they are limited to begin with.

As is the trend across the continent, Smith, owner of Orun Energy, realized that power requirements must be met locally rather than waiting for transmission lines to arrive from the government. He developed a generator and batteries that could hook up to cell phone towers that were running on diesel (Olopade, 2014). He is not the first to work with telecoms on targeted energy efficiency. Dozens of African companies are now building businesses that fix the power problem for governments and corporations. In 2012, Nigerian company IHS, which runs four thousand wireless towers in five countries, launched the continent's largest solar-powered cell site (Olopade, 2014). The solar farm keeps local lines of communication going while reducing carbon emissions by 24,000 tons annually (Greenhalgh, 2020). This project enables Nigerians to affordably replace harmful emissions and bypass formal energy providers while lowering overhead costs by utilizing wind and solar energy. Yet again, this is another example of a privately run, sustainable solution. Due to the African population's current standards and the continent's potential for renewable energy, Africa will come out ahead of the curve as countries around the world move away from the harmful emissions and exploitative, extraction-based practices that have been utilized to promote development and industry.

### **Agriculture**

As people gain wealth, consumption increases across the board, from land to gasoline/diesel to food. As millions of people move to cities with hopes of economic success, a method is needed for offering services and an increased quality of life without sacrificing the

environment. The way to do this is through public infrastructure, technology, environmentally conscious building materials, and more efficient land use for large scale farming. Unfortunately, except for technology, this method is not the current reality. Farming in much of Africa has become less efficient as people move to urban areas and irrigation systems and fertilizers remain severely lacking, making it nearly impossible to have reliable crops that can feed a rapidly growing population (Stein, 2020). As rural populations decrease due to limited economic opportunities, people can no longer have self-sufficient food chains. This calls for increased investment and development in the agricultural sector.

### The True Size of Africa

A small contribution in the fight against rampant *innemprancy*, by Kai Krause  
 Graphic layout for visualization only ( some countries are cut and rotated )  
 But the conclusions are very accurate: refer to table below for exact data

COUNTRY	AREA x 1000 km <sup>2</sup>
China	9.597
USA	9.829
India	3.287
Mexico	1.964
Peru	1.285
France	633
Spain	506
Papua New Guinea	482
Sweden	441
Japan	378
Germany	357
Norway	324
Italy	301
New Zealand	270
United Kingdom	243
Nepal	147
Bangladesh	144
Greece	132
<b>TOTAL</b>	<b>30.102</b>
<b>AFRICA</b>	<b>30.221</b>

In addition to the well known social issues of *illiteracy* and *innempracy*, there also should be such a concept as *innemprancy*, meaning *insufficient geographical knowledge*.

A survey with random American schoolkids let them guess the population and land area of their country. Not entirely unexpected, but still rather unsettling, the majority chose "1-2 billion" and "largest in the world", respectively.

Even with Asian and European college students, geographical estimates were often off by factors of 2-3. This is partly due to the highly distorted nature of the predominantly used mapping projections (such as *Merzator*).

A particularly extreme example is the worldwide misjudgement of the true size of *Africa*. This single image tries to embody the massive scale, which is larger than the *USA*, *China*, *India*, *Japan* and *all of Europe*.....combined!

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### Top 100 Countries

Area in square kilometers, Percentage of World Total

Source: Britannica, Wikipedia, Atlasica 2010

	AREA km <sup>2</sup>	%	
1	Russia	17098242	15.0
2	Canada	9984070	8.70
3	China	9596960	8.40
4	United States	9829091	8.40
5	Brazil	8511077	7.60
6	Australia	7689284	6.80
7	India	3287263	2.90
8	Argentina	2780400	2.50
9	Kazakhstan	2724900	2.40
10	Sudan	2585013	2.30
11	Algeria	2381741	2.10
12	Congo	2344080	2.10
13	Czechland	2161866	1.90
14	Saudi Arabia	2149080	1.90
15	Mexico	1964375	1.70
16	Indonesia	1880360	1.70
17	Uganda	1824100	1.60
18	Iran	1664100	1.50
19	Mongolia	1564100	1.40
20	Finland	1312100	1.20
21	Chad	1284000	1.10
22	Niger	1267000	1.10
23	Angola	1248700	1.10
24	Bel	1241100	1.10
25	South Africa	1221037	1.00
26	Colombia	1141768	1.00
27	Ethiopia	1124260	1.00
28	Bolivia	1098891	0.90
29	Moldavia	1028100	0.90
30	Egypt	1000000	0.80
31	Tanzania	945087	0.80
32	Holland	924786	0.80
33	Venezuela	912000	0.80
34	Norway	750000	0.60
35	Mozambique	801000	0.70
36	Pakistan	796000	0.70
37	Turkey	783162	0.70
38	Ukraine	760100	0.60
39	Zambia	752112	0.60
40	Nepal	676576	0.60
41	Algerian	652000	0.50
42	Somalia	627671	0.50
43	France	633034	0.50
44	C. Africa Rep	622064	0.50
45	Ukraine	600000	0.50
46	Madagascar	592041	0.50
47	Ethiopia	582000	0.50
48	Korea	580887	0.50
49	Yemen	527088	0.40
50	Thailand	513100	0.40
51	Spain	505000	0.40
52	Turkmenistan	486000	0.40
53	Comoros	478442	0.30
54	Papua New Guinea	462800	0.40
55	Uzbekistan	447000	0.30
56	Honduras	440000	0.30
57	Sweden	441000	0.30
58	Iraq	438000	0.30
59	Paraguay	400000	0.30
60	Denmark	360000	0.30
61	Japan	377000	0.30
62	Germany	357000	0.30
63	Russia Congo	342000	0.30
64	Finland	330000	0.30
65	Vietnam	330000	0.30
66	Holanda	330000	0.30
67	Norway	323000	0.30
68	Cote d'Ivoire	322000	0.30
69	France	322000	0.30
70	China	300000	0.20
71	Italy	300000	0.20
72	Philippines	300000	0.20
73	Benin	270000	0.20
74	New Zealand	270000	0.20
75	Sudan	267000	0.20
76	Wusun Sahara	260000	0.20
77	Equator	260000	0.20
78	Guinea	240000	0.20
79	United Kingdom	240000	0.20
80	Uganda	240000	0.20
81	China	230000	0.20
82	Romania	230000	0.20
83	Laos	230000	0.20
84	Guinea	210000	0.20
85	Belarus	207000	0.10
86	Kyrgyzstan	199000	0.10
87	Slovakia	190000	0.10
88	Syria	180000	0.10
89	Canada	170000	0.10
90	Ukraine	170000	0.10
91	Slovakia	160000	0.10
92	Turkey	160000	0.10
93	Holland	140000	0.10
94	Bangladesh	140000	0.10
95	Nepal	140000	0.10
96	China	130000	0.10
97	Honduras	120000	0.10
98	North Korea	120000	0.10
99	Belarus	110000	0.10
100	Ethiopia	117000	0.10

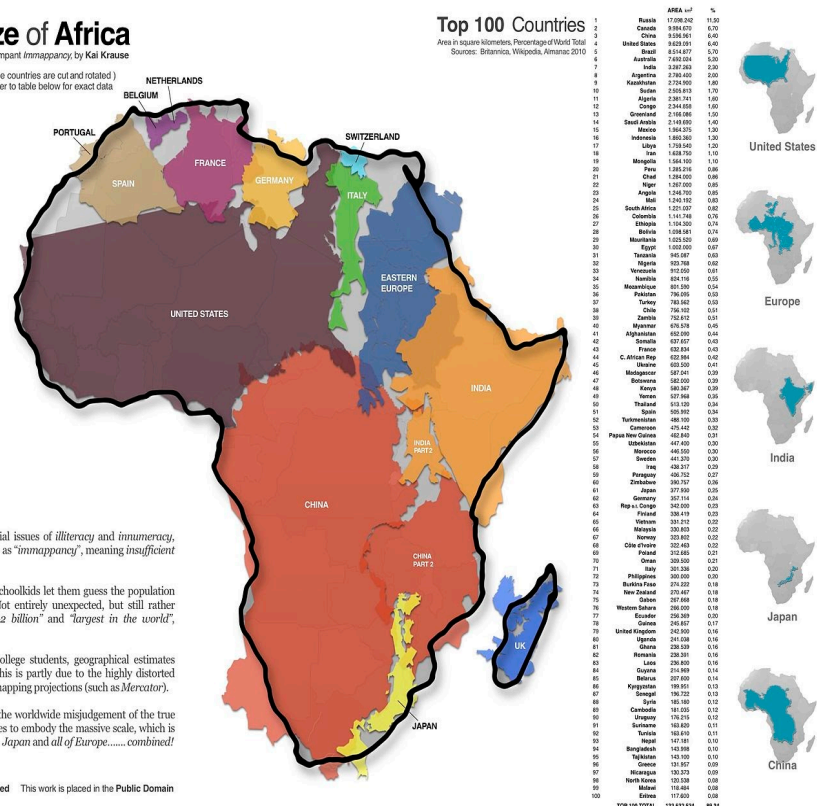


Figure 6: The True Size of Africa. (Krause, 2011: <http://static02.mediaite.com/geekosystem/uploads/2010/10/true-size-of-africa.jpg>)

As shown in figure 5, all of Europe, China, India, and the contiguous United States can fit within the African continent. If a small nation such as The Netherlands can be the world's second largest agricultural exporter, it is surely possible for African agriculture to meet the demands of a shifting population (Simone, 2015). 1.5 billion acres, more than half of the world's uncultivated arable land, is in Africa but the yields and appeal of farming are small. "Bricks sell better than growing food. So instead, we grow bricks to buy food" (Olopade, 2014). The African continent has the most uncultivated arable land in the world with more than 600 million hectares and yet, instead of achieving self-sufficiency and stable food supply chains, commodity exports keep people from producing goods based on their own needs (World Bank, 2016).

In Kenya, the average farmer is 65 years old, while the median age of the population is just 18. The struggle of making agriculture appealing to a young, tech-savvy generation is one of the biggest issues facing the region. Agriculture as an industry has a long history of association with peasants, but technological innovation is beginning to change that. The agricultural sector in Kenya employs 16 million smallholder farmers and makes up more than a quarter of Kenya's GDP (Juma, 2011). So, headlines like "African Agri-Tech booms with 110% growth since 2016" are very encouraging, especially considering the propagative effects caused by faster, more efficient disruptive digital technologies (Juma, 2011). Due to the popularity of tech within the youth demographic, the intersection of agricultural and technological trends offers the potential to jumpstart innovation in the agriculture industry.

Several Africa-based mobile ventures have used technology to cut down on the information asymmetries that keep farmers from maximizing income and harvest. Apps and non-profits give farmers access to materials and daily crop price indices and even allow users to buy

and sell orders from their mobile devices (Juma, 2011). Technology ensures maximum profit and less food waste while simplifying the trade process. An example of a mobile venture that maximizes income and production is The One Acre Fund that has already supplied one million smallholder farmers with everything they need to grow more food and earn more money. Nick Daniels, The One Acre Fund's government relations analyst, says, "A lot of initiatives come from donors. USAID says, 'You need to be doing this,' DFID comes in and says, 'Do this.' The World Bank, Sweden, Denmark are all doing kinds of initiatives. They lack resources, there is a lack of focus. You have these poor extension workers who are being pulled in every direction" (Olopade, 2014). The rise in alternative agricultural support structures is a classic response to institutional failure. One Acre's chief innovation has been financial. Farmers can pay One Acre five percent down for seeds and fertilizer and pay the nonprofit back in installments over time. The group even forgives farmer debt in the case of major crop failure, making the loan tied to effort rather than outcome. This trend of non-governmental organizations and technology replacing the supposed roles of government promotes self-sufficiency, individuality, and sustainability. A mobile app has succeeded in doing what foreign governments and world-renowned NGOs have failed to do for decades due to the level of choice and trust placed on the farmers that use their service.

### **Continuing the Trend of Decentralization**

The seeming inevitability of urbanization creates a distraction from what life on the ground looks like in rural parts of Sub-Saharan Africa where the promotion of self-sufficiency through technological advancement and smaller scale solutions is dominant. The African Union



has proposed a railway network that would offer an alternate proposal of counter urbanization or villagization. With large infrastructure, renewable energy, informal and collaborative virtual networks, and jobs, the need to live in the city begins to dissipate. Sub-Saharan African cities and the countryside could share destiny—“a network of countless villages that partially congeal into city-like constructs” (Koolhaas, 2020). Formal steps to create this future have already begun. In 2013, Kenya decentralized power and returned it to the local and rural level. A new system established 48 distinct county governments across the country. Each new government continues on the trend for governments to “champion a model of development with the tall glass towers, spaghetti road networks, and busy looking streets. Open most of the county government websites and you are met by utopian master plans, often quite alien to the region” (Koolhaas, 2020). Clearly the trend of decentralizing power and establishing more local and region-specific plans is taking hold across the continent. It is as if each city or new development acts as its own provider with distinct economies and unique specializations.

Cities within the same national borders can have entirely different structures and ways of life. The commonality here is that people have realized that relying on the government to regulate the economy, build infrastructure, and provide services will ensure that progress is not made (Olopade, 2014). Smaller scale, localized governments that rely on private sector investment is the future of African development. Whether that be through SEZs, satellite cities, innovative technology hubs, or simple decentralization of power, it has become abundantly clear that current national African governments do not have the means or support to provide what is being demanded by a growing and increasingly tech savvy population, which is why decentralization between national and local governments is a growing trend (Okonjo-Iweala and

Ratha, 2011). Information is empowering, and more than 25% of Sub-Saharan Africans now have access to the internet compared to just 5% in 2010 (World Bank, 2021). As Nigerian author Dayo Olopade puts it, “It’s empowering first to our young people, in terms of education and business opportunities and sources of employment... To businesses who are ambitious enough to participate on the global scale, it gives those skills and capabilities better visibility to engage with people around the world and participate with an equal footing” (Olopade, 2014, 96). Africans can now access digital spaces that offer a way to bypass industrialization and its negative consequences. While web access figures are not where they are in more developed regions, urban African residents are far more likely to be using the world wide web. The potential of technology is grounded first in its redistribution of power, “Wires warp cyberspace in the same way wormholes warp physical space: the two points at opposite ends of a wire are, for informational purposes, the same point, even if they are on opposite sides of the planet” (Olopade, 2014). Africa can now be linked to the opposite side of the planet through cables that enable ordinary African people to access the same information as the wealthy world. Access to information has revolutionized healthcare, banking, and agriculture across the continent even for those individuals in the lowest income bracket. Instead of building new banks and hospitals and implementing industrialized farming, a simple mobile phone has allowed for affordable, fast, and replicable solutions.

One of the most impressive and widely used examples of bypassing formality is Kenya’s M-Pesa, where connectivity can be converted to cash. M-Pesa transforms a twelve-button cell phone into an ATM. Users can deposit cash onto their mobile phone at one of the thirty-seven-thousand official M-Pesa kiosks in Kenya (Hughes, 2018). With identification, a phone number,

and a PIN code, they can withdraw the cash at another kiosk, perhaps located thousands of kilometers away. Dayo Olopade contends that technology has led to a flood of unprecedented innovation with regard to all aspects of development and that M-Pesa enables a range of financial services that can replace the need for formal banking (Olopade, 2014). In the event of emergency, funds can be wired to relatives or friends simply by using their phone number. Payment and collection of debts do not require face-to-face interactions. In Sub-Saharan Africa, 80% of the population is unbanked and without no access to credit (McKinsey, 2009). M-Pesa offers security, convenience, empowerment, and the long-sought ability for individuals in poor countries to build assets. The service is extremely popular and is used by 65% of Kenyan households, while transactions amount to more than \$20 million daily—equivalent to 50% of Kenya’s annual GDP (Jack and Suri, 2011). In economies where banks are powerful and complex financial products are common, M-Pesa simply would not have developed. The share of adults using mobile money in OECD (intragovernmental economic organization with 37 member states) economies in Europe and the Americas is as low as 1%, while Africa has leapfrogged way ahead (Olopade, 2014). This is, yet again, an example of people taking what would be considered government responsibility in much of the OECD world into their own hands. Technology can offer banking, communication, trade, and access to information to spread rapidly around Sub-Saharan Africa all without reliance on formality and the state. Just as phases of industrialization may be bypassed due to the successes of the technology sector, access to banking is no longer a hurdle that low-income households must face.

## **Conclusion**

Through recent increased connectivity and access to technology, millions in Africa have the opportunity for self-direction to navigate around issues of fail-states and their lack of provisions. Anyone can be a participant in this new knowledge economy by having the opportunity to create solutions, such as apps, that serve the needs of everybody rather than waiting for a solution from the government or from Western developers. Technology is so important in Africa because it is unbiased and supports both formal and informal economies by reducing information asymmetries and creates the power to break the chains of institutional failure through new connective infrastructure and widespread mobile use around the continent.

With the exception of South Africa, Sub-Saharan Africa is the only world region where per capita consumption of electricity is decreasing. Kanju solutions to private, dirty energy allow power requirements to be met locally through the use of generators and batteries as opposed to waiting for diesel powered transmission lines to arrive from the government. Orun Energy in Nigeria reported a 72% reduction in diesel use and is now offering large corporations relief from the expenses of formal energy (United Nations Environmental Program, 2011). Similarly, the Nigerian company IHS, which runs thousands of wireless towers across various countries, launched the continent's largest solar-powered cell site, which reduces carbon emissions by 24,000 tons per year (BusinessTech, 2012). These are just a few of examples of sustainable solutions found within the raw materials of daily life that can lead to local and global energy innovation.

Informal solutions have also reached the agricultural industry. Without means to provide tractors, pesticides, irrigation systems, and genetically modified seeds, apps and even radio

stations giving agricultural production tips offer solutions to stop soil erosion, protect new seedlings, and prevent birds from damaging crops. This information is not just vital for commercial farmers but also for part-time subsistence growers. A shift toward food sovereignty—ownership of the entire food production pipeline as opposed to just food access—is a growing trend across the continent. Solely through the dissemination of information, farmers can reduce dependency on inorganic inputs while increasing yields. The recycling pillar of *kanju* is most important with regard to agriculture. People can grow their own seeds, food, and fertilizer, thereby growing currency and sustenance without the input of outsiders and the harmful effects of industrial agriculture.

As countries around the world scramble to become more sustainable and self-sufficient as the effects of climate change worsen, Africa is actually ahead of the curve. Lean economies have had to learn to balance food production and consumption, how to live without fossil fuels, and how to develop adaptive practices that can scale. A history of dealing with resource limitations and having the highest global potential for renewable energy puts Sub-Saharan Africa in a better position than fat economies with a culture of overconsumption and material obsessions. As the trend of satellite cities and corporate investment increases, the culture and consumption rates of fat economies may also be emulated. Physical removal from the hardships and struggles of living in Sub-Saharan Africa will create the same disconnect between production and consumption that many fat economies face, which further threatens the environment and perpetuates the commodity trap that burdens the region.

## **Chapter V: Summary of Findings and Conclusion**

Sub-Saharan Africa is at a crossroads. Millions of people across international borders agree that economic, social, and civic empowerment is necessary while also disagreeing on plans to achieve these goals. In Africa, one part of the population is decidedly Western-leaning, meaning that society is oriented around states, bureaucracies, international trade, and GDP-centric calculations. Conversely, the vast majority of people live far more decentralized lives, relying on self-sufficiency and making do with less means since strong and functional states are still rare in modern Africa. Kanju, local organizing, and community-level governance must be prioritized over solutions that begin with inflexible external priorities and foreign interests. Grassroots processes and kanju solutions struggle for recognition and scale since they operate outside of formal institutions and are often diluted and ignored by modern Western governments who have their own self-interested motives.

Unfortunately, the bulk of development in Sub-Saharan Africa is focused on multinational corporate investors, local business elites, and affluent consumers. Satellite cities and brain drain prove that exiting the system in preference for a more formal and structured environment is a popular choice. Governments do not have enough resources to start improving cities on their own, which is why foreign investment and developing planned cities from the ground up remain the most common trends. As more people continue to move to cities, housing and infrastructure are going to become larger problems. It is extremely unlikely that the private sector will use its means for what lower income populations need: decreasing the number of informal settlements, building affordable and efficient public transportation for urban Africans, and incorporating the informal sector of the economy.

Further, due to the lack of government viability, increased Chinese development as means of service provision threatens the sustainability potential of Africa as carbon emissions are not monitored and pollution is an afterthought. This is a difficult trap to escape due to reliance on foreign investment and continued mutually beneficial trade relationships, but African economies cannot industrialize or become self-sufficient on an export and extraction-based economy.

Formality will always be at odds with more free and informal societies. Direct intervention and regulation remove creativity, argues Obiageli Ezekwesili, the former Nigerian education minister who now leads an institute committed to building private-sector capacity (Mbembe, 2001). A hybrid solution that takes infrastructural and organizational knowledge from the West and combines it with the sustainable and inventive solutions of Sub-Saharan Africa will create innovations that build on both institutional and informal frameworks that can lead to more impactful and effective development. Development necessities such as health care, electricity, and education have flourished outside the reach of the state, and, as private companies provide services that governments have failed to offer, their roles and motives are increasingly questioned. A true hybrid institution can utilize techniques learned from lean economies to improve the lives of Africans rather than imposing formal institutions that create further divisions and exacerbate spatial and economic inequalities. Satellite cities and ground-up development import Western systems to Africa for the people who are already participating in formal institutions and do not actually fix any of the issues of urban life on the continent for those who do not or cannot accept formality and strict regulations as a way of life.

The purpose of this thesis is to provide an overview of the misconceptions about Sub-Saharan Africa and to point out the clash between formal institutions and the informal sector. Beyond this, the examples given are to provide an understanding of what is actually occurring on the ground and how the two systems blend together. Both sides have a lot to learn and can benefit from the other, but it is time for the asymmetries of this relationship to be examined and untangled. The complexities and relationships of countries in Sub-Saharan Africa create developmental challenges that are unlike anywhere else. Sub-Saharan Africa will have striking economic significance in the twenty-first century as hundreds of millions of people urbanize, new spaces are built from the ground up, and trade relationships develop.

The United Nations estimates that, by 2050, Africa will be the source of roughly half the births on this planet and, by 2100, it will comprise approximately 30–40% of the global population (Zinkina and Korotayev, 2014). Much uncertainty surrounds the shockwave of this population boom. Scholars, policy makers, and investors must all postulate as to whether this growth will set Africa on a path for labor intensive industrialization or whether national incomes will be outpaced by the rising populations. One factor is certain, though—Africa will become a home to the youngest and most populous consumer market in the world. The impact of this market will be determined by their exposure to intercontinental and extracontinental producers through trade policy (Sampath 2015). Whether African countries integrate their markets with one another or whether they form economic relationships with overseas countries will have staggering implications for the continent with respect to creating political autonomy, accelerating market diversification, and working toward poverty alleviation.



Clearly, there is a wide array of challenges on the path toward regional integration. Poor infrastructure, inconsistent implementation, and the clash between formal and informal economies disincentivize supply chains from moving between borders. On the other hand, the benefits from market integration justify the need to overcome these obstacles. Market integration will spur product diversification, catalyze economic growth, create a focus on renewable energy and sustainability, and help foster a more autonomous and stable continent. Currently, the relationships Africa has formed with China and the Western world do not work toward these goals. Instead, trade with foreign powers tends to lock Africa into extractive specializations, while other nations reap the gains from growing demand and influence policy decisions. In the wake of Africa's population boom, a policy agenda oriented around better connecting markets can be transformative.

Massive projects like special economic zones and satellite cities are often viewed as avenues of hope and economic prosperity, but in reality, without political and social change, economic development is limited and the vast majority of Africans will not receive their fair share of profit and opportunity. Instead of African states being taken advantage of, there is an opportunity to use this development, new investment, and technological advancement to educate large portions of the population in order for larger numbers of people to benefit. The urbanization of Sub-Saharan Africa comes at a time when the world must begin to deal with the repercussions of destructive and environmentally harmful development. The ideals of *kanju* development and the more environmentally conscious solutions to service provision must be accepted and understood by the global community so that unsustainable aspects of a globalized economy can transition to become less wasteful, extractive, and exclusionary.

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