

Echendu, Adaku Jane

## Article

# Adapting the Singapore model to Nigeria's urban management: Possibilities and challenges

REGION

## Provided in Cooperation with:

European Regional Science Association (ERSA)

*Suggested Citation:* Echendu, Adaku Jane (2022) : Adapting the Singapore model to Nigeria's urban management: Possibilities and challenges, REGION, ISSN 2409-5370, European Regional Science Association (ERSA), Louvain-la-Neuve, Belgium, Vol. 9, Iss. 1, pp. 115-133, <https://doi.org/10.18335/region.v9i1.359>

This Version is available at:

<https://hdl.handle.net/10419/312630>

## Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

## Terms of use:

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



<https://creativecommons.org/licenses/by/4.0/>

## Adapting the Singapore Model to Nigeria’s Urban Management – Possibilities and Challenges

Adaku Jane Echendu<sup>1</sup>

<sup>1</sup> Western Sydney University, Sydney, Australia

Received: 17 January 2021/Accepted: 24 March 2022

**Abstract.** Nigeria and Singapore are two countries that bear both historical similarities and differences. Singapore has emerged as a poster child for sustainable urban development while Nigeria lags very far behind in this area. This paper analyses which lessons can be drawn from Singapore to inform and improve Nigeria’s urban planning and management. Improving Nigeria’s urban planning sector is especially important considering its projected additional urban growth of 226 million by 2050. Drawing from published academic work and document analysis, this work finds that relevant lessons could be drawn from Singapore’s approach to urban planning to encourage sustainable urban planning in Nigeria. The contextual similarities between the countries and the current planning system in place make the chances of success high. This paper advocates planning reforms focused on adequately implementing plans, strengthening its planning institutions and appropriate development control, and putting in place strong disincentives for corruption to promote sustainable urban planning and improve urban conditions and sustainability.

**Key words:** Sustainable Urban Development, Sustainable Urban Planning, Development, Sustainability, Urban Environment

### 1 Introduction

Nigeria is deemed the giant of Africa because of its large population of over 208 million people (Echendu, Georgeou 2021). Its economy is currently the largest in Africa and was ranked 26th in the world as of 2014 (Awe et al. 2019). It is one of the fastest urbanizing countries with over 50% of this population residing in urban areas (Abubakar, Aina 2019). The urban population is set to rise by an additional 226 million by 2050 (Farrell 2018). Alongside India and China, Nigeria is projected to contribute up to 35% of the world’s population by 2050 (Avis 2019). By 2025, more than 60% of Nigerians will be living in urban areas (Taiwo, Gbolabo 2020). With this projected urban growth, Nigeria’s urban planning and management urgently deserve attention given the present state of its urban environment which cannot sustainably support this astronomical projected growth (Echendu 2022, Taiwo, Gbolabo 2020). It is a fact that most Nigerian cities are characterized by various forms of urban decay and unsustainability (Alumona, Onwuanabile 2019, Echendu 2021b). Urban sprawl is on the rise (Yiran et al. 2020). Flooding, building collapse, and informal settlements are prevalent symptoms of decades-long poor planning practices (Echendu 2020a,b). Singapore on the other hand is a city-

Table 1: Selected socio-economic indicators

Indicator	Nigeria	Singapore
Population in 2021	208,000,000	5,600,000
Urbanization rate	52%	100%
Urbanization growth rate	2.8-3%	n/a
GDP per capita (USD) <sup>1)</sup>	2 097,09	59 797,75
Population density <sup>2)</sup>	226	8358

Notes: <sup>1)</sup> Source: World Bank; <sup>2)</sup> Population per square kilometre

state renowned for urban excellence that has consecutively emerged over the years as an archetype of urban management excellence (Tan 2020). It is a city-state with a population of 5.6 million people and a land mass of about 722 square kilometers, having increased its original landmass of 580 square kilometers at independence in 1965 through land reclamation efforts (Ho et al. 2020, Tan 2017). Its economic development took place in tandem with the urban development of the city-state (Curien 2017).

Nigeria and Singapore are both former British colonies. At independence, they were underdeveloped and had to struggle to survive the coming decades. The two nations adopted different development trajectories that would determine their future. Today, Singapore has progressed from being a third-world country to a first-world, high-income country. It plays a major role in the politics and economics of Southeast Asia and beyond with a model that has become renowned as the ‘Singapore model’ (Brenya et al. 2017). Nigeria, on its part, has remained a third-world country with a poor living environment. Singapore’s committed leadership and urban management and planning model has been central to this highly lauded transformation (Shatkin 2014).

Planning, as used in this paper, refers to urban planning, spatial planning, or regional planning and refers to the design and development of the built/physical environment to cater to human needs. This paper first discusses the concept of sustainable urban development and planning which forms the theoretical framework of this study (Section 2). It then goes on to discuss Singapore’s planning model and features. Nigeria’s planning model/system is discussed and analyzed in Section 5, followed by Section 7 on the replicability of the Singapore model in Nigeria. It goes on to make recommendations on how Nigeria’s planning sector could be improved drawing on lessons from Singapore (Section 8). In Section 9 it concludes by summarizing the key factors that ensured Singapore’s success which other nations can emulate to achieve success in their urban planning. Table 1 highlights selected socio-economic indicators for Nigeria and Singapore.

## 2 Sustainable urban development and planning

The concept of sustainable urban planning has emerged as an important discourse because achieving sustainable development itself is largely dependent on having sustainable cities. This dependence exists because urbanization degrades and alters the natural ecosystem, impacts biodiversity, and denies humans encounters and experiences with nature (Colléony, Shwartz 2019). Also, more than half of the world’s population lives in cities, consuming a significant proportion of the earth’s resources (Currie, Musango 2017, Larijani 2016). While cities are centers of economic production, their high resource consumption (over one-third of natural resources) also makes them hotbeds of issues impacting sustainable development. This is due to the correlated environmental impact and pollution. Cities emit up to 70% of global greenhouse gases (Currie, Musango 2017, Sofeska 2016, UN-Habitat 2011). However, the dense population of cities can portend positive benefits for the larger environment by limiting environmental distortion and landscape change due to urban sprawl. Urban sprawl is associated with negative environmental and socioeconomic consequences with impacts on quality of life, public health, pollution, and environmental degradation (Environmental Defence 2013, Jarah et al. 2019). Cities will therefore make or mar the vision towards sustainable development.

Sustainable development is the ability of the present generation to fulfill their own development needs while assuring chances of the same for future generations ([Brundtland 1987](#)).

Contemporary sustainable urban development and planning tilts towards compact cities. Compact cities and densification could be tools for positive urban transformation when led by strong planning ([Akbar et al. 2020](#), [Horn 2020](#)). The positive benefits of a denser population could be harnessed by sustainable urban planning. Because cities amalgamate economic assets, potentials, and denser populations, the impact on the environment is extensive, consistent, persistent, and focused. This necessitates more tailored environmental planning approaches as a key strategy for ensuring sustainability ([Tang, Lee 2016](#)). Careful planning of urban settlements and the physical environment is a crucial step to securing the future of humanity ([Meyer, Auriacombe 2019](#), [Sodiq et al. 2019](#)). Urban planning as a field is concerned with sustainable urban development and connects all three aspects of sustainability - the social, economic, and environmental aspects ([Tang, Lee 2016](#)).

Urban development being a multi-faceted issue could be deemed a ‘wicked problem’ thereby requiring a careful and integrated approach whereby different factors need to be considered alongside good coordination and collaboration ([Gohar 2016](#), [Medina, Huete García 2020](#)). Wicked problems are problems with different symptoms that are inherently difficult to solve because there is no one solution and emerging dynamics are not evident from the outset. Urban development then becomes a wicked problem because despite the fact that sustainable urban development portends numerous potentials, cities are also fraught with emerging and constantly changing issues that are difficult to predict.

Sustainable urban planning and development are aimed at reducing and mitigating urban problems and achieving sustainable development by applying the concept of the sustainable city and its principles in the development of urban centers ([Larijani 2016](#)). The importance of land-use planning as an integral process of achieving sustainability is well documented in the literature ([Echendu 2020b](#), [Musa et al. 2018](#), [Wei et al. 2018](#)). Agenda 21, a comprehensive action plan to be taken globally, nationally, and locally underscores that land-use planning is a tool to be utilized in preventing urban sprawl, most especially in important farming land and sensitive regions. It calls for countries to undertake reviews of the urbanization policies and processes for a better understanding of the impact of urban growth on the environment. This will also facilitate the application of unique planning styles and approaches, tailor-made to local needs, that also consider the features of the growing cities and the available resources ([Birch 2016](#), [Caprotti et al. 2017](#)). Chapter 7 of Agenda 21 specifically focuses on fostering sustainable human communities. It calls for improving human settlements management; providing appropriate shelter for all; enhancing sustainable spatial planning and management; promoting integrated environmental facilities like sanitation, water, solid waste management, and drainage; providing sustainable transport and energy system in communities; improving the planning of human settlements and management in disaster-susceptible areas; fostering sustainable construction industry schemes and ventures; bolstering human resource capacity building and development for developing human settlements ([UNCED 1992](#)). These all fall in the domain of urban planning. The Sustainable Development Goals (SDGs) also recognize the importance of urban planning to achieving sustainable development. Goal 11 is specifically geared towards making cities inclusive, resilient, and sustainable. A target of this goal focuses on enhancing the capacity of urban planning institutions.

The New Urban Agenda (NUA) also highlights the problems of urban and regional planning and management, how urban areas can fulfill their role as engines of sustainable development, and how they can shape the execution of the SDGs. The NUA functions as a catalyst for the SDGs, specifically SDG 11, and recognizes that 95 percent of the urban growth will be in the developing world. The NUA re-emphasizes the now well-known position of international sustainable development agendas that well-planned and managed urbanization can be a potent tool for sustainable development for both developed and developing countries. Urban planning and management is, therefore, a

tool for achieving these important goals. Indeed, the importance of developing sustainable urban communities cannot be overemphasized especially in an era the battle for sustainability will be won or lost in urban areas.

### 3 The Singapore Planning Model and features

Singapore is the epitome of good urban management, governance, and development. Strong leadership, centralized urban management and governance were key to these achievements. After its independence, it was led for three decades by Lee Kuan Yew of the People's Action Party (PAP) who championed its transformation (Leggett 2007). Singapore has since enjoyed good leadership by leaders with strong political will with the PAP in power to date. Post-independence, its government adopted a direct interventionist stance to urban development, by marrying its political, economic, social, and land use vision through the planning process and gaining the people's support through good performance and delivery of public service (Yuen 2009).

As a former British colony, it started with a British planning canvas. It was the practice then for Britain to export their planning regulations which were considered the most advanced at the time to their colonies (Watson 2009). The British 1947 Town and Country Planning Act formed the bedrock of colonial Singapore's planning and informed the 1959 Planning Act. The passage of the Planning Ordinance officially legislated town planning. A central planning body was charged with physical planning, long-term development, and development control (Chew 2009, Lee 2015). Developers thereafter became mandated to secure approval before any development.

Development plan and development control were features of the British planning system which also formed the core of Singapore's urban planning. According to Yuen (2009), control over land allotment was particularly important to maintain law and order given the different ethnic mix, religions, and languages of the predominantly immigrant population. The limited land areas also necessitated tight controls to effectively allocate land to satisfy competing purposes. Singapore has the compulsory Land Acquisition Act whereby land can be acquired from landowners who are compensated for the market value. The government owns up to 85% of the land in Singapore and has tightly managed this scarce resource to ensure better integration among its diverse ethnic groups (Shatkin 2014).

The central planning authority in charge of all planning tasks is the Urban Redevelopment Authority (URA). The Minister for national development is in charge as the final authority in matters of planning and development control (Henderson 2012). The URA controls land use and development, prepares and revises development plans, implements conservation, ensures and provides good urban conditions, implements conservation measures, and coordinates private and public sector development schemes (Lee 2015).

Singapore's long-term planning is guided by the Concept Plan and Master Plan. The Concept Plan was first adopted in 1971. It serves to direct Singapore's development over the next four to five decades and encompasses strategic land use and transport framework, ensuring there is enough land to satisfy the needs of future population, economic needs, and a high-quality environment. The Concept Plan is renewed every 10 years and aims to be responsive and flexible to the changing needs of stakeholders (Meng et al. 2016). The current Concept Plan was revised in 2011-2013 and birthed the Ministry of National Development (MND) Land Use Plan 2030. The Plan is in congruence with the population projections by the National Population and Talent Division (NTPD) for 2030 and outlines the blueprint to support the projected economic and population growth while also ensuring a good living environment. The outlined strategies include the provision of well-serviced affordable homes, integration of greenery into the living environment, ensuring greater mobility through an improved transport network, maintaining a vigorous economy with good employment, and assuring growth and a good environment into the future. The dictates of the Concept Plan are then translated into the Master Plan (Ng 2018). The Master Plan on its part translates the long-term goals and strategies laid out in the Concept Plan into more elaborate plans for execution. It is revised every 5 years

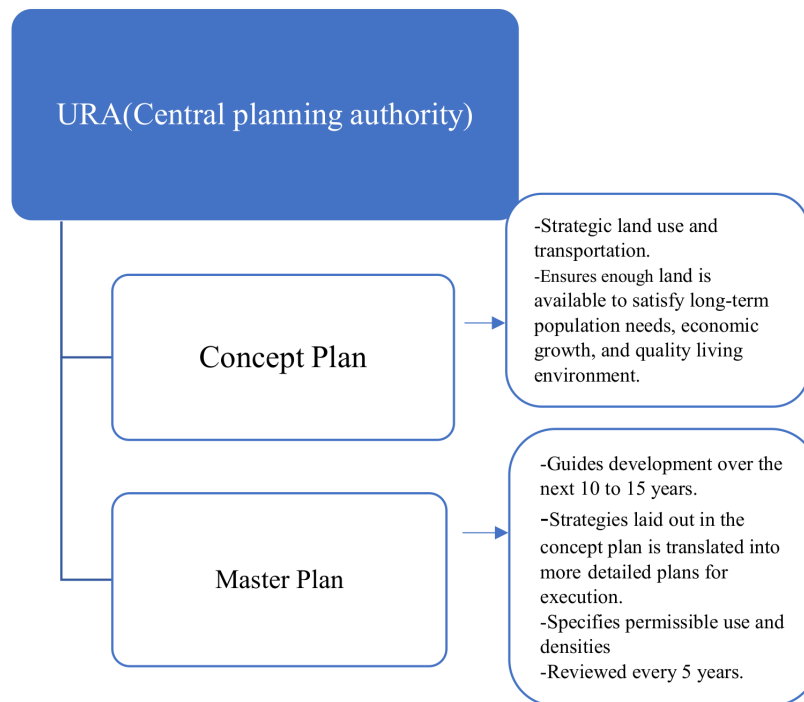


Figure 1: Singapore's Planning Model

and guides development over the next 10 to 15 years. Before any changes to the Plan can be made, however, the URA must run it by the Master Planning Authority which is constituted of members from different government units. Planning regulations and Plans are clearly laid out in writing and available in the public domain ensuring transparency. Infrastructure like water, transport, and drainage are given the priority they deserve. The Master Plan incorporates planning for public utilities and the allocation of land for various functions. Planning and development take a disciplined, logical, and careful approach and nothing is wasted given the scant resources available.

Singapore's Plans are constantly reviewed to respond to changing needs, aspirations, trends, and the general environment. Singapore is seen as practicing a top-down planning approach which may seem like a paradox. This is because it also incorporates place-based planning whereby the community is engaged in the planning process to construe place identity and conservation spaces at the local level to promote a higher sense of community (Lee 2015, Yuen 2009). Singapore has only one Master Plan and corruption is near zero in the public service because of the strong disincentive and stiff punishment in place for offenders. Givers and receivers of bribes are both guilty of corruption and liable to prison terms of up to seven years or fine (up to USD 100,000) or both. The sanctions for public servants are even more severe. Development of land without appropriate permission is a criminal offense with the developer fined up to \$200,000 USD or imprisoned on conviction. Continuing offenders are subject to a further fine of not more than \$10,000 daily for every day the offense subsists after conviction and with inflation and rising salaries, this amount has progressively risen (Yuen 2009). The many years of conscientious planning, political will, and focus have seen Singapore emerge as the model it is today. The direct interventionist stance to urban development and the synchronization of its political, economic, social, and land use vision through the planning process has been a successful formula. The centralized URA control of the land use and development process ensures a more harmonious management. The oversight function of Master Planning Authority which is constituted of members from different government units provides the necessary check and balance during Master Plan revisions. Figure 1 showcases Singapore's planning model.

#### 4 Some Indicators of Singapore's Successful Planning Model

Singapore's urban planning and management is recognized as cutting edge. The various aspects of sustainability are incorporated into the guiding Concept and Master Plans (Chan et al. 2018, Tan 2006). The indicators of Singapore's urban planning and management are physical properties including but not limited to transportation, public health, air pollution, energy management, water management, and housing. 90% of Singaporeans own their homes (Deng et al. 2013, Wee et al. 2019), a feat that has been attributed to its original Prime Minister Lee Kuan Yew's belief that the best way to foster a sense of identity and build wealth was homeownership as it grounded people, making them stay and raise their families and build long-lasting community ties. Singapore promotes public transport as the most effective and environmentally-friendly way to get around. It is a pioneer in integrated sustainable transport policy and a leader in mobility management (Lee, Palliyani 2017). Technology has been effectively deployed to solve traffic problems and provide travel information in real-time. Integrated land use and transportation planning with effective policies as well as a constant improvement over the years, ensured this good transport system. Walking is actively encouraged with its attendant positive environmental and health benefits (Wang, Wong 2020). Residents are favorably disposed towards active mobility and report satisfaction with the walking infrastructure in place (López, Wong 2017). Homes and amenities are built around major transport hubs to facilitate easier access without needing cars. Singapore's population to landmass ratio and limited natural water sources makes it a water-stressed country. Yet, its water and wastewater management is one of the global best practices (Sanlath, Masila 2020). 30% of the country's water demand is met through the recycling of water. Today, it is a pioneer hydro hub, a status built off the success of its NEWater program (Lefebvre 2018). The Active, Beautiful, Clean (ABC) Waters program launched in 2006 integrates reservoirs and waterways with the surrounding environment achieving multi-purposes of aesthetics, water quality improvement, and runoff management (Goh et al. 2017). The government is also implementing a range of policies to achieve energy independence. Energy use is not subsidized and fuel and electricity prices are regulated by market forces. Stiff penalties apply for inefficient or excessive use of energy (Bhati et al. 2017). Singapore ranked second in the 2017 and 2019 safe cities index (Economist 2019b, Meixler 2017). The report studied the areas of health security, personal safety, digital security, and infrastructure safety. It ranked highest in personal safety which looked at how safe people are from violence and theft. It also ranked first in healthcare quality and accessibility. Digital technologies are infused in many aspects of life in Singapore. Residents can use digital technologies without fear of identity theft or privacy violations because of the security measures in place. The government adopts a holistic and proactive stance to cybersecurity, regularly reviewing and improving measures to improve the resiliency of the smart technologies in use (Luk 2019). Singapore has an excellent healthcare system that has been feted as the best in the world both in terms of service delivery and outcomes (Echendu, Okafor 2021, Lim 2017). However, concerns over rising costs in recent years have led to new measures by the government geared at reducing individual out-of-pocket expenses, expanding coverage, and providing advice on necessary tests and procedures (Lim 2017, Ong, Tan 2019). There is a high life expectancy of 83 years and low infant mortality of 2.4 per 1000 live births (Lim et al. 2017). Singapore has a robust mix of public and private healthcare systems whereby private physicians handle up to 80% of primary care and 80% of in-patient care is provided by public hospitals which provide subsidized care (Cheah 2001, Echendu 2021a). Governance is an elusive concept to measure as its components are subjective. However, Participation and Institutions are two acknowledged aspects of good governance (Johnston 2006). Singapore boasts strong institutions and incorporates citizen participation in planning (Soh 2006). Good governance components are taken here to be accountability, transparency (no corruption or zero tolerance), participation, efficiency and effectiveness, stability and the rule of law, planning, and predictability (Johnston 2006). These aspects are all areas Singapore ranks highly in. Singapore has been consistently ranked as Asia's greenest metropolis in the Asian Green City Index – a study commissioned by Siemens and conducted by

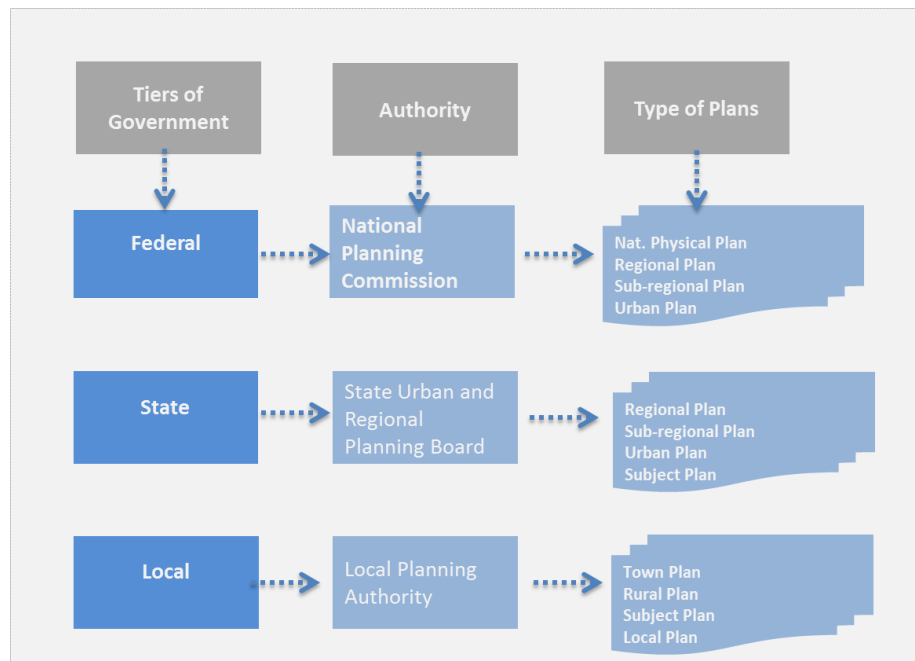
the independent Economist Intelligence Unit. The high performance of Singapore in the urban planning sphere has made it a global leader in urban planning and development.

## 5 Nigeria's planning model/system

Nigeria's planning model is also rooted in the British system. Most colonized countries simply adopted the planning system of their colonists. Formal urban development policies and strategies have been in existence in Nigeria since the colonial period (Lamond et al. 2015). Nigeria has had the 1863 town improvement ordinance, the Cantonment Proclamation of 1904, 1917 Township Ordinance, 1946 Town and Country Planning Ordinance all meant to guide physical planning and control the issuance of permits for buildings (Fatusin 2015, Omole, Akinbamiyo 2012). The Urban and Regional Planning Act serves to specify and distinguish the roles of the three tiers of government on policy issues like land zoning, physical planning, etc. The three tiers of government in Nigeria (federal, state, and local) are involved in urban planning in different capacities (Figure 2 is a graphical illustration of the planning process in Nigeria). The planning law in all the states in Nigeria is the Nigerian Urban and Regional Planning Act (Decree 88 1992). A later amendment was effected, the Urban and Regional Planning (Amendment) Decree No. 18 of 1992 (Dan-Jumbo et al. 2018). This replaced the previous British colonial government's 1946 Town Planning Ordinance that was in use prior (Dung-Gwom 2011). The federal level is tasked with roles such as: formulating national policies relating to urban and regional development and planning; devising and implementing the National Physical Development and Regional Plans; providing financial and technical assistance to states in devising and implementing plans; as well as promoting the training and education of planners. The state government is tasked with formulating its state policy for planning within the stipulations of the national policy. The state also prepares and implements its Regional, Sub-regional, and Urban Plans as well as Subject Plans. They also provide technical support and assistance to the local government on the implementation of Local, Rural, and Subject plans. The local level oversees the Town Plan, Rural Plan, Local Plan, and Subject Plan. Decree 88 1992 requires that a National Urban and Regional Planning Commission, made up of members who are professionals in different fields of urban planning with relevant years of experience, is constituted at the federal level. The various government parastatals and ministries involved in planning in different capacities each have representatives on the national commission. The commission is in charge of carrying out planning functions at the national level. At the state level, a board is also constituted and charged with state planning activities. The local planning authority is tasked with planning at the local level. The members must all be planning professionals.

Before the preparation of the National Plans, the National Commission is mandated to call for inputs from all concerned government and non-governmental establishments and the public whose contributions are to be considered in the draft preparation. This is to achieve integration between all levels of the Physical Development Plans and promote community participation. The draft plan is presented to the public and objections are welcomed and addressed before the final plan is presented to the legislature, which may either approve it in whole or in part or ask for amendments. The approved plan becomes the operative National Physical Development Plan, to be reviewed every five years in sync with changing needs and times. The review process follows the same process and stages as the original plan.

In making the Regional, Sub-regional and Urban/Master Plans, this same procedure is adopted at the state level. The same goes for the making of a Town Plan, Rural Plan, Local Plan, and Subject Plan which must also be in synchrony with the state plan. A Development Control Board in charge of all developments within their jurisdiction is established at each level of government. Every developer both government and private must submit plans (comprising all relevant information like drawings, designs, plans) for approval from the relevant control board before any physical constructions or development. There are various grounds for rejecting plans, including if the proposed development will have a major impact on the environment, inhabitants, or existing facilities.



Source: Lamond et al. (2015)

Figure 2: The planning system in Nigeria

A detailed Environmental Impact Assessment must be submitted by any developer wishing to develop land sizes from three hectares and above, and also for recreational and commercial buildings of stipulated sizes. The Land Use Act 1990 empowers the government to acquire any privately held land for development purposes (Ige et al. 2016).

Decree 88 1992 on paper, is comparable to global standards, but its adoption in practice at all levels of government leaves a lot to be desired. Non-compliance to laws and policies has been identified as a problem of the Nigerian urban built environment, one which has led to many environmental problems (Olugbenga, Adekemi 2014). Even though citizens are encouraged to contribute, participation culture is not deep (Chado et al. 2016), and the government does not obey its laws. Some citizens believe that their contributions would have no impact on the scheme of things (Badiora, Ojo 2021). There are cases where Governors themselves decide where to site facilities without recourse to due processes provided by the law (Dung-Gwom 2011, Osuocha, Njoku 2012). Figure 2 highlights Nigeria's planning system.

## 6 Challenges and Strengths of Nigeria's Planning system

Nigeria's planning sphere is syncretic. It comprises a combination of customary and colonial practices, made up of mostly outdated policies and plans (Lamond et al. 2015). The historical development and evolution of land administration, governance, and planning regimes in Nigeria from two distinct paradigms is part of the failure being witnessed in the planning system (Gyau 2018). The result is confusion and weak engagement with formal systems. This limits the capacity for well-conceived national and state urban development goals of being realized. The colonial segregation and exclusionary planning policies have largely been replaced by various policies that recognize, but cannot enforce, participation, equity, and urban sustainability. A positive trend in Nigeria's urban planning is the various attempts to change planning and development patterns. For instance, there is a National Urban Development Policy (NUDP) which is the national framework designed to guide sustainable urban development. The presence of such policies signifies an overall acknowledgment of the importance of planning directives.

However, many weaknesses abound. The preferred choice of various state governments

to consult foreign planning companies in the drafting of local Master Plans presents a weakness due to the failure to incorporate local first-hand knowledge. This leads to a disconnect with realities on the ground. Also, the government's inability to set up the requisite bodies as mandated by the decrees continues to be one of the implementation challenges. Only one state out of 36 has been able to set up an Urban and Regional Planning Board and the requisite Planning Authorities ([Lamond et al. 2015](#)).

[Onokerhoraye \(1977\)](#) pointed out the symptoms of the improper land-use patterns in the majority of Nigeria's urban centers citing the deteriorated physical environment, poor transport systems, inexistent community facilities. Sadly, this has only worsened four decades later. Long-term planning for the development of cities and rural areas remains inadequate. The lack of continuity in the planning, implementation, and governance process presents challenges in Nigeria's planning field ([Momoh et al. 2018](#)). The various regulations and plans in place are incomprehensive and piecemeal. They do not sufficiently cover land use, housing, transportation, conservation, and safety ([Eme 2013](#)).

By contrast, the integration of these various key sectors in urban planning is a central aspect of model comprehensive plans like in Singapore. Building codes and zoning where available, are not enforced. Urban regulations and policies aim to control and guide urbanization to prevent problems associated with the growth of cities, and to harness the benefits that come from expansion ([UN-Habitat 2016](#)). Unfortunately, this is not the case in Nigeria where the government often fails or is slow to uphold the law and environmental concerns ([Eneh 2011](#)). Of particular concern are new housing developments, city infrastructure, and land-use decisions that do not incorporate the tenets of sustainable development ([Echendu 2020b](#)). Development in everyday sectors like housing and infrastructure continues to be taken seriously in developed countries, as well as some other developing countries, that have a clear growth and development pathway ([Gurara et al. 2018](#)). In Nigeria however, these sectors have been almost totally ignored. Nigeria has been riddled with political instability since its independence in 1960 and is only 21 years into an uninterrupted democracy which also saw a change in leadership with a different party at the helm of affairs from 2015. While good leadership and governance are key for urban development, this essential ingredient has been lacking in the Nigerian polity ([Aluko 2011a](#)). There has been a significant surge in its population since independence leading to increased urbanization and further expansion of slums. The existence of planning authorities is not felt, and open spaces in the urban areas are a rarity. Nigeria's poor governance which manifests in the current poor state of every sector of the country's economy has seen secession calls by its various ethnic groups grow much louder than in the past. This has been aided by the fact that different tribes and ethnic groups dominantly occupy different parts with tribalism rife in the country. The government has also been very high handed and brutal in quieting these dissenting voices, but the dissenting voices are rising louder and louder. Planning patterns and governance have been known to serve a strategic purpose of fostering unity among diverse groups ([Shatkin 2014](#), [Yeoh 2004](#)).

The state of Nigeria's urban planning is poor. Thought has been given to planning as evidenced by various laws and policies on the ground and one would expect a different reality. What is obtainable is a place rich with laws and policies but deficient in implementation which speaks of poor urban governance. There is a proliferation of independent planning bodies in charge of different aspects of planning and there is no coordination and integration of approach among these planning bodies ([Ogu 1999](#)). Corruption is endemic in all Nigeria's agencies including the planning sector ([Gyau 2018](#), [Oladosu et al. 2015](#)). This has resulted in government planners seeking personal gratification and approving non-compliant plans for money without following existing rules and the Master Plan ([Kingsly, Johnson-Rokosu 2015](#)). The majority of the ongoing development in Nigeria to meet housing needs is either owner-built or developer-built ([Lamond et al. 2015](#)). There is, therefore, a lack of infrastructure and services in the new developments because of the huge costs associated with providing infrastructure, something individuals cannot fund.

The political nature of planning cannot be overemphasized as planning itself is a political exercise ([Levy 2016](#)). This is even more evident and pronounced in Nigeria where planning is easily deployed as a handy tool for the political and economic elites to

gain and perpetuate power, profit, and deal with opponents through the intermittent enforcement/non-enforcement of planning regulations (Aluko 2011a, Chiweshe 2021). The planning system has been known to promote vested interests as seen in the allocations of prime real estate to the elites connected to those in power (Gyau 2018). Illegal conversion of reserved areas to industrial or commercial areas by governments in power is prevalent (Galadima et al. 2018).

Non-compliance with Master Plans is the norm and practice in Nigeria even in its capital city Abuja (Gumel et al. 2020, Obiadi et al. 2019). While various instruments of planning law and policies provide for periodic review of the Master Plan, the reality is far from practice (Echendu 2021b). There are also instances whereby Master Plans have been altered arbitrarily without observing due process (Jack et al. 2017).

For economic and social sustainability, people need to inhabit an environment that will enable them to thrive and be in good health to realize other sustainability goals (Hawkins 2010). The built environment needs to come to the forefront of urban planning, as it is the activities of the built environment that have the most impact on the environment.

## 7 Replicability of the Singapore model in Nigeria

Singapore's status as a city-state gives it the unique advantage of having policies from the central government implemented much more easily. Its success in urban planning has ensured it continues to rank highly in various global liveability rankings (Allam, Allam 2020, Krzywda, Majewska 2019). Cities are different but best practices exist in urban management and governance that can inform practice elsewhere (Shell 2014). Singapore is thus, a good example of a best practice in urban management and governance with a model worthy of emulation by developing countries. Singapore's planning success has also seen other countries implement lessons from Singapore in their city planning. For example, a London group improved management of its inner-city traffic using Singapore's example and Tianjin city in China was also birthed from collaboration with Singapore (Henderson 2012). Replication is thus not impossible.

Nigeria on its part is renowned for its poorly planned and blighted cities (Fabiya 2017). Nigerian cities generally, do not compare with global cities and lack administrative effectiveness. Lagos, one of Nigeria's megacities, for instance, ranked as the 3rd least liveable place in 2018 and 2nd least liveable place in 2019 (Economist 2019a, Kiunguyu 2018). This commercial center is plagued by various forms of urban problems that negatively impact liveability (Dano et al. 2019). Shatkin (2014) alludes that developing countries are especially drawn to the Singapore model because they aspire to dominate planning control and use it for political gains. However, urban planning is already being used as a tool of political gain in Nigeria by the government even without the adoption of the Singapore model.

The historical similarities between the two countries signify that positive transformation is not a far-fetched ideal in Nigeria's urban planning sphere. Some of these similarities include both nations being former British colonies that gained their independence only a few years apart. Both countries were also previously classified as third-world countries. They are also polyglot, multi-ethnic, and multi-religious countries. Differences include size (population and landmass) and natural resources endowment. Singapore is a tiny island country not rich in natural resources (Portes 2020), while Nigeria is much bigger and is blessed with an enviable array of natural resources. Despite Singapore's lack of endowment in natural resources, it has transformed itself into a first-world country in one generation with a model numerous countries desperately try to replicate. Nigeria, on its part, is still languishing at the bottom rung of development. Replicability is possible due to these common characteristics of both countries who favor Master Planning models. Nigeria will thus not be veering into unknown territory. Even though Master Planning is deemed 'old style' in some quarters and is facing growing critique with its opponents arguing it should be replaced with the more flexibly structured strategic urban management plans (Watson 2009). Strategic urban planning is deemed a more progressive planning method because it can respond to changes as they happen and aligns better with the interests and needs of various stakeholders (Muminović et al. 2020). Despite

its critics, Master Planning is still the preferred planning approach in many parts of the world including Singapore and Nigeria, and has proven particularly effective in Singapore. Planning is not a one glove fits all approach. Countries need to adopt planning styles that suit their local situation. In Nigeria particularly, given its size and political dynamics, Master planning is better suited in contrast to Strategic Planning. The flexibility of Strategic planning makes it more subject to the whims and caprices of the ruling class and government in power. Given Nigeria's antecedents on the abuse of planning laws by governments in power, Strategic Plans are much more likely to be abused and arbitrarily modified to suit personal and political gains. Such constant politically motivated changes would impede progress in the urban sphere. A tweaked form of Master Planning which can even go by a different name that fully considers our unique local environment, the traditional planning system and full public participation can help improve Nigeria's urban development.

There is no perfect system on earth, but patches of excellence abound in different places that can be tweaked to suit the local environment. The Singapore model also faces criticism for its style of governance despite its proven excellence in the urban management sphere. Singapore has faced criticisms and expressed regrets for some of its actions. For example, the demolition of heritage buildings in the process of its building of a new modern city which it has sought to remedy by conserving existing heritage buildings. It is important to note that Singapore has only one level of government in a single city-state urban area and has not had the option or need to separate urban planning and management activities. The state is responsible for services including parks and housing which are delivered elsewhere by lower levels of government. This means it is easier for Singapore to better achieve coordination with its planning institutions. Nigeria, in contrast, has three levels of government with different roles.

Given Nigeria's system of government and size, it only needs to emulate those core principles that have led to Singapore's success story for its cities to occupy the pride of place they deserve. Streamlining land use planning authorities to handle every aspect from long-term strategic plans to everyday development control just like Singapore will eliminate the conflict of interest among the various planning agencies in Nigeria. Singapore's success can be broken down into a systematic framework that leaders can adapt to their environment ([Singapore Ministry of the Environment and Water Resources 2015](#)). The Singapore model's replicability lies in how it is achieved, the spirit, and hard work that can be adapted to every environment no matter the uniqueness. Nigeria can adapt these factors to suit its environment and make gains in urban development. Nigeria has in the Singapore model, a good and workable example to modify to suit its environment. There has been a long history of imposing planning styles from the global North in the global Southern countries some of which were unsuited to the local environment and which had little concern for promoting sustainability ([Watson 2009](#)). Replicating aspects of Singapore's urban planning and governance success will be a change to the European colonial-influenced planning practice and bring a breath of fresh air. While Singapore's planning also has colonial influences, it has succeeded in achieving its own unique 'Singapore model' of planning that even their colonists seek to replicate. The fact that it is not a global north country will be a shift to an extent from Nigeria's colonial planning legacy which has not exactly been a success.

## 8 Recommendations for Policymakers

Successful planning styles in a part of the globe can potentially influence planning elsewhere ([Watson 2009](#)). Understanding context, differences, and similarities adapting, and factoring them into the local context during adoption is key to success. Given the preference for the master planning system expressed by the two study countries, a shift by Nigeria from its current system to adopt some of Singapore's core elements which have made it the great success it is today will not be a major disruptive move. To facilitate positive change in Nigeria's planning sphere drawing lessons from the Singapore model, the following is recommended:

1. *Drawing up Concept Plans (or similar long term plans) in full cognizance of the traditional planning system and adequate implementation of Plans:* Just as the Concept Plan guides Singapore's long-term planning, Nigeria can have a similar plan to guide the overall national development and outline goals which will then be translated into relevant custom Plans at the state and local government levels. Urban Plans are important planning tools and have proven effective in many climes. They are a detailed guide to achieving a purpose. Plans exist for a reason and are meant to guide development and thus need to be properly implemented. Some Nigerian cities already have Master Plans although the implementation is poor. It is important to ensure appropriate implementation and monitoring of existing Master Plans in states and cities that have one. Preparation and implementation of new Plans where they are non-existent or out of date are advocated. Moreover, out-of-date Master Plans need to be reviewed to ensure they are responsive to present realities. Such reviews must involve active public participation to build support and acceptance.
2. *Consistency in policy development, integration, and cooperation:* Adopting a long-term planning approach needs strong policy support. The precarious nature of Nigeria's political system makes long-term planning a challenge but this can be overcome by ensuring the independence of the planning institutions charged with executing the long-term planning Plans. The overarching land use policy must consider the various local contexts, similarities, and differences in the relevant planning policy documents. Where there are different agencies involved in executing laws and policies, a framework should be in place to enhance cooperation and avoid duplication of tasks, efforts, roles and eliminate in-fighting. This framework should also include the private sector and general citizen participation. The lack of integration of colonial planning legacy and customary land use practices creates tension between government planning authorities and traditional authorities. This also necessitates policy-level attention. Given the current and projected population growth, it is key for urban expansion policy to adopt a cohesive, holistic, and strategic stance instead of the current piecemeal approach, for a better planning outcome.
3. *Retain current three-tier planning system but strengthen planning institutions at all levels:* The problem of weak institutions including institutions charged with urban development like the ministries of urban development is a development barrier. Planning institutions should be strengthened and made independent to be able to hold their ground in the face of political interventions from powerful individuals who circumvent the system for their benefit. The local governments also need to be strengthened to be able to efficiently perform their roles in urban development as mandated by Decree no 88 1992. National-level plans should specify national planning guidelines while state-level Plans work with these guidelines to formulate state goals and planning projects that will deliver the outlined goals. The same needs to happen at the local level. There is a need for state and local level urban planning to map out land use regulations to align with constituents' aspirations. The state and local level plans need to be in accordance and according to national guidelines to ensure congruence. A timeline backed by law with relevant sanctions should guide planning administration activities to eliminate bureaucracy and time wastage associated with government activities in Nigeria.
4. *Putting in place strong disincentives for corruption:* Effective systems of control are supported by stiff and firm sanctions to deal with contravention if it is to be effective as intended. Enforcement of Development Control is an important aspect of planning but largely fails due to factors including corruption and political interference. To change the paradigm, adopting stiff sanctions along the lines of what is practiced in Singapore is highly recommended to serve as a deterrent to offenders and ensure better compliance. Receivers and givers of bribes both deserve punishment and erring government planners who go against the rules should also be relieved of their duties to sanitize the system.

## 9 Conclusion

While countries are unique, there are opportunities to learn from each other and adapt best practices to local situations. Singapore is one country that has achieved immense success because of its purposeful approach to national outcomes. Environmental, social, and economic sustainability is Singapore's national goal which has been fostered by progressive urban planning and development. Nigeria can emulate the key factors of focused leadership, discipline, and clear goals, planning, and execution that made Singapore a resounding global success. Given that Nigeria has the compulsory land acquisition act like Singapore, there is an opportunity to use this Act to foster integration among its diverse peoples just as Singapore has achieved. Even though Nigeria is more ethnically and culturally diverse than Singapore, adequate urban planning can help it achieve its goals of unity along the lines of Singapore's unification strategy. Ensuring cohesion and taking a central and integrated approach to planning and changing land ownership rules and working to integrate the various tribes and ethnic groups in the manner that Singapore has done will go a long way in achieving cohesion and unity. Governments in power are encouraged to shelve political and selfish ambitions in the application of the Planning Act and needed reforms in Nigeria. Singapore's successful outcomes are built on the twin foundations of sustainable urban planning and development and good urban governance. Singapore adopts a long-term planning approach, sometimes as far as a century ahead, but retains the flexibility to review plans as needs change. This is certainly an approach Nigeria can emulate to achieve environmental, economic, and social development. Adopting a tweaked form of the Singapore model could be the panacea to the woe that is the state of Nigeria's Urban planning. Singapore's success did not happen by chance but is a result of inspirational leadership, hard work, and vision. The Singapore model is unique and not replicable in its entirety in Nigeria, but the core success factors can be drawn upon which is regarded in this paper as visionary leadership, discipline, focus, and understanding where the country's strength lies and capitalizing on it to achieve sustainable development.

## References

- Abubakar IR, Aina YA (2019) The prospects and challenges of developing more inclusive, safe, resilient and sustainable cities in Nigeria. *Land Use Policy* 87: 104105. [CrossRef](#)
- Akbar N, Abubakar IR, Bouregh AS (2020) Fostering urban sustainability through the ecological wisdom of traditional settlements. *Sustainability* 12: 10033
- Allam Z, Allam Z (2020) Seeking liveability through the Singapore model. In: Zaheer A (ed), *Urban Governance and Smart City Planning*. Emerald Publishing, Bingley, 45–76
- Aluko O (2011a) Development control in Lagos state: An assessment of public compliance to space standards for urban development. *African Research Review* 5: 169–184
- Aluko O (2011b) Urbanization and effective town planning in Nigeria. *African Research Review* 5: 126–139
- Alumona I, Onwuanabile K (2019) Environmental insecurity in Nigeria. In: Oshita OO, Alumona IM, Onuoha FC (eds), *Internal Security Management in Nigeria*. Springer, Cham, 181–213
- Avis WR (2019) Urban expansion in Nigeria. K4D helpdesk report 692. Brighton, UK: Institute of development studies. Retrieved from <https://opendocs.ids.ac.uk/-opendocs/handle/20.500.12413/14797>
- Awe O, Gil-Alana O, A L (2019) Time series analysis of economic growth rate series in Nigeria: Structural breaks, non-linearities and reasons behind the recent recession. *Applied Economics* 51: 5482–5489

- Badiora A, Ojo D (2021) Perceived constraints to public participation in contemporary Nigerian land-use planning. *Town and Regional Planning* 78: 16–33
- Bhati A, Hansen M, Chan C (2017) Energy conservation through smart homes in a smart city: A lesson for Singapore households. *Energy Policy* 104: 230–239. [CrossRef](#)
- Birch EL (2016) A midterm report: Will habitat iii make a difference to the world's urban development? *Journal of the American planning association* 82: 398–411
- Brenya E, Adu-gyamfi S, Warden E (2017) Globalization and development gap in developing countries: A comparison of post-independence development trajectories of Ghana and Singapore. Technical report
- Brundtland GH (1987) Report of the World Commission on environment and development: Our common future. United nations
- Caprotti F, Cowley R, Datta A, Broto VC, Gao E, Georgeson L, Herrick C, Odendaal N, Joss S (2017) The new urban agenda: Key opportunities and challenges for policy and practice. *Urban research & practice* 10: 367–378
- Chado J, Johar FB, Zayyanu M (2016) Challenges impeding public participation for the development of urban communities in Nigeria. *Indian Journal of Science and Technology* 9: 46
- Chan F, Chuah C, Ziegler A, Dabrowski M, Varis O (2018) Towards resilient flood risk management for Asian coastal cities: Lessons learned from Hong Kong and Singapore. *Journal of Cleaner Production* 187: 576–589. [CrossRef](#)
- Cheah J (2001) Chronic disease management: A Singapore perspective. *Bmj* 323: 990–993. [CrossRef](#)
- Chew V (2009) History of urban planning in Singapore. National Library Board. Retrieved July 23, 2016 from [http://eresources.nlb.gov.sg/infopedia/articles/SIP\\_-1564-2009-09-08.html](http://eresources.nlb.gov.sg/infopedia/articles/SIP_-1564-2009-09-08.html)
- Chiweshe MK (2021) Urban land governance and corruption in Africa. In: Home R (ed), *Land Issues for Urban Governance in Sub-Saharan Africa*. Springer, Cham, 225–236
- Colléony A, Shwartz A (2019) Beyond assuming co-benefits in nature-based solutions: A human-centered approach to optimize social and ecological outcomes for advancing sustainable urban planning. *Sustainability* 11: 4924
- Curien R (2017) Singapore, a model for (sustainable?) urban development in China. An overview of 20 years of Sino-Singaporean cooperation. *China Perspectives* 2017: 25–35. [CrossRef](#)
- Currie P, Musango J (2017) African urbanization: Assimilating urban metabolism into sustainability discourse and practice. *Journal of Industrial Ecology* 21: 1262–1276
- Dan-Jumbo N, Metzger M, Clark A (2018) Urban land-use dynamics in the Niger delta: The case of Greater Port Harcourt watershed. *Urban Science* 2: 108
- Dano U, Balogun A, Abubakar I, Aina Y (2019) Transformative urban governance: Confronting urbanization challenges with geospatial technologies in Lagos, Nigeria. *GeoJournal* 85: 1039–1056. [CrossRef](#)
- Deng Y, Sing TF, Ren C (2013) The story of Singapore's public housing: From a nation of home-seekers to a nation of homeowners. In: Chen J, Stephens M, Man Y (eds), *The future of public housing*. Springer, 103–121
- Dung-Gwom JY (2011) Urban and regional planning in Nigeria today (1999 to 2011). Technical report

- Echendu AJ (2020a) The impact of flooding on Nigeria's sustainable development goals (SDGs). *Ecosystem Health and Sustainability* 6. [CrossRef](#)
- Echendu AJ (2020b) Urban planning – “it's all about sustainability”: Urban planners' conceptualizations of sustainable development in Port Harcourt, Nigeria. *International Journal of Sustainable Development and Planning* 15: 593–601. [CrossRef](#)
- Echendu AJ (2021a) Critical appraisal of an example of best practice in urban sustainability. *Central European Journal of Geography and Sustainable Development* 3: 26–41. [CrossRef](#)
- Echendu AJ (2021b) Relationship between urban planning and flooding in Port Harcourt city, Nigeria; insights from planning professionals. *Journal of Flood Risk Management*: 1–13. [CrossRef](#)
- Echendu AJ (2022) Flooding in Nigeria and Ghana: opportunities for partnerships in disaster-risk reduction. *Sustainability: Science, Practice and Policy* 18: 1–15. [CrossRef](#)
- Echendu AJ, Georgeou N (2021) ‘Not going to plan’: Urban planning, flooding, and sustainability in Port Harcourt City, Nigeria. *Urban Forum*. [CrossRef](#)
- Echendu AJ, Okafor PCC (2021) Smart city technology: A potential solution to Africa's growing population and rapid urbanization? *Development Studies Research* 8: 82–93. [CrossRef](#)
- Economist (2019a) The global liveability index. The Economist Intelligence Unit. Retrieved from <https://www.ebeinternational.ca/pdf/Liveability-Free-report-2019.pdf>
- Economist (2019b) Urban security and resilience in an interconnected world. The economist, intelligence unit. retrieved from <https://safecities.economist.com/wp-content/uploads/2019/08/Aug-5-ENG-NEC-Safe-Cities-2019-270x210-19-screen.pdf>
- Eme OI (2013) Urban planning problems in Nigeria: A case of Onitsha metropolis of Anambra state. *Singaporean Journal of Business, Economics and Management Studies* 51: 1–19
- Eneh OC (2011) Managing Nigeria's environment: The unresolved issues. *Journal of Environmental Science and Technology* 4: 250–263
- Environmental Defence (2013) The high costs of sprawl: Why building more sustainable communities will save us time and money. Retrieved from <https://environmentaldefence.ca/wp-content/uploads/2016/01/CostsofSprawl-FINAL.pdf>
- Fabiya O (2017) Urban space administration in Nigeria: Looking into tomorrow from yesterday. *Urban Forum* 28: 165–183. [CrossRef](#)
- Farrell K (2018) An inquiry into the nature and causes of Nigeria's rapid urban transition. *Urban Forum* 29: 277–298. [CrossRef](#)
- Fatusin AF (2015) Urban development planning in Nigeria: prospects and challenges. *International Journal of Innovation and Scientific Research* 13: 243–248
- Galadima A, Dan A, Maigida J (2018) A review of political influence and governance on physical planning practice in Nigeria: the Lagos and Kano experiences. Paper presented at the 12th annual national conference organized by college of environmental studies, kaduna polytechnic, kaduna, 2018
- Goh XP, Radhakrishnan M, Zevenbergen C, Pathirana A (2017) Effectiveness of runoff control legislation and Active, Beautiful, Clean (ABC) waters design features in Singapore. *Water*, 9(8): 627. [CrossRef](#)
- Gohar A (2016) Urbanization & sustainable development: Evolution and contemporary challenges. *Journal of civil engineering and architecture research* 3

- Gumel I, Aplin A, Marston P, G C, Morley J (2020) Time-series satellite imagery demonstrates the progressive failure of a city master plan to control urbanization in Abuja, Nigeria. *Remote Sensing* 12: 1112
- Gurara D, Klyuev V, Mwase N, Presbitero A (2018) Trends and challenges in infrastructure investment in developing countries. *International Development Policy – Revue internationale de politique de développement* 10
- Gyau K (2018) Urban development and governance in Nigeria: challenges, opportunities and policy direction. *International Development Planning Review* 40: 27–49
- Hawkins C (2010) Sustainability, human rights, and environmental justice: Critical connections for contemporary social work. *Critical Social Work* 11: 68–81
- Henderson JC (2012) Planning for success: Singapore, the model city-state? *Journal of International Affairs* 65: 69–83
- Ho AFW, Zheng H, Cheong KH, En WL, Pek PP, Zhao, X and Morgan G, Earnest A, Tan B, Ng Y, Foo L, Ong M (2020) The relationship between air pollution and all-cause mortality in Singapore. *Atmosphere* 11: 9. [CrossRef](#)
- Horn A (2020) Reviewing implications of urban growth management and spatial governance in the global south. *Planning Practice & Research*, 1-14
- Ige V, Akintomide A, Adeola T (2016) Compulsory land acquisition and compensation in Nigeria: Coastal communal perception. *Ethiopian Journal of Environmental Studies and Management* 9: 545–553
- Jack M, Coles A, Piterou A (2017) Sustainable project management in urban development projects: A case study of the Greater Port Harcourt city development project in Rivers State, Nigeria. *WIT Transactions on Ecology and the Environment* 210: 209–219
- Jarah SHA, Zhou B, Abdullah RJ, Lu Y, Yu W (2019) Urbanization and urban sprawl issues in city structure: A case of the Sulaymaniah Iraqi Kurdistan Region. *Sustainability* 11: 485
- Johnston M (2006) Good governance: Rule of law, transparency, and accountability. New York: United Nations Public Administration Network
- Kingsly M, Johnson-Rokosu SF (2015) An evaluation of corruption practices in ministries, departments, agencies in public sector in developing nations. SSRN. [CrossRef](#)
- Kiunguyu K (2018) Six african countries on the 2018 list of least liveable cities in the world. Retrieved <https://thisisafrica.me/african-countries-least-liveable-cities/>
- Krzywdka J, Majewska B (2019) Social and economic aspects in city management in context of sustainable development. *Zeszyty Naukowe Politechniki Czestochowskiej. Zarzadzanie* 33: 79–89
- Lamond J, Awuah K, Lewis E, Bloch R, Falade B (2015) Urban land, planning and governance systems in Nigeria. Urbanisation research Nigeria (URN) research report. London: ICF international
- Larijani AH (2016) Sustainable urban development, concepts, features, and indicators. *International Academic Journal of Science and Engineering* 3: 9–14
- Lee D, Palliyani S (2017) Sustainable transport policy-an evaluation of Singapore’s past, present and future. *Journal of Infrastructure, Policy and Development* 1: 112–128
- Lee J (2015) We built this city: Public participation in land use decisions in Singapore. *Asian Journal of Comparative Law* 10: 213–234

- Lefebvre O (2018) Beyond NEWater: An insight into Singapore's water reuse prospects. *Current Opinion in Environmental Science & Health* 2: 26–31. [CrossRef](#)
- Leggett C (2007) From industrial relations to manpower planning: The transformations of Singapore's industrial relations. *The International Journal of Human Resource Management* 18: 642–664
- Levy JM (2016) *Contemporary urban planning*. Taylor & Francis
- Lim J (2017) Sustainable health care financing: the Singapore experience. *Global Policy* 8: 103–109. [CrossRef](#)
- Lim WS, Wong SF, Leong I, Choo P, Pang WS (2017) Forging a frailty-ready healthcare system to meet population ageing. *International journal of environmental research and public health* 14: 1448. [CrossRef](#)
- López MCR, Wong YD (2017) Attitudes towards active mobility in Singapore: a qualitative study. *Case studies on transport policy* 5: 662–670. [CrossRef](#)
- Luk CY (2019) Strengthening cybersecurity in Singapore: Challenges, responses, and the way forward. In: Abassi R, B A, Douss C (eds), *Security Frameworks in Contemporary Electronic Government*. IGI Global, 96–128)
- Medina MG, Huete García M (2020) Real innovation in urban planning? assessing the institutional capacity in the frame of the integrated sustainable urban development programmes. *European Planning Studies* 28: 1139–1160
- Meixler E (2017) These are the most (and least) safe cities in the world. Time. retrieved from <https://time.com/4983344/worlds-safest-best-worst-cities/>
- Meng M, Zhang J, Wong YD (2016) Integrated foresight urban planning in Singapore. *Proceedings of the Institution of Civil Engineers-Urban Design and Planning* 169: 1–13
- Meyer N, Auriacombe C (2019) Good urban governance and city resilience: An Afrocentric approach to sustainable development. *Sustainability* 11: 5514
- Momoh J, Opaluwah A, Albeera H (2018) Challenges facing Nigeria's urban environment: The Abuja case. *Journal of Sustainable Development in Africa* 20
- Muminović E, Radosavljević U, Beganović D (2020) Strategic planning and management model for the regeneration of historic urban landscapes: The case of historic center of Novi Pazar in Serbia. *Sustainability* 12: 1323
- Musa H, Yacob M, Abdullah A, Ishak M (2018) Enhancing subjective well-being through strategic urban planning: Development and application of community happiness index. *Sustainable Cities and Society* 38: 184–194. [CrossRef](#)
- Ng MK (2018) The art of planning theory and practice in Singapore. *Planning Theory and Practice* 19: 319–323. [CrossRef](#)
- Obiadi B, Ezezue A, Uduak P (2019) Abuja: Nigeria's spatial economic turmoil and urban development disarray. *Current Urban Studies* 7: 371–398
- Ogu VI (1999) Evolutionary dynamics of urban land use planning and environmental sustainability in Nigeria. *Planning Perspectives* 14: 347–368
- Oladosu R, Bwala H, Muhammad I (2015) Application of physical planning and design strategies to urban violence and crime prevention in Nigeria. *International Journal of Scientific & Engineering Research* 6: 1633–1642
- Olugbenga E, Adekemi O (2014) Implications of urban and regional planning laws on urban renewal projects in Akure, Nigeria. *Journal of Environment and Earth Science* 4
- Omole F, Akinbamiyo O (2012) Land development and planning laws in Nigeria: The historical account. *Journal of Policy & Globalization* 8

- Ong Y, Tan G (2019) Appropriate healthcare in Singapore: A reflection. *Proceedings of Singapore Healthcare* 28: 3–5. [CrossRef](#)
- Onokerhoraye A (1977) Urban land use in Nigeria: Problems and implications for policy. *The Town Planning Review* 48: 59–72
- Osuocha L, Njoku J (2012) An examination of the Nigerian sustainable urban development strategies and governance. Paper presented at the West Africa Built Environment Research (WABER) conference 24–26 July 2012 Abuja, Nigeria
- Portes A (2020) A tale of three cities: The rise of Dubai, Singapore, and Miami compared. *Sustainability* 12: 8566
- Sanlath C, Masila N (2020) Water demand management: What lessons can be learned from Singapore’s water conservation policy? *Water Utility Journal* 26: 1–8
- Shatkin G (2014) Reinterpreting the meaning of the ‘Singapore model’: State capitalism and urban planning. *International Journal of Urban and Regional Research* 38: 116–137. [CrossRef](#)
- Shell (2014) New lenses on future cities – a new lens scenarios supplement. Shell International BV. Retrieved from [https://www.shell.com/energy-and-innovation/the-energy-future/scenarios/new-lenses-on-future-cities/\\_jcr\\_content/par/relatedtopics.-stream/1519786784443/4af0dbaee78537131e05449aaf5f63b3b953b52c/newlensesonfuturecities-june-2014.pdf](https://www.shell.com/energy-and-innovation/the-energy-future/scenarios/new-lenses-on-future-cities/_jcr_content/par/relatedtopics.-stream/1519786784443/4af0dbaee78537131e05449aaf5f63b3b953b52c/newlensesonfuturecities-june-2014.pdf)
- Singapore Ministry of the Environment and Water Resources (2015) Sustainable Singapore blueprint. Singapore: Singapore Government
- Sodiq A, Baloch A, Khan S, Sezer N, Mahmoud S, Jama M, Abdelaal A (2019) Towards modern sustainable cities: Review of sustainability principles and trends. *Journal of Cleaner Production* 227: 972–1001
- Sofeska E (2016) Relevant factors in sustainable urban development of urban planning methodology and implementation of concepts for sustainable planning (planning documentation for the master plan Skopje 2001–2020). *Procedia Environmental Sciences* 34: 140–151
- Soh, E Y YB (2006) Government-aided participation in planning Singapore. *Cities* 23: 30–43. [CrossRef](#)
- Taiwo F, Gbolabo O (2020) Exploring political will as a veritable tool for localizing and implementing the new urban agenda in developing countries: Lesson from Nigeria. *World Journal of Innovative Research* 8: 139–146
- Tan EK (2020) From third world to first world: Law and policy in Singapore’s urban transformation & integration. *Vietnamese Journal of Legal Sciences* 2: 96–114
- Tan KW (2006) A greenway network for Singapore. *Landscape and Urban Planning* 76: 45–66. [CrossRef](#)
- Tan S (2017) Strategy for environmental sustainability for island-state Singapore-engaging the public. *Asian Journal of Public Affairs* 9: e3. [CrossRef](#)
- Tang H, Lee Y (2016) The making of sustainable urban development: A synthesis framework. *Sustainability* 8: 492
- UN-Habitat (2011) United Nations human settlements programme, planning sustainable cities: Global report on human settlements 2009 (UN Habitat and Earthscan), 2009. *Environment and Urbanization Asia* 2: 149–149. [CrossRef](#)
- UN-Habitat (2016) Urbanization and development: emerging futures. *World cities report* 3: 4–51

- UNCED – United Nations Conference on Environment and Development (1992) *Agenda 21, Rio Declaration, Forest Principles*. United Nations, New York
- Wang Y, Wong YD (2020) Repositioning urban heritage for active mobility: Indications from news coverage in Singapore. *Cities* 98: 102525. [CrossRef](#)
- Watson V (2009) ‘The planned city sweeps the poor away ...’: Urban planning and 21st century urbanisation. *Progress in planning* 72: 151–193. [CrossRef](#)
- Wee L, Tsang T, Yi H, Toh S, Lee G, Yee J, Lee S, Oen K, Koh G (2019) Loneliness amongst low-socioeconomic status elderly Singaporeans and its association with perceptions of the neighbourhood environment. *International journal of environmental research and public health* 16: 967
- Wei J, Qian J, Tao Y, Hu F, Ou W (2018) Evaluating spatial priority of urban green infrastructure for urban sustainability in areas of rapid urbanization: A case study of Pukou in China. *Sustainability* 10: 327
- Yeoh B (2004) Cosmopolitanism and its exclusions in Singapore. *Urban Studies* 41: 2431–2445. [CrossRef](#)
- Yiran G, Ablo A, Asem F, Owusu G (2020) Urban sprawl in sub-Saharan Africa: A review of the literature in selected countries. *Ghana Journal of Geography* 12: 1–28
- Yuen B (2009) Guiding spatial changes: Singapore urban planning. In: Lall SV, Freire M, Yuen B, Rajack R, Helluin JJ (eds), *Urban Land Markets*. Springer, 363–384

