

LAGOS

RESILIENCE STRATEGY



RESILIENT

LAGOS



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LAGOS

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INTRODUCTION



LETTER FROM THE GOVERNOR OF LAGOS STATE

I am delighted to share with you the Lagos Resilience Strategy, the first of its kind in our Country, Nigeria. As Nigeria transits to an urban majority, the Lagos Resilience Strategy demonstrates our visionary role as the pioneer city that addresses the challenges of population growth, rapid urbanization and environmental changes in an integrated manner.

The strategy is anchored on an inclusive approach in which the city's stakeholders across sectors including Academia, Business, Government, Non-governmental, Local communities, Traditional institutions and Citizens were mobilized to identify the city's main challenges and co-create dynamic initiatives to address them. It offers a clear pathway towards achieving our vision

of becoming Africa's model megacity. It outlines tangible actions for anticipating, mitigating and responding to the most critical challenges that we are confronted with as a city. It positions us towards becoming a city that values and exemplifies data-driven policy development and decision-making; a city that leverages the strengths we have, transforms our challenges to opportunities, and most importantly - a city that works for all Lagos residents.

With the delivery of the strategy, the task of implementation is now at hand and it is the responsibility of all. The implementation of the Lagos Resilience Strategy will enable us build a Greater Lagos; a Lagos that is safe, sustainable and inclusive; a Lagos which anticipates and plans for different shocks and stresses; a Lagos which survives, adapts and grows in spite of any challenges it might experience.

I applaud the efforts of the Lagos State Resilience Office (LASRO), our partners at the Rockefeller Foundation via the 100 Resilient Cities programme and the good people of Lagos, without whom this tremendous undertaking would not have been possible.

We express our availability to pursue further partnerships that ensure the successful implementation of the first urban resilience strategy in Nigeria.



Mr Babajide Sanwo-Olu
The Governor of Lagos State

LETTER FROM THE LAGOS STATE HEAD OF SERVICE

The Lagos Resilience Strategy represents an excellent opportunity for Lagos State to put building blocks in place for our future city. The strategy eloquently outlines a framework to build an efficient, enterprising and inclusive Lagos for residents today and the predicted population of the future.

The Lagos State Resilience Office will essentially work with Ministries, Departments and Agencies in the State Public Service including Local Authorities, Communities, Non-Governmental Organizations, Academia and Private Sector Institutions towards the delivery of its mandate. It is therefore critical that everyone is on the same page and the implementation of this strategy provides a platform for that harmonization.



Mr. Hakeem Muri-Okunola
Head of Service, Lagos State

The envisaged success in implementing the Lagos Resilience Strategy rests on the rank and file of the Lagos State Public Service. The time has therefore come for the Public Service to retool and reboot for the future. New technologies and the pace of emerging realities, including the change in public perceptions and taste, essentially demands new proactive initiatives and innovative approaches to problem solving, policy development, administration and governance. It also speaks to the need for a review of curricular in schools, upgrading of our public infrastructure and even a general attitudinal change and approach to service delivery as public servants.

To this end, innovation is non-negotiable and we must be prepared to continually acquire additional knowledge, skills and understanding of emerging realities, an appreciation of changing public taste and needs as well as the necessity for proficiency in the application of modern technologies in the discharge of our duties and responsibilities. It is only in this way that we are assured of our continued relevance to the Public Service and Lagos State of the future.

I should not end this message without expressing my heartfelt appreciation and gratitude first to the Governor of Lagos State, Mr Babajide Sanwo-Olu, for his clear leadership in the Lagos Resilience Strategy development process and demonstrated commitment to its implementation. Next, I wish to commend the leadership of the Lagos State Resilience Office and the Ministry of Economic Planning and Budget for its detailed and painstaking efforts at ensuring that the strategy is not only delivered in the best quality possible but also delivered on schedule. In addition, I wish to appreciate the 100 Resilient Cities' leadership, particularly Dana Omran and Nse Umoh-Esema, for their support and commitment to the Lagos State Resilience plans and also for the confidence demonstrated in Lagos State Government in this regard.

Finally, I wish to say that I remain confident that the template developed by the Lagos State Resilience Office would serve the 100 Resilient Cities' global objectives across Africa and other partner cities worldwide.

LETTER FROM THE CHIEF RESILIENCE OFFICER

Lagos is experiencing a time of great change: climate change, population growth, intense migration, rapid urbanization etc. These changes come with complex challenges some of which we have chosen to see as opportunities. The Lagos Resilience Strategy is a testament of our commitment to improve the quality of life of Lagos residents. The strategy is based on a shared vision towards a stronger, more resilient city that is able to adapt to the demands of the 21st century and beyond.

For Lagos, the commitment to urban resilience means bringing together systems, institutions, and people to co-create solutions that strengthen our capacity to prepare for and mitigate the effects of acute shocks and to become more responsive to everyday stresses that our city is confronted with.



Arc. Gbolahan Owodunni Oki
Chief Resilience Officer

Our work in developing the Lagos Resilience Strategy has been built around some guiding principles:

- build on existing structures and institutions;
- leverage innovation and technology;
- avoid duplication of effort and investment
- deliver tangible resilience outcomes to communities

We acknowledge the complex and interconnected challenges we face as a city and the importance of developing a strategy that addresses these in a holistic manner. Therefore, the pillars, goals and initiatives presented here are the results of collaborative engagement with stakeholders across various sectors – academia, business, government, non-governmental, local communities and citizens.

I specially thank the Lagos State Governor, Mr Babajide Sanwo-Olu, for the opportunity to serve Lagos through this process in my capacity as the Chief Resilience Officer. I salute the team spirit and passion of the Lagos State Resilience Office. I am also thankful to the staff and leadership of 100 Resilient Cities, particularly Nse Umoh-Esema who went beyond the call of duty to ensure the Lagos Resilience Strategy becomes a reality.

Achieving the vision of a more resilient Lagos requires work over the short, medium and long terms. The initiatives articulated in this strategy are affordable, scalable, replicable and measurable. They will support our communities' efforts to adapt to global environmental change, to survive no matter what shocks occur, and to confidently thrive, resulting in a Lagos that is truly efficient, inclusive and prosperous. We look forward to implementing the Strategy's, many critical, initiatives.

LETTER FROM 100RC

On behalf of 100 Resilience Cities (100RC), a program pioneered by the Rockefeller Foundation, I would like to congratulate Lagos State Governor, Mr. Babajide Sanwo-Olu, and the entire Lagos State Resilience Office on the release of the city's first ever Resilience Strategy, a major milestone for our partnership and global network of resilient cities.

The cultural and commercial epicentre of Nigeria, Lagos has grown into a formidable regional metropolis. It exemplifies the rapid growth and dynamism of African urbanization in the 21st Century and the ability of cities on the continent to turn their challenges into opportunities. Lagos is exposed to a variety of shocks such as flash flooding, storm surge and urban fire.

These shocks exacerbate the deep underlying stresses that plague the city such as, unemployment, traffic congestion, and inadequate social and physical infrastructure. These intersecting challenges have echoed throughout the narrative Lagos has crafted about its drive to survive, adapt and thrive.



Dana Omran
Managing Director - Africa

Working to build resilience in a city as large and complex as Lagos is certainly a daunting challenge. This strategy is a critical step forward because it sets out a clear vision for an innovative, inclusive and prosperous Lagos. Several projects highlight this ambition. For example, the actions around expanding the water transportation network and promoting sustainable waterfront tourism to improve livelihood in coastal communities demonstrate the city's commitment to innovate, develop and use its waterways responsibly while protecting its natural assets for future generations. Meanwhile, initiatives that focus on co-designing solutions to the city's waste and

emergency response challenges with its most poor and vulnerable communities signal a shift towards a more participatory and holistic approach to urban planning.

We are proud to have partnered in deepening the city's understanding of its vulnerabilities by applying a holistic, transversal lens to this interrogation. This strategy, however, is just the start; the urgent and important task lies ahead in implementing these actions. We and our global network look forward to supporting the city in bring this work to life.

EXECUTIVE SUMMARY



The Lagos Resilience Strategy is the State's first urban resilience strategy document and it articulates an integrated approach to addressing the shocks and stresses the city experiences or might experience.

From a small coastal village of fishermen and farmers during the pre-colonial times, Lagos has evolved into a spectacular urban metropolis. Today, Lagos is a melting pot where many Nigerians from diverse cultural backgrounds converge, all due to its leading position in innovation, governance and infrastructure. Currently, Lagos is globally recognized as the 4th largest economy in Africa. A city rich in opportunities and increasingly striving to provide the social safeguards that will optimize the resourcefulness of its people for a prosperous future.

Lagos' history is typified by unprecedented urbanization and high population growth which has outpaced sustainable urban planning, causing the city and the administrative structure to contend with increasingly complex challenges. Today, Lagos contends with disease outbreaks, coastal erosion and flooding, forced evictions, economic downturn, building collapse, high unemployment and underemployment, traffic congestion, inadequate physical and social infrastructure, inadequate transportation system, formal-informal economic contestation, erratic power supply, civil unrest, urban fires, and an inadequate health system.

Past and current administrations of Lagos State have attempted to tackle these complex challenges through several initiatives, schemes and actions. Some of these include the establishment of various agencies and programmes such as the Lagos Innovates, Lagos Rent-to-Own Housing Scheme, Lagos State Emergency

Management Agency, Lagos BRT Lite, Lekki Conservation Centre and Lagos State Employment Trust Fund. Furthermore, successive Lagos State Governments participated in many global networks focusing on addressing the various challenges of the State.

It was in line with this that Lagos State joined the 100 Resilient Cities Network, pioneered by the Rockefeller Foundation in 2016. The 100RC network is a global network dedicated to helping member cities build resilience against social, economic and physical challenges that are part of the 21st century.

The Lagos Resilience Strategy is the State's first urban resilience strategy document and it articulates an integrated approach to addressing the shocks and stresses the city experiences or might experience. Through this strategy, Lagos is committed to building a city that is efficient, innovative and inclusive. It presents a platform for planning for and tackling acute shocks and chronic stresses, thereby enabling the city to survive, adapt and grow in spite of its multifaceted challenges. The Lagos Resilience Strategy is a product of three years of collaborative efforts and actions including workshops, research, inclusive engagement and participatory processes with Civil Society, Academia, Private Sector, Government, and Community Groups from across Lagos. The content of this Strategy expresses the collective goals and vision for Lagos; and the initiatives proposed to be implemented to achieve them.



Eagles' Wings Statue at Tinubu Square Lagos Island

CHAPTER 2

LAGOS

HISTORY

AND

CONTEXT

INTRODUCTION



Tinubu Square, Lagos Island

Lagos is the largest metropolitan area and most urbanised State in Nigeria.

With an estimated 26 million people occupying 3,577 km², Lagos is a major economic, financial, and social centre, with a vibrant and growing private sector. Its prosperity has hinged on its coastal location, where it serves important port functions for the country and the West African region.

26
MILLION

3,577
SQ. KM.

Lagos is the melting pot for Nigerians of various cultural backgrounds. It is the nucleus of Nigeria’s urbanisation, a strong pull for youth in rural areas; a land of refuge and opportunity for the wise. It is a city leading in innovation, governance, and infrastructure, providing a bustling real estate market with formal and informal transactions.



4th economy
IN AFRICA

Lagos is globally recognised as the seventh largest economy in Africa, a state rich in opportunities and increasingly striving to provide the social safeguards that will optimise the resourcefulness of its people for a prosperous future.

1 Ayeni, B. (1979). Concepts and Technologies in Urban Analysis. London: Croom Helm. 372

Lagos State is blessed with a robust and rich culture, a great history, and human resources.



Sangbeto Masquerade Festival, Badagry



Elegushi beach, Lekki at night



Lagos Carnival

This is evident in the variety of festivals held all year round: from the traditional festivals such as the Eyo Masquerade of Lagos Island, Sangbeto Vigilante Raffa Masquerade of Badagry, the Easter Boat Regatta, and Fanti Carnivals, to contemporary concerts by Nigeria’s vast array of musical talent.

Lagos also features on the global arts, culture, and tourism map with such events as the Lagos Fashion Week and the Lagos Marathon. Lagos is the epicentre of Nollywood, Nigeria’s creative sector which is the third largest in the world, after Hollywood and Bollywood.



Cactus Restaurant, Victoria Island



Drumming at festival

Lagos Carnival



ECONOMY



ECONOMY

Lagos has a GDP of \$136.6 Billion (≈ 26% of Nigeria's GDP) which makes it the 4th largest city economy in Africa; it is expected to overtake Johannesburg as the second largest economy in the continent by 2035. The GDP of Lagos is equivalent to the 5th largest country GDP in Africa, of which the formal sector contributes 66% (\$90 Billion) and the informal sector 33% (\$46.6 Billion).

INDUSTRY

Over 60% of industrial investment flows into Lagos and approximately 90% of corporate businesses are headquartered here.



JOBS, EMPLOYMENT & WORK

Lagos is the hub of over 3.2 million MSMEs, mostly informal sector, which create 94.5% of new jobs and employs 67% of working adults. The unemployment rate dropped from 18.3% in 2017 to 14.6% in 2018, while the underemployment rate fell from 15.4% to 12.4% within the same period.



BUDGET

The 2020 State Budget stands at N1.168 Trillion (\$3.24 Billion); 75.9% of which will be internally generated and 15.8% expected from Federal Transfers.



LAGOS STATE DEVELOPMENT PLAN (LSDP 2012 - 2025)

In place since 2013, as the master road map for Lagos development management. 4 Pillars; i) Economic Development; ii) Infrastructure Development; iii) Security; iv) Environmental & Sustainable Development. It is domiciled in Ministry for Economic Planning & Budget (MEPB).



TAX/INTERNALLY GENERATED REVENUE (IGR)

Lagos State Government generates about N30 Billion monthly; however, records show that less than 700,000 persons, of the 10 million potential tax payers in the State, pay tax formally. Annual revenues grew from N10 Billion in 1999 to N313 Billion in 2016 owing to various successes recorded in tax reforms within this period.



NIGERIAN STOCK EXCHANGE & CORPORATE LAGOS

Lagos is home to the Nigerian Stock Exchange (NSE), which lists 169 companies with a market capitalization of over N13 Trillion (\$36 Billion). This is the second largest in Africa, after Johannesburg at N27 Trillion.



FINTECH & INNOVATION ECONOMY

Over 80% of ventures funding for the FinTech & Innovation Economy flow into Lagos (\$115million as at 2017).



MARKETS, COMMERCE & TRADING

There are over 450 local markets on public land and over 500 on private land. These markets are the life-blood of the local economy, sustaining millions of livelihoods.



ENTERTAINMENT & TOURISM

The sector contributes \$2.2 Billion annually to Lagos GDP.



INFRASTRUCTURE

ROAD NETWORK & TRANSPORT

Over 5 million vehicles ply the State's 16,000km road networks daily. The mode share of transport options are: 45% journeys by local 'Danfo' minibuses (≈50,000 on the road), 40% daily journeys by walking, 11% by private cars, 1% by official LAGBUS and 0.34 % journeys by water/ferry.



PORTS

The ports in Lagos handle about 75% of non-oil exports from Nigeria and 80% of imports. They received a total of 2,501 vessels with a Gross Registered Tonnage of 73,410,699 MT in 2017. These were discharged unto trucks that cause huge traffic congestion on the roads.



NEW INFRASTRUCTURE

The Oshodi Bus Interchange covers 70,000sqm and is expected to handle up to 1 million passenger journeys daily.



HOUSING, WATER & SANITATION

33% of population have access to adequate housing, 41% access to adequate sanitation, 33% access to pipe-borne water. Lagos supplies just 210m litres/Day, against a requirement for 794 m l/D.



POWER SUPPLY

40% of the population do not have access to grid power and 80% of those on the grid have less than 4 hours supply/Day. Lagos receives about 700MW from the total current National Grid supply of about 4GW and there is a supply gap of over 10GW to Lagos alone.



PEOPLE



POPULATION

Estimated to be 26 million as at 2018 (13% of Nigeria's population) and increasing by nearly 3,000 persons/day, it is the largest and fastest growing city in Africa. The population is projected to double by mid-century and reach 80million by 2100, becoming the world's largest city.

DEMOGRAPHICS

The State has a youthful population, with approximately 54% of its total population less than 25 years old. Over 95% of youths were literate as at 2010. In 2017, Infant Mortality rate was 49 per 1000 live births while Total Fertility Rate was 4 births per woman; these were lower than the national averages of 70 per live births and 6 births per woman respectively. Average national life expectancy however rose from 47 to 54 years between 2000 and 2016.



INTERNATIONAL COMMUNITY

There are 47 Consulates located in Lagos and 80% of the internationals in Nigeria, drawn from about 76 nationalities, reside here. The predominant nationalities represented in Lagos are the Chinese, Indian and Lebanese communities.



Geographical and Spatial Context

Lagos is a group of several large islands separated by creeks on a vast lagoon on the Bight of Benin, bordered by the Atlantic Ocean. The entire region lies within the coastal lowland of South Western Nigeria, generally less than 100 m above sea level.



Lagos has a landmass of approximately 3,577sqkm, of which waterbodies constitute 22%. It has a population density of approximately 4,907 people per square kilometer, however, this could be as high as 20,000 people per square kilometer in the densely populated areas of the metropolis.



Lagos is located along 180 km of Nigeria's 853km Atlantic Coastline (latitude 6°35' N, longitude 3°45' E) and sits on swampy mangrove and largely water-logged soils.

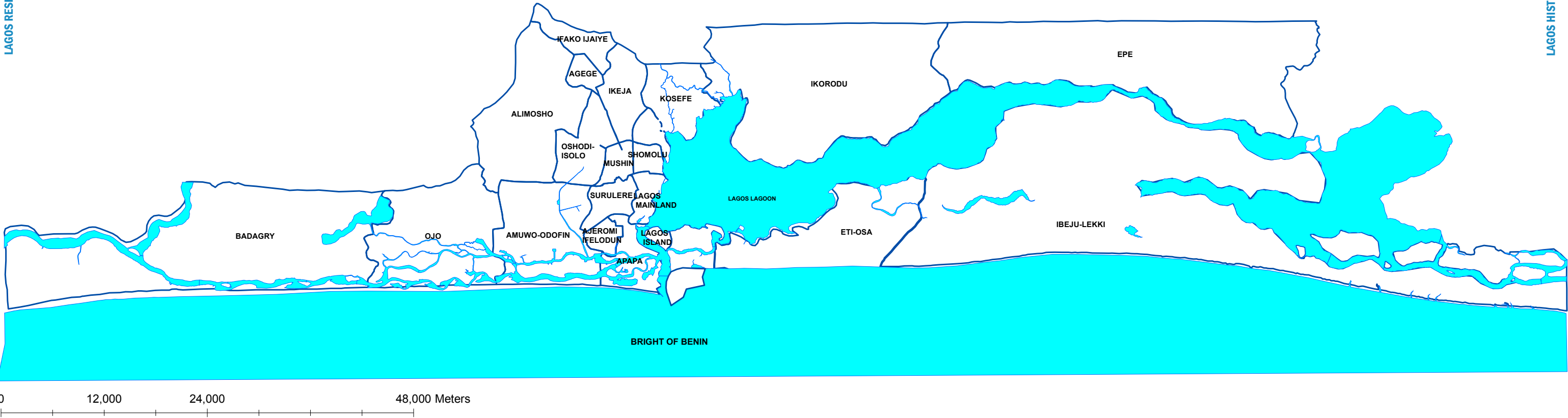


The topography of Lagos State slopes from north to south, flattening out at its lowest points in Victoria Island, Lagos Island, Ikoyi, and Apapa. The elevation of the built-up area of the city ranges between one metre in the coastal areas and about 75 metres above sea level at its northern fringes. The climate is tropical continental with rainfall throughout the year. Floods usually occur during the rainy season (April-October), aggravated by the poor surface drainage systems of the coastal lowlands. The natural vegetation is saltwater mangrove swamp forest, though this has been replaced by concrete and other impermeable surfaces in response to the rapid urbanization process.²



The economic, spatial, and political representation of Lagos has gone through a series of modifications over time and is still in development. Lagos State has five administrative divisions: Ikeja, Badagry, Ikorodu, Lagos Island, and Epe (IBILE), which are subdivided into 20 Local Government Areas (LGAs) and 37 Local Council Development Areas (LCDA), making a total of 57 Local Authorities.

MAP OF LAGOS



LAGOS RESILIENCE STRATEGY

LAGOS HISTORY AND CONTEXT

2. Olajide, O., & Lawanson, T. (2014). "Climate change and livelihood vulnerabilities of low-income coastal communities in Lagos, Nigeria." *International Journal of Urban Sustainable Development*, 6 (1), 42-51.



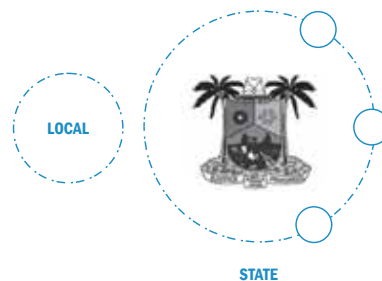
Johnson Jakande Tinubu (JJT) Park, Alausa

POLITICAL STRUCTURE

The administrative structure of Lagos State consists of three arms of government, similar to other States in Nigeria.

LOCAL GOVERNMENT

This consists of the Executive (council chairman and appointed departmental heads), Legislative Council (elected councillors representing administrative wards) and Judiciary (magistrates' court). These branches are autonomous and have statutory responsibilities, as well as budgetary allocations under the various enabling laws of the State.



EXECUTIVE

The Lagos State Executive is headed by the Governor, who is elected alongside a Deputy Governor. The State Executive is responsible for policy formulation and implementation, in addition to the day to day administration of the State. State Commissioners are appointed to oversee Ministries and affiliated Departments and Agencies.³

LEGISLATURE

The Lagos State Legislature is the arm of the State Government charged with making laws that govern the State. It comprises elected members from the 40 constituencies of the State, led by an elected Speaker.

JUDICIARY

The judiciary is headed by a chief Judge, who is appointed by the State Governor, on the recommendation of the National Judicial Council, subject to confirmation by the State House of Assembly. The Lagos State Judiciary is subdivided into criminal, land matters, probate and family affairs, commercial and general civil divisions, as well as the special offences and sexual offences courts.

³ State Ministries in Lagos: Finance; Economic Planning and Budget; Waterfront Infrastructure Development; Commerce, Industry, and Cooperatives; Tourism Arts and Culture; Education; Science and Technology; Youth and Social Development; Environment; Women's Affairs and Poverty Alleviation; Health; Housing; Local Government and Community Affairs; Justice; Works and Infrastructure; Establishment, Training and Pensions; Physical Planning and Urban Development; Energy and Mineral Resources; Special Duties and Intergovernmental Relations; Information and Strategy; Transportation; Home Affairs; Wealth Creation and Employment; and Agriculture.

PLANS AND POLICIES GOVERNING URBAN DEVELOPMENT

SUSTAINABLE DEVELOPMENT GOALS (SDGs)

The Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by all United Nations Member States in 2015 as a universal call to action to end poverty, protect the planet, and ensure that all people enjoy peace and prosperity by 2030.

The 17 SDGs are integrated and self-reinforcing in that action in one area will affect outcomes in others and that development must balance social, economic and environmental sustainability.⁴

Through the pledge to "Leave No One Behind," countries have committed to fast-track progress for those furthest behind. The SDGs are thus designed to bring the world to several life-changing "zeroes" encompassing poverty, hunger, AIDS, and discrimination against women and girls.

Achieving the SDGs hinges on the collaboration of government, business, community, and civil society actors. Lagos State Government is committed to achieving the SDGs, with linkages to all government-led and government-supported programmes and policies; a dedicated office has been established to monitor this process.

⁴ <https://www.undp.org/content/undp/en/home/sustainable-development-goals.html>.



LAGOS STATE DEVELOPMENT PLAN 2012-2025



The Lagos State Development Plan (LSDP 2012-2025) was drafted to chart an economic development and overall strategy for the State based on four pillars: Economic Development, Infrastructure Development, Social Development and Security, and Environmental and Sustainable Development. It is the bedrock of all Lagos State projects and programmes.

The plan is a dynamic, multi-sectoral, joint strategy for the development of Lagos. It involves the public sector (government), private sector (business), and the general public (community and civil society).

Importantly, the Lagos State Development Plan captures the aspiration of Lagos. The Vision Statement outlines how Lagos sees itself in the future, in the context of Africa and the rest of the world:

By 2025, Lagos will be Africa's Model Megacity and Global, Economic, and Financial Hub that is Safe, Secure, Functional, and Productive.

The mission of the LSDP document as stated is to "achieve poverty eradication and sustainable economic growth through infrastructure renewal and development."

THEMES

The Lagos State Government has identified six pillars of development, for which there are prioritised actions. These pillars, known as “THEMES,” resonate with the SDGs and the most urgent challenges of Lagos State.⁵ The focal areas of the pillars are as listed below:



TRAFFIC MANAGEMENT AND TRANSPORTATION

- Public transport system
- Rail infrastructure
- Water transport
- Expand and improve bus network



MAKING LAGOS A 21ST CENTURY ECONOMY

- Conducive business environment
- Citizen participation
- Opportunities for the workforce for job and wealth creation
- Youth development
- Reposition Lagos as an ultimate investment destination
- Support for key economic sectors
- Energy efficiency



HEALTH AND ENVIRONMENT

- Health and wellbeing
- Water
- Waste management
- Air pollution
- Climate change



ENTERTAINMENT AND TOURISM

- Tourism and culture
- Creative arts
- Sports



EDUCATION AND TECHNOLOGY

- Basic education
- Technology
- e-governance



SECURITY AND GOVERNANCE

- Community surveillance and intelligence gathering
- CCTV coverage
- Partner with private sector to co-locate surveillance cameras and power streetlights
- Civic engagement and community participation
- Integrate all emergency handling agencies



LAGOS: A JOURNEY THROUGH TIME

Lagos has withstood the test of time. Accordingly, its past had to be reflected and integrated into the strategy development process, which opened up a path to envision the future. This strategy reflects the genesis of Lagos; the acts of all stakeholders driving the city’s development; solutions to address the various shocks and stresses of the city; and the revelation – a vision, including goals and actions for a more resilient Lagos.

LAGOS: GENESIS

From a small fishing and farming village, Lagos has evolved into the largest African urban conurbation: Nigeria’s centre for commerce, industry, and innovation. Lagos is a port city that originated on islands separated by creeks fringing the southwest mouth of the Lagos Lagoon, protected from the Atlantic Ocean by long sand spits (beaches) which stretch up to 100 km east and west. Lagos has moved through various trajectories in its development, governance structure, and political administration, based on the varied economic and political roles it has played in the history and political development of Nigeria.

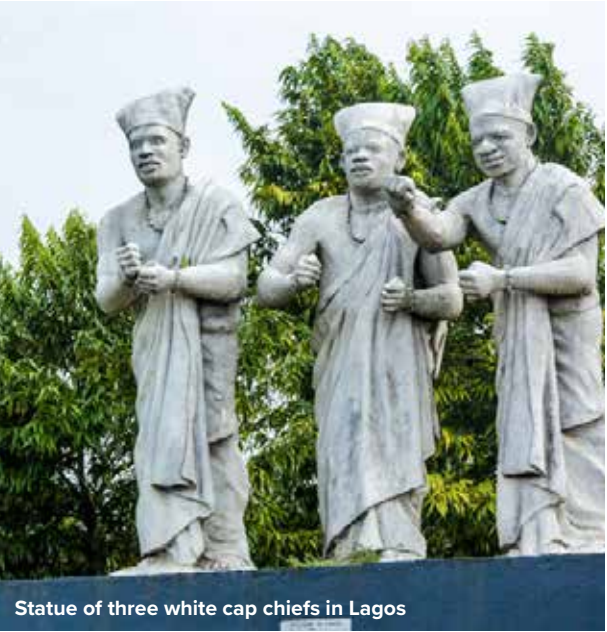
After it was ceded to Britain in 1861, the city was administered as a separate city-state and operated as a colony until its merger with the former Western Nigeria in 1951. In 1953, a Federal Territory, which included Lagos, was carved out of Western Nigeria. In 1967, following the outbreak of civil war in Nigeria, the country was split into 12 states and Lagos State became the nation’s capital, a status it retained until 1991 when the Federal Capital was relocated to Abuja.

Lagos is a city of over 26 million people made up of indigenes, Nigerians from all states of the Federation, Africans from the ECOWAS region and beyond, as well as other nationalities including Americans, British, Indians, Chinese, Greeks, Syrians, Lebanese, and Japanese. Reflecting on this cosmopolitan history, Lagos has leveraged the advantage of its many nationalities to create integrated systems to collectively tackle the many challenges of the city and attract tourists from far and near.



Canoe Statue; depicting Lagos coastal identity

Modern-day Lagos was founded in the thirteenth century. It was later called Eko. The Portuguese explorer Ruy de Sequeira, who visited the area in 1472, named the area around the city “Lago de Curamo”; the present name Lagos means “lakes” in Portuguese.



Statue of three white cap chiefs in Lagos

LAGOS: EVOLUTION

Building the resilience capacity of Lagos starts with a well-established, comprehensive vision that is easily understood, and that aligns with the needs and desires of all stakeholders in the city. The pillars, goals, and initiatives articulated in this Resilience Strategy chart a course for achieving the vision of a more Resilient Lagos at community and city scales, in the short, medium, and long term. They also align with the Sustainable Development Goals and the State’s overarching development plan.

LAGOS: METAMORPHOSIS

The city has grown immensely over the many decades and is faced with a myriad of resilience challenges that compel it to synergise its efforts, to tackle these issues in an inclusive manner, by involving government, academic, private sector, civic society, and community stakeholder groups. Coming together in this way helps the city further identify and deliberate on challenges and future changes, as well as implement complementary initiatives that can address multi-sectoral challenges. Lagos is a dynamic city and significant future shifts in the following areas are anticipated: population growth, infrastructure provision, and environmental management approaches, as well as economic diversification into entertainment, tourism, and the knowledge economy. However, it is acknowledged that the city is a work-in-progress and it needs to continuously redefine its priorities and review approaches and methodologies to address current and future changes.



A view of Waterfront, Victoria Island

A LAGOS HISTORY OF SHOCKS

LAGOS RESILIENCE STRATEGY



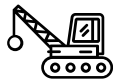
JULY 1924
The bubonic plague hit Lagos in July 1924 due to the trans-border and intraregional flows, inadequate infrastructure, and poor sanitation. There was a continuous outbreak between 1924 and 1931, with a total of 1,947 cases and 1,813 deaths respectively.⁶



JULY 1981
In the late 1970s the oil price fell, depressing public expenditure and leading to the crumbling of the country's economy by 1981. In 1983, oil prices plunged again to 45% of the 1980 level.⁸



1955
In 1955, the Lagos Executive Development Board spearheaded the forced eviction of over 20,000 people from Lagos Island and Ikoyi.⁷ The evictees were relocated to Surulere, paving the way for developments in Lagos Island and Ikoyi.



JULY 1990
Maroko was a community with an estimated 10,000 homes and 300,000 residents. On 14th July 1990, soldiers and bulldozers reduced the community to rubble. It remains one of the largest forced evictions in the history of Nigeria.¹⁰

1924

1955

1969

1981

1983

1990

2002

2012



NOVEMBER 1969
A Nigerian Airways flight from London to Lagos crashed near Lagos, killing 87 people. This was the first major aviation disaster in Nigeria after independence.



JANUARY 2002
On the evening of 27 January 2002, sudden explosions occurred at the Ikeja Military Cantonment. These were due to the accidental discharge of high calibre bombs which were not stored appropriately. The commotion after the blasts led to the deaths of over 1,000 people.



JUNE 2012
A Lagos-bound Dana Air flight from Abuja crashed into a two-storey building in Ishaga, Lagos, killing all 153 passengers. The aircraft exploded on impact and destroyed the building.



JULY 2012
Lagos experienced heavy rainfall leading to floods and gridlock on major roads. Stranded commuters had to pay increased fares to bus drivers willing to drive through the flooded streets.



JULY 2014
The index case of Ebola virus in Nigeria was a Liberian-American, Patrick Sawyer, who flew from Liberia to Lagos on 20 July 2014 and died five days later. WHO officials declared Nigeria Ebola-free on 20 October 2014. 16 cases and 6 deaths were reported during the outbreak. Lagos's quick response, including intense and rapid contact tracing, surveillance, and isolation of all contacts, was particularly important in controlling and limiting the outbreak.



JULY 2017
Torrential rainfall in Lagos caused the deaths of at least 20 people. The incident was attributed to the indiscriminate dumping of refuse in drainage channels and the reclamation of wetlands for developments along the Lagosian coastline.



AUGUST 2017
The Nigeria Centre for Disease Control was notified of an outbreak of Lassa fever in Lagos State on 4 August 2017. By 9 August 2017, the State had reported five confirmed cases and 2 deaths. A total of 9 confirmed cases were reported during the outbreak.

2012

2014

2016

2017

2018

2019



SEPTEMBER 2014
A guesthouse attached to the Synagogue Church of All Nations in the Ikotun-Egbe area of Lagos State collapsed in 2014. The accident led to the deaths of 86 people, with 131 injured.¹¹



MARCH 2016
A five-storey building under construction at Lekki Gardens Horizon 1 collapsed, killing 34 people and injuring several others.¹² Lagos State Emergency Management Agency (LASEMA) and other responders, including the State Fire Service, State Ambulance Service, Red Cross, Nigeria Emergency Management Agency, Nigeria Police, Federal Road Safety Corps and the Nigeria Security and Civil Defence Corps performed search and rescue operations.



JUNE 2018
On the Lagos-Ibadan Expressway, an oil tanker truck exploded during rush hour, setting 57 cars ablaze, killing eight people, and injuring others.¹³



MARCH 2019
A three-storey building on 63 Massey Street in the Ita-Faaji area of Lagos Island collapsed, claiming the lives of 20 people, 16 of whom were children. A five-man committee was appointed to conduct a thorough investigation of this incident and to recommend how to prevent future occurrences of building collapse in Lagos State.¹⁴

6 Falaye, O. A. 2017. "Environmental Change, Sanitation and Bubonic Plague in Lagos, 1924-31" in International Review of Environmental History, Vol. 3, Issue 2, 2017, by ANU Press, Australian National University, Canberra, Australia.

7 Omoniyi, G. O. (2017). "Urbanization, Land Rights and Development: A Case Study of Waterfront Communities in Lagos, Nigeria." Master's thesis. 1066.

8 Olowu, D., Laleye, M. and Ayeni, V. "The Nigerian Economy and Economic Policy Responses since 1980," Research for Impact of the Economic Crisis on the Public Administration System, African Association for Public Administration and Management. <http://unpan1.un.org/intradoc/groups/public/documents/AAPAM/UNPAN026544.pdf>.

9 Lawal, S. (2019). "Ghana Must Go: The ugly history of Africa's most famous bag." Mail & Guardian, <http://atavist.mg.co.za/ghana-must-go-the-ugly-history-of-africas-most-famous-bag>. Akhigbe, N. (2015). "Maroko Evictees Mark 25 Years of July '90 Massacre Over Lekki -CITYVOICE." <http://saharareporters.com/2015/11/11/maroko-etictees-mark-25-years-july-%E2%80%9890-massacre-over-lekki-cityvoice>.

11 LASEMA report.
12 Ejembi, S. (2016). 10 tragic building collapses in Nigeria. <https://punchng.com/10-tragic-building-collapses-in-nigeria/>.

13 Busari, S. and Murphy, P. P. and Adebayo, B. (2018). "Lagos fire kills at least 9 and sets dozens of cars ablaze after oil tanker explosion." <https://edition.cnn.com/2018/06/28/africa/oil-tanker-explosion-lagos-nigeria/index.html>. LASEMA report.

14 Olowoapejo, M. (2019). "Ita-faaji collapsed building: Two weeks after, Panel fails to submit report." <https://www.vanguardngr.com/2019/04/ita-faaji-collapsed-building-two-weeks-after-panel-fails-to-submit-report/>.

LAGOS HISTORY AND CONTEXT



CHAPTER 3

THE RESILIENT LAGOS JOURNEY

ACTIVATING CITY RESILIENCE

100RC defines city resilience as the “capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow, no matter what kinds of chronic stresses and acute shocks they experience.”

Lagos, Nigeria’s most populous city and its commercial-industrial epicentre – has encountered numerous socio-economic and environmental challenges due to its growth over time. Current challenges represent various aspects of vulnerability that require serious measures to counteract. As a people, Lagos residents are instinctively and individually resilient, coping innovatively with everyday challenges like overcoming energy, water and housing shortages, flooding, and economic downturn. In the process, various categories of entrepreneurship have grown up ensuring that the city holds its place as the commercial hub of Nigeria, and indeed Africa. However, there is still much to be done.

Moving forward, there is an urgent need to articulate these challenges and develop an integrated approach that addresses them in a way that leaves the city safer, more inclusive, more resilient, and more sustainable. The Lagos Resilience Strategy offers this opportunity by articulating an approach that seeks to embed systemic and institutional resilience. 100RC defines city resilience as the “capacity of individuals, communities, institutions, businesses, and systems

within a city to survive, adapt, and grow, no matter what kinds of chronic stresses and acute shocks they experience.” This explains not only the current and future challenges, but also addresses the nature of these challenges and, most importantly, the actors they will impact and be impacted by.

In activating city resilience, the physical infrastructure, social networks, economic fabric, and most importantly, the governance structures (both constitutional and informal) must work together to identify, prevent, and respond to vulnerabilities in a timely and effective manner.

To achieve this, the Lagos State Resilience Office (LASRO) inventoried activities undertaken by the State Government’s Ministries, Departments, and Agencies (MDAs) against the perceptions of relevant stakeholders within the State. The outcomes are captured in the Lagos Resilience Strategy as initiatives that are functional, feasible, and inclusive. The City Resilience Framework was used to articulate a set of initiatives that speak directly to Lagos’ wishes, aspirations, and resilience needs.

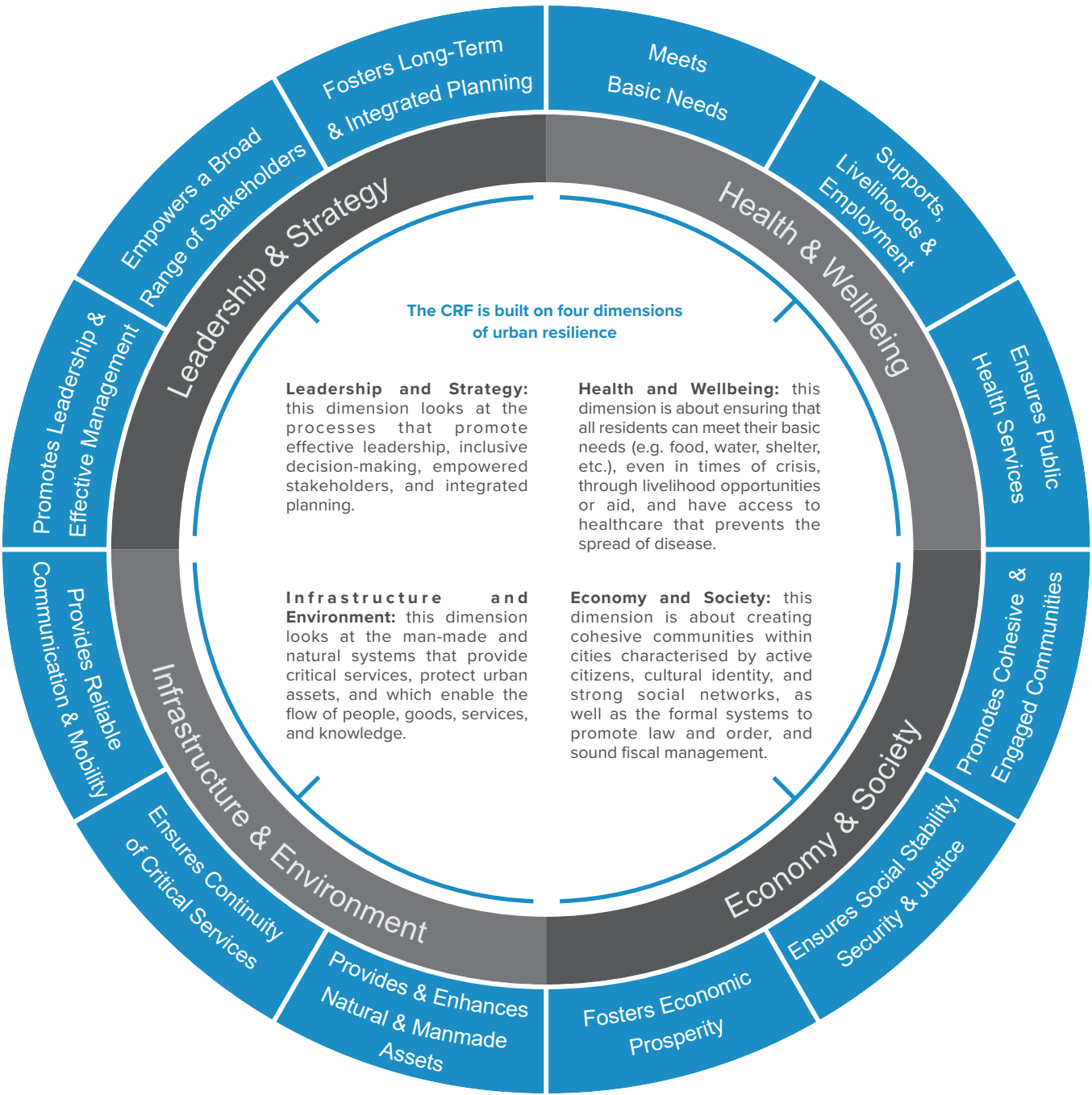


Commercial Motor Park, Ojuelegba

CITY RESILIENCE FRAMEWORK

The City Resilience Framework (CRF) provides a lens to understand the complexity of a city and the drivers that contribute to its resilience.

Cities can assess the extent of their resilience using the CRF and identify critical areas for improvements, interdependencies between systems, and potential actions to further the city’s resilience.



100RC NETWORK CONNECTIONS



THE HAGUE
Building a lively start-up economy that offers an attractive environment for the innovative and dynamic entrepreneurs of the future.



ROTTERDAM
Developing a twenty-first-century skills curriculum that provides a method for embedding resilience into key city curricula.



SURAT
Developing urban design and landscape interventions for increased permeability, reducing water runoff, and facilitating groundwater recharge.



CHRISTCHURCH
Developing community events and local information resources to help new residents build connections with people in their immediate communities.



MELBOURNE
Developing an initiative to extend and link existing urban greening, reforestation and nature initiatives across Melbourne, to improve wellbeing and reduce exposure to hazards such as heatwaves and flooding.




CAPE TOWN
Developing an initiative to create a live database of referral networks for at-risk individuals, victims of crime, and Capetonians living with substance abuse or mental illness.



ACCRA
Developing initiatives to upgrade marketplace infrastructure to ensure safety, security, and adequate services.



DAKAR
Intends to create a competition to spur innovative solutions for drainage management in Dakar.



BOULDER
Conducting a food security assessment to ensure the resilience of the local food system.

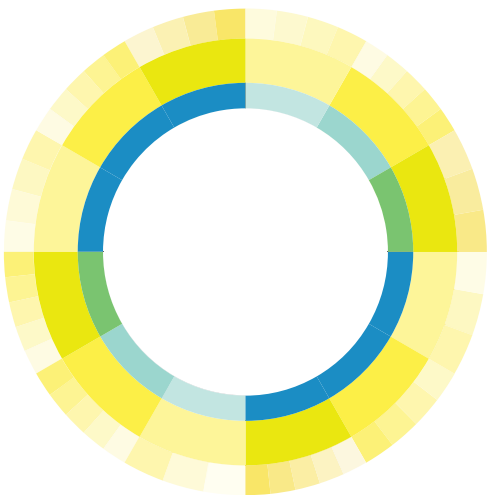


MEXICO
Developing initiatives to integrate the majority of the population without regular and continuous water service to the water supply system.

LAGOS RESILIENCE STRATEGY

THE RESILIENT LAGOS JOURNEY

RESILIENCE LENS



The resilience lens is a diagnostic and decision-making tool that is used to evaluate and prioritise options, make decisions and trade-offs about initiative design, and ensure maximum resilience benefits in identified initiatives.

The Resilience Lens has been applied to the Lagos Resilience Journey through the following considerations:

- 1 Approach the risks and vulnerabilities of Lagos in an integrated and comprehensive way
- 2 Consider impacts of multiple shocks and stresses in Lagos
- 3 Have short, medium, and long-term direct and indirect benefits for Lagos and its residents
- 4 Incorporate the relevant qualities of resilience
- 5 Aim for equitable outcomes among all socio-economic groups in Lagos
- 6 Recognise and leverage the capacity and abilities of different stakeholders
- 7 Have transformational potential beyond the boundaries of Lagos

RESILIENCE QUALITIES



INTEGRATED

Systems work together

Integration and alignment between city systems promotes consistency in decision-making and ensures that all investments are mutually supportive to a common outcome. Integration is evident within and between resilient systems, and across different scales of their operations. Exchange of information between systems enables them to function collectively and respond rapidly through shorter feedback loops throughout the city.



REFLECTIVE

Ability to learn

Reflective systems are accepting of the inherent and ever-increasing uncertainty and change in today's world. They have mechanisms to continuously evolve and will modify standards or norms based on emerging evidence, rather than seeking permanent solutions based on the status quo.



FLEXIBLE

Has alternative strategies

Flexibility implies that systems can change, evolve, and adapt in response to changing circumstances. This may favour decentralised and modular approaches to infrastructure or ecosystem management. Flexibility can be achieved through the introduction of new knowledge and technologies as needed. It also means considering and incorporating indigenous or traditional knowledge and practices in new ways.



INCLUSIVE

Broad consultation and communication

An emphasis on the importance of broad consultation and engagement of communities, including the most vulnerable groups. Addressing the shocks or stresses faced by one sector, location, or community in isolation is anathema to the notion of resilience. An inclusive approach contributes to a sense of shared ownership or a joint vision to build city resilience.



ROBUST

Limits system failure or puts buffers in the system

Robust systems include well-conceived, well-constructed, and well-managed physical assets, so that they can withstand the impacts of hazard events without significant damage or loss of function. Robust design anticipates potential failures in systems, making provision to ensure failure is predictable, safe, and not disproportionate to the cause. Actively avoids over-reliance on a single asset, cascading failure, and design thresholds that might lead to catastrophic collapse if exceeded.



RESOURCEFUL

Can easily repurpose resources

People and institutions are able to rapidly find different ways to achieve their goals or meet their needs during a shock or when under stress. This may include investing in capacity to anticipate future conditions, set priorities, and respond, for example by mobilising and coordinating wider human, financial, and physical resources. Resourcefulness is instrumental to a city's ability to restore functionality of critical systems, potentially under severely constrained conditions.



REDUNDANT


Has backup capacity

Redundancy refers to spare capacity purposely created within systems so that they can accommodate disruption, extreme pressures, or surges in demand. It includes diversity: the presence of multiple ways to achieve a given need or fulfil a particular function. Redundancies should be intentional, cost-effective, and prioritised at a city-wide scale, and should not be an externality of inefficient design.

SHOCKS AND STRESSES


The following are the dominant shocks and stresses affecting Lagos. They are not listed in order of severity or magnitude and are based on findings from stakeholder engagements.

PRIORITISED SHOCKS AFFECTING LAGOS' RESILIENCE




ECONOMIC DOWNTURN

Lagos was significantly affected by Nigeria's economic recession in 2014. Lagos is the hub for over 3.2 million Micro Small Medium Enterprises (MSMEs). Its unemployment rate dropped from 18.3% in 2017 to 14.6% in 2018, while the underemployment rate fell from 15.4% to 12.4% within the same period. However, macro-economic factors such as economic recession continually threaten the livelihood of Lagos residents, putting families at risk of poverty and food insecurity, and denying them access to basic services such as healthcare, housing, and education.




RIOT AND CIVIL UNREST

The Lagos Metropolis has experienced periodic outbreaks of security breaches. Civil unrest has resulted from clashes among local street gangs, increases in the pump price of Premium Motor Spirit (PMS), forced evictions, political grievances, and "jungle justice" in response to criminal acts.




FLOODING/ SEVERE STORMS

Due to heavy rainfall and inadequate storm water drainage systems, there has been a recurrent flooding problem in the city. The problem is magnified by improper waste disposal into open drainage. Moreover, there are limited mechanisms for predicting and managing the occurrence of flash flooding at the community level, with consequences for agricultural outputs. Many past efforts have tended towards engineering solutions, which have not yielded the desired results.




DISEASE OUTBREAK

There have been periodic outbreaks of diseases across the State in the recent past. These include the Ebola outbreak in 2014, Lassa fever, cholera, measles, etc. The State's capacity to predict, monitor, and respond effectively to this challenge has been severely curtailed due to a paper-based disease notification system, rising population and unregulated urban growth, especially in the peri-urban areas of the State.




FORCED EVICTION

Land ownership conflicts between land-owning families and settlers, land-use planning inefficiencies, and the development needs of the government and slum proliferation have all contributed to forced evictions in some parts of Lagos in recent years.




MAJOR ROAD ACCIDENTS

Road accidents have been a major problem in Lagos for several decades. The Federal Road Safety Corps (FRSC), Lagos State Sector Command, says it recorded 419 road traffic crashes in the first three quarters of 2019, with 84 fatalities. These incidents usually arise as a result of bad road conditions, speed violations, and driver recklessness.



STORM SURGE

Climate change and the city's location below sea level increase the flood vulnerability of Lagos. Most of the barrier islands and long sand spits are shrinking, due to coastal erosion driven by natural ocean surges and other morphological processes worsened by the rise in sea levels and human actions. The vulnerability of Lagos' coastline to sea surges is exacerbated by its low-lying location. While actions have been taken to construct groynes and other drainage infrastructure along some sections of coastline, these have not mitigated the threats substantially.



BUILDING COLLAPSE


Building collapse has become a common occurrence in recent years, often leading to loss of life amongst construction workers and occupants. Aside from topographical challenges, some of the collapses are due to use of sub-standard construction materials, weak construction supervision, and poor enforcement by relevant town planning agencies. There is growing consciousness of the need to prevent these occurrences with the establishment of Investigative Panels and Committees, and the institution of stiffer penalties for offenders.



URBAN FIRES


Urban fires are common in markets around the city and are usually due to poor fire prevention, lack of spatial orderliness, and negligence. Fires caused by fuel tanker explosions and pipeline vandalism have also become reoccurring incidents. The resolution time for some of these incidents is sometimes constrained by a combination of traffic, bad roads, and poor crowd control resulting in significant damage to properties and loss of life in some instances.

PRIORITISED STRESSES AFFECTING LAGOS' RESILIENCE




UNEMPLOYMENT AND UNDEREMPLOYMENT

Lagos has a youthful population, with approximately 54% of its total population under 25 years old. Despite a high literacy rate of 85% (Lagos State Strategic Development Plan, 2013) and the State's status as Nigeria's economic and commercial hub, unemployment and underemployment are urgent challenges that need to be addressed as young people are particularly affected. In 2018, the unemployment and underemployment rates were 14.6% and 12.4% respectively.




FORMAL-INFORMAL ECONOMIC CONTESTATION

Lagos is a hub for over 3.2 million MSMEs, mostly in the informal sector that supplies 94.5% of new jobs and employs 67% of working adults in the city. Conflict over access to urban spaces in Lagos is common between the formal and informal sectors as they respond to gaps in formal urban service delivery. Contestations are visible in many sectors including market, housing, transportation, and health, leading to food insecurity, forced eviction, insecurity, homelessness, and slum proliferation, as well as challenges in accessing safe, efficient, and reliable transport and health services.




INADEQUATE PHYSICAL AND SOCIAL INFRASTRUCTURE

The State has encountered the challenges caused by inadequate infrastructure, primarily due to the high population growth rate and insufficient investment. These challenges include basic services such as shelter, water, sanitation, security, health, and education facilities, as well as poor roads and drainage. The strain on available infrastructure has resulted in unwholesome practices such as open defecation, improper dumping of waste, proliferation of boreholes, and violation of traffic rules, which have attendant consequences on health, safety, security, education, and residents' quality of life.




TRAFFIC CONGESTION

Lagos faces significant traffic congestion on a daily basis. Causes range from road network access to availability of affordable mass transport solutions, and reflect the employment challenges in the State. People are commuting long distances for economic opportunities in distant neighbourhoods. In addition, only 40% of cars in Nigeria are registered in Lagos. An average adult spends about 30 hours per week commuting. There have been cases of traffic-enabled armed robberies across the city. The Lagos State Government has taken steps to address the inadequacy of the road system, marshalling road traffic control agencies and undertaking road expansion projects.




OVERPOPULATION/ OVERCROWDING

The current population growth rate of 3.2% per annum, due to natural increase and migration, is fast becoming a significant burden on the wellbeing of residents. Available infrastructure is largely inadequate to serve the current and future needs of residents, resulting in poverty, sanitation, infrastructure, and pollution challenges across the city. The large-scale conversion of agricultural land to accommodate the growing population also makes the State vulnerable to food insecurity.




INADEQUATE PUBLIC TRANSPORTATION

Rapid growth has come with a myriad of urban transport challenges. To get around, most residents rely on the thousands of yellow minibuses that ply the streets (locally referred to as *danfos*), as well as a growing supply of three-wheelers (*keke marwa*) and motorbikes (*okadas*). There are also cheaper and faster alternatives on the State's Bus Rapid Transport (BRT) system but these do not cover all routes in the city. In addition, infrastructure that promotes walking and cycling are yet to be fully incorporated into the Lagos transportation system. Public spaces dedicated to pedestrian walkway and building setbacks are often taken over by street traders and by on-street parking.



ERRATIC POWER SUPPLY

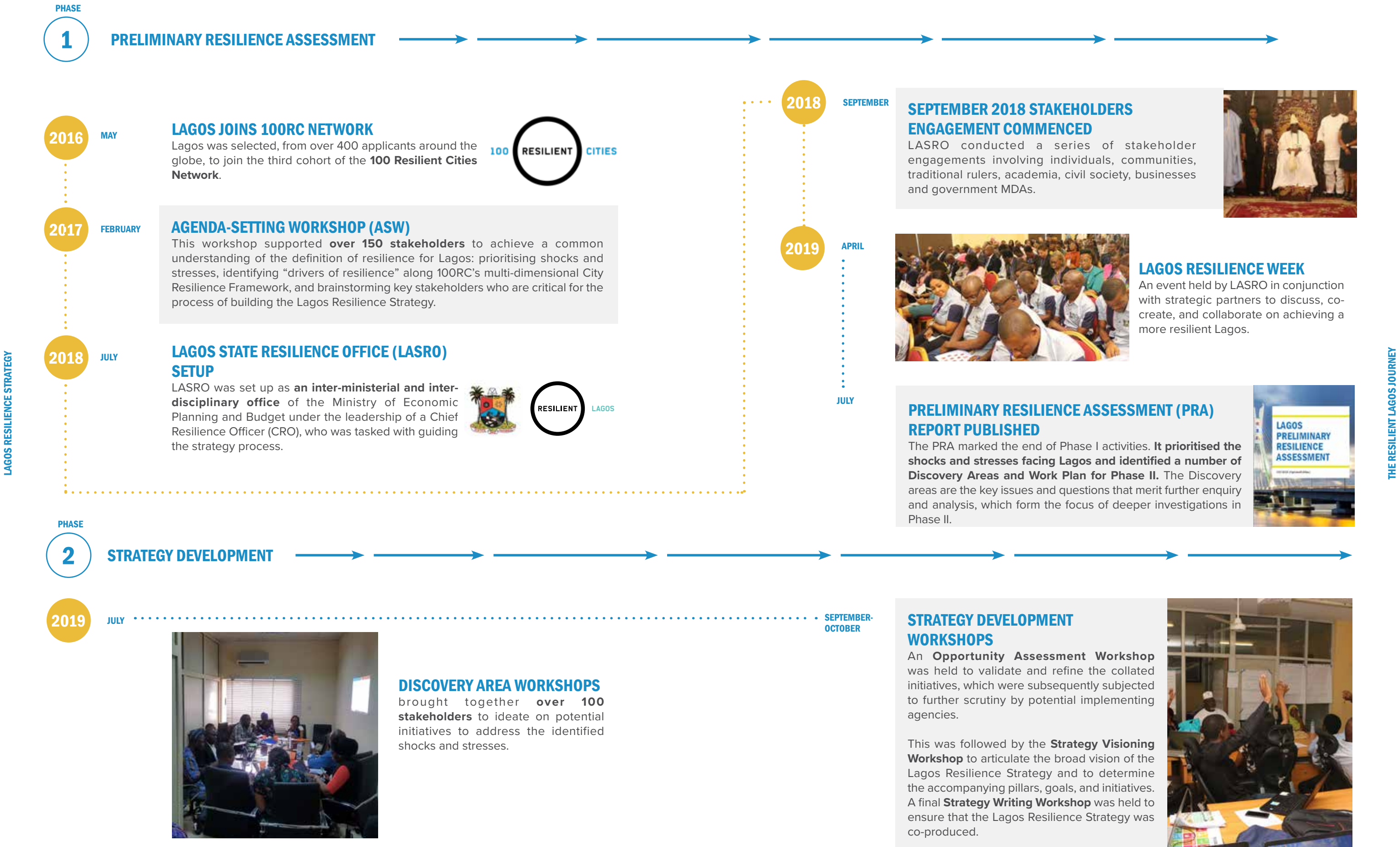
The total current National Grid supply is about 4GW, and there is a supply gap of over 10GW in Lagos alone for economic and social activities. More than 40% of the population does not have access to grid power and 80% of those on the grid have less than eight hours' supply per day. City residents are adapting to this stress by investing in individual (fossil fuel) power generating units and battery-powered inverters. With extensive maintenance costs and environmental impacts, these approaches are not sustainable. The State Government is investing in embedded, captive, and renewable power solutions, but significant resilience gains are yet to be realised for all residents.



INADEQUATE HEALTH SYSTEM

Due to the huge population and metropolitan nature of Lagos, the city is vulnerable to the spread of communicable diseases, mainly due to the prevalence of slums, poor drainage, and unhygienic waste management practices of many residents, as well as inadequate water and sanitation infrastructure. There are also increasing concerns about the prevalence of non-communicable diseases, such as hypertension induced by urban stress and lifestyle factors, including lack of exercise, poor dietary habits, etc. The primary health centres are insufficient to address the health needs of the population due to significant clustering in urban areas, while secondary and tertiary health facilities across the State face some structural challenges. The weak health insurance system that targets only formal sector workers makes access to quality health care expensive for many low-income residents.

THE LAGOS RESILIENCE TIMELINE





CHAPTER 4

ENVISIONING A RESILIENT LAGOS

VISION

Resilient Lagos is an innovative, inclusive, and prosperous city that leverages the appropriate governance and infrastructure mechanisms to empower its people to thrive, adapt, and grow sustainably.

RESILIENT LAGOS

The Lagos Resilience Strategy creates an opportunity for government, civic society, private sector, academia, and residents to respond to the prioritised shocks and stresses that Lagos faces through a cohesive, multi-level, and cross-functional approach.



3 pillars



10 goals



31 initiatives

The 3 pillars, 10 goals, and 31 initiatives and sub-actions in the Resilience Strategy seek to ensure a more innovative, inclusive, and prosperous Lagos, focusing on the parts of the city that are most vulnerable to various shocks and stresses.

For instance, the core of the city is most vulnerable to traffic congestion, while coastal communities are vulnerable to flooding and erosion. Moreover, there are varying levels of adaptive capacity for these shocks and stresses: communities protected by groynes are better able to withstand storms, while some residents of coastal areas are able to use informally operated, “locally fabricated” canoes

as an alternative means of mobility. The Resilience Strategy recognises the inherent resilience of citizens and communities and seeks to scale this in a systematic and structured manner.

The Strategy drives efficiency, innovation, and inclusion in the city by changing the status quo so that the continued development of Lagos transcends traditional concepts and adopts a cross-sectoral planning and implementation approach.

The vision for a Resilient Lagos was developed through a comprehensive process involving the ideas and perspectives of various stakeholders, including academia, civil society, government, local communities, and business organisations. The realisation of this vision will require the continued partnership of all of these stakeholders.



Peak Period Traffic at Ojota



Liverpool Jetty, Apapa

STRATEGY PRINCIPLES
AND HIERARCHY

The Lagos Resilience Strategy stands on three pillars and ten goals.

There are 31 associated initiatives to achieve these goals and move Lagos to a more resilient future.

PILLARS ▼	GOALS ▼	INITIATIVES ▼
1 EFFICIENT CITY	DEVELOP A ROBUST, MULTIMODAL, AND INTEGRATED TRANSPORTATION SYSTEM	IMPLEMENT THE LAGOS STATE STRATEGIC TRANSPORT MASTER PLAN (LSTMP) EXPAND THE WATER TRANSPORTATION NETWORK WITH INCREASED PRIVATE SECTOR PARTICIPATION DEVELOP AN E-PLATFORM THAT COORDINATES AND INTEGRATES PUBLIC TRANSPORT SERVICES
	IMPROVE ACCESS TO CLEAN WATER AND SANITATION	PROVIDE PUBLIC TOILETS AND BATHROOMS IN EACH LOCAL GOVERNMENT AND LOCAL COUNCIL DEVELOPMENT AREA CONSTRUCT COMMUNITY WASTEWATER TREATMENT PLANTS DEVELOP AN INTEGRATED WASTE MANAGEMENT SYSTEM EXPAND AND PROTECT WATER SOURCES TO IMPROVE THE CITY'S WATER SUPPLY
	ENHANCE THE PROVISION OF AFFORDABLE AND RELIABLE ENERGY	CONDUCT AN ENERGY AUDIT TO DETERMINE INFRASTRUCTURE AND SUPPLY GAPS DELIVERY OF CLEAN AND SAFE ENERGY FOR COOKING DEVELOP A CAMPAIGN TO PROMOTE EFFICIENT ENERGY USE
	ENHANCE THE CITY'S RESILIENCE THROUGH LAND-USE PLANNING	STRENGTHEN THE IMPLEMENTATION OF OPERATIVE PHYSICAL DEVELOPMENT PLANS INCREASE ACCESS TO AFFORDABLE HOUSING STRENGTHEN THE LAGOS URBAN RENEWAL PROGRAMME
2 ENTERPRISE CITY	SUPPORT INDIVIDUAL AND COLLECTIVE ENTREPRENEURSHIP AS A DRIVING FORCE FOR INNOVATION AND DEVELOPMENT	STRENGTHEN THE LAGOS STATE EMPLOYMENT TRUST FUND TO SUPPORT JOB CREATION ESTABLISH AT LEAST ONE INNOVATION AND INCUBATION HUB IN EACH OF THE 57 LGA/LCDAS UPGRADE MARKET INFRASTRUCTURE ESTABLISH AN INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) VILLAGE THAT WILL INCORPORATE THE CURRENT COMPUTER VILLAGE EXPAND THE MASTER CRAFTSMAN PROJECT
	POSITION LAGOS AS AN ATTRACTIVE AND OPEN CITY, VALUING CULTURAL AND ENVIRONMENTAL ASSETS	STRENGTHEN THE CREATIVE SECTOR IN LAGOS BY ESTABLISHING A FILM VILLAGE PROMOTE SUSTAINABLE WATERFRONT TOURISM TO IMPROVE LIVELIHOOD IN COASTAL COMMUNITIES RESUSCITATE FARM CENTRES AND EXPLORE URBAN AGRICULTURE OPPORTUNITIES TO STRENGTHEN FOOD SECURITY EXPAND THE MASTER CRAFTSMAN PROJECT
	PREPARE YOUTH FOR A CHANGING ECONOMY	BROADEN THE SCOPE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN THE SCHOOL CURRICULUM SCALE UP THE CODE LAGOS PROGRAMME
3 INCLUSIVE CITY	CREATE AN INCLUSIVE ENVIRONMENT FOR ALL CITY RESIDENTS	COMMUNITY PARTICIPATORY FLOOD MANAGEMENT SCALE UP IMPLEMENTATION OF LAGOS STATE SPECIAL PEOPLES' LAWS
	STRENGTHEN INFORMATION MANAGEMENT AND DISASTER PREPAREDNESS	EXPAND USE OF THE LAGOS STATE CITIZENS GATE PLATFORM FOR EFFECTIVE E-GOVERNANCE STRENGTHEN THE STATE'S EMERGENCY RESPONSE SYSTEM STRENGTHEN THE STATE'S CAPACITY FOR COLLECTION, ANALYSIS, AND DISSEMINATION OF DATA
	IMPROVE THE HEALTH SYSTEM TO SUPPORT LAGOS RESIDENTS IN TIMES OF SHOCK	IMPLEMENT THE LAGOS STATE HEALTH SCHEME UPGRADE PUBLIC HEALTHCARE FACILITIES DEVELOP AN E-HEALTH SYSTEM THAT INCORPORATES DISEASE SURVEILLANCE



HOW TO READ THE INITIATIVES

Initiative in Brief

Briefly describes what the initiative entails

Resilience Challenge

This identifies the challenge that the initiative seeks to address

Potential Partners

Lists five relevant partners in the public and private sectors

Implementing Agency

Identifies the lead agency of the Lagos State Government that will be involved in the implementation of the initiative

Related Shocks and Stresses

This outlines which shocks and stresses are relevant to the initiative

Status

Initiate a new project; **Strengthen** an existing project

Timeline

Short term (within a year); **Medium term** (1-4years or within a single electoral cycle); **Long term** (more than 4 years or beyond an electoral cycle)

Next Steps

What needs to be done within a one-year period to implement the initiative

Resilience Benefits

How this initiative will move Lagos to a more resilient future

Resilience Linkages

How this initiative aligns with the government's priorities to achieve the targets of SDGs and THEMES

GOAL

1

INITIATIVE

2

EXPAND THE WATER TRANSPORTATION NETWORK WITH INCREASED PRIVATE SECTOR PARTICIPATION



IN BRIEF The initiative seeks to expand the Lagos water transportation network and leverage private sector participation. This will entail developing the following:

1. A participatory process involving both informal and formal ferry operators to develop minimum ferry and operational standards for operating a route.
2. A business case, evaluating the cost, benefit, and risk of all options, and providing a rationale for private sector involvement.
3. Appropriate infrastructure, e.g. dredging and development of waterway routes, including canals, to ensure the safety and free passage for medium-sized ferries.

RESILIENCE CHALLENGE The reliance on road transportation due to limited transportation infrastructure is causing long hours of traffic congestion and delays, pollution,

increased health issues, and low productivity. Despite obvious cost and environmental benefits, travel by rail and ferry accounts for only 1% of trips taken by commuters. Nigeria's main seaports are located in Lagos. Cargo and goods coming through these ports are moved by road to other parts of the country. This puts a large strain on the already congested roads. In addition, solid waste is regularly moved through Lagos using large vehicles on the roads. Transporting heavy cargo via intra- and intercity water channels will significantly improve overall mobility in the city and reduce air and noise pollution. As creeks and lagoons traverse the city, water transportation is key for the mobility of people and goods in Lagos. Lagos State Waterways Authority has drafted a comprehensive waterways transport policy. However, the shallow nature of the lagoons, creeks and rivers, and issues of affordability and profitability, make private sector participation in the sector particularly challenging.

IMPLEMENTING AGENCY

Lagos State Waterways Authority

SHOCKS

Economic downturn; major road accident/incident

STRESSES

Traffic congestion; inadequate physical and social infrastructure; inadequate public transportation

STATUS

Strengthen

TIMELINE

Medium Term

POTENTIAL PARTNERS

- Ministry of Transportation
- Ministry of the Environment and Water Resources
- Ministry of Waterfront Infrastructure Development
- Nigerian Ports Authority
- Multilateral development banks

NEXT STEPS

3 months: Convene a water transport stakeholder workshop to develop guidelines and template for private sector participation in water transport sector - infrastructure and operations.

6 months: Evaluate the viability of routes based on the Lagos Drainage master plan; produce business plan and identify potential investors; open tender for infrastructure development of waterways.

1 year: Commencement of dredging.

RESILIENCE BENEFITS

Freeing the highways and improving & diversifying public transport will reduce man hour loss and increase productivity. Jobs will be created through waterways alignment, lagoon bed sweeping and dredging as well as construction of jetties. Eventually, ferry services will continually create employment opportunities for water transportation management. The initiative will foster economic prosperity, provide additional water transport infrastructure and fosters long term integrated planning.

RESILIENCE DRIVERS

Fosters Economic Prosperity, Provides and Enhances Natural and Manmade Assets, Provides Reliable Communication and Mobility; Supports Livelihoods and Employment

THEMES

Traffic Management and Transportation; Making Lagos a 21st Century Economy, Health and Environment

SDGs



PILLAR 1

EFFICIENT CITY

A CITY THAT BUILDS THE CRITICAL INFRASTRUCTURE AND PROVIDES SERVICES THAT ARE REQUIRED TO MEET THE NEEDS OF CURRENT AND FUTURE RESIDENTS, AS WELL AS RESPONDING TO THE SHOCKS AND STRESSES THAT IMPACT THE CITY.

GOAL

1

DEVELOP A ROBUST, MULTI-MODAL, AND INTEGRATED TRANSPORTATION SYSTEM

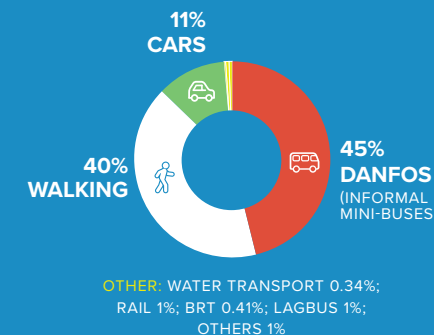
Lagos' rapidly growing population requires an efficient, readily accessible, inclusive, safe, and affordable multi-modal transportation system that is capable of withstanding sudden shocks and the chronic stresses that plague the city. A robust and integrated transportation system would help to improve access to services, education, and employment opportunities, as well as supporting public service delivery and economic growth.

All modes of transportation have challenges. The public bus services suffer from availability and reliability issues, while existing rail corridors operate marginally. Water transport is also being explored, though with limited private sector participation. Non-motorised transport infrastructure – walkways, overhead bridges, and cycle lanes – are extremely limited across the State.

There are different types of policies governing transportation in Lagos. These include the Lagos State Development Plan 2012-2025, the Lagos State Strategic Transport Master Plan, the Lagos Road Traffic and Administration Law 2012, and the Lagos State Transport Sector Reform Law 2018. There are also two policies that are yet to be fully initiated, the Draft Non-Motorised Transport Policy (2017) and the Draft Transport Policy (2019). Despite these policies, implementation has been a major challenge across the board.

The following initiatives strengthen existing policies and plans to create an efficient transportation system that will serve all segments of society and contribute to boosting the economy of the region.

TOTAL TRIPS IN METROPOLITAN LAGOS.



THE TRANSPORTATION DEMAND IN LAGOS BY ALL MODES OF TRANSPORT (INCLUDING WALKING) IS ESTIMATED AT 22 MILLION PER DAY.

This will only increase as the population and standard of living increases. There are a variety of modes to choose from when moving around Lagos, but the informal sector is dominant. The share of total trips in metropolitan Lagos consists of the following: *danfos* (informal minibuses) 45%; walk trips 40%; private cars 11%; water transport 0.34%; rail 1% and BRT 0.41%; Lagbus 1%; others 1%.²¹

²¹ Lagos Metropolitan Area Transport Authority, 2015.

IMPLEMENT THE LAGOS STATE STRATEGIC TRANSPORT MASTER PLAN (LSTMP)

IN BRIEF This initiative will centre on advancing implementation of the intra city light rail network, Bus Rapid Transit (BRT) expansion, terminals and multimodal interchanges connecting two or more modes of transport.

These are critical parts of the LSTMP and are key to keeping Lagos moving. By expanding the mass transit options, the public transportation system will be utilised more to meet commuter demands. There will be a focus on addressing the management and enforcement challenges and the infrastructure deficit of the State's transportation system, as well as promoting Transit Oriented Development approaches. Bottlenecks to implementation such as political interference will also be addressed and access to finance explored.

RESILIENCE CHALLENGE The LSTMP supports the establishment of a modern integrated multimodal transportation system. The implementation of the plan hinges on major reforms based on 25 strategic decisions under the following objectives:²²

- Increasing transport choices for all users
- Introducing an integrated transport system
- Making the transit system attractive, convenient, affordable, and accessible
- Reducing urban transportation-induced emissions
- Optimising usage of the current road network

Though the plan is comprehensive and has supporting implementation plans and policy documents, there are significant implementation delays due to funding and political challenges. This has led to urban planning and mobility issues, including traffic congestion, which hinders socioeconomic and environmental development in Lagos.

IMPLEMENTING AGENCY

Lagos Metropolitan Area Transport Authority (LAMATA)

SHOCKS

Flooding; Major Road Accident/Incident.

STRESSES

Traffic Congestion; Inadequate Physical and Social Infrastructure; Inadequate Public Transportation.

STATUS

Strengthen

TIMELINE

Long-term

POTENTIAL PARTNERS

- Ministry of Transportation and affiliated agencies
- Ministry of Waterfront Infrastructure Development
- Ministry of Physical Planning and Urban Development
- Transformative Urban Mobility Initiative
- Multilateral development banks

NEXT STEPS

3 months: Convene a working group for an audit of the LSTMP.

6 months: Conduct an evaluation of ongoing LSTMP projects, BRT expansion, light rail terminals and multimodal interchanges.

1 year: Develop a roadmap for implementation and completion of the BRT expansion, light rails, terminals, and multi-modal interchanges.

RESILIENCE BENEFITS

Improving and diversifying public transportation will free up the highways, reduce man-hour losses, and increase productivity. Jobs will be created through the various activities required to kick-start rail transport and improve transport by waterways. Eventually, the commencement of intra-city rail and expansion of ferry services will also create continuous employment opportunities for operators and maintenance crew. The initiative will foster economic prosperity, provide additional urban transport infrastructure, and foster long-term integrated planning.

RESILIENCE DRIVERS

Provides Reliable Communication and Mobility; Supports Livelihoods and Employment; Fosters Economic Prosperity; Fosters Long Term and Integrated Planning; Enhances and Provides Protective, Natural, and Man-Made Assets.

THEMES

Traffic Management and Transportation; Making Lagos a 21st Century Economy

SDGs





Lagos Bus Service at TBS terminal

BOX 1: LAGOS BRT LITE

The Lagos Bus Rapid Transit Lite is a transport option that relies on the use of free segregated lanes to guarantee fast and reliable bus travel. It is one of the several options currently used by the State Government in tackling the huge public transportation challenges of a highly urbanised city like Lagos. It is Africa's first bus rapid transit (BRT) scheme operating on an initial 22 km corridor which was extended by 13.5 km in 2015.²³ It has proven to be a more sustainable transport option than the local options of *danfos* (minibuses), *okada* (motorcycles) and *keke marwa* (tricycles) on which commuters typically rely.

Since it became operational in March 2008, the service has recorded a progressive increase in daily passenger travel, accounting for the movement of over 200,000 passengers into the Central Business District.²⁴ It meets the basic needs of Lagos commuters in terms of transport fare and speed, freeing up hours previously spent in traffic gridlocks, and offering fares at a discount of up to 50% of local public transport providers' fares. The success of the BRT Lite has resulted in the State's current expansion of services to cover routes outside the metropolis, linking the city to others in neighbouring states.

The BRT has significantly reduced the stresses associated with traffic congestion that Lagos residents experience in commuting to work, home, and play. Reduced transportation costs also improve the economic situation of commuters and increase their ability to afford other social services.



²³ Sub-Saharan Africa Transport Policy Program (2009). Lagos Bus Rapid Transit: Africa's first BRT scheme. Urban Transport Series SSATP Discussion Paper, 9; Oladeinde (2018)
²⁴ Global BRT data (2019). Lagos. BRTDATA.ORG

GOAL**1****INITIATIVE****2**

EXPAND THE WATER TRANSPORTATION NETWORK WITH INCREASED PRIVATE SECTOR PARTICIPATION



IN BRIEF The initiative seeks to expand the Lagos water transportation network and leverage private sector participation. This will entail developing the following:

1. A participatory process involving both informal and formal ferry operators to develop minimum ferry and operational standards for operating a route.
2. A business case, evaluating the cost, benefit, and risk of all options, and providing a rationale for private sector involvement.
3. Appropriate infrastructure, e.g. dredging and development of waterway routes, including canals, to ensure the safety and free passage for medium-sized ferries.

RESILIENCE CHALLENGE The over-reliance on road transportation due to limited transportation infrastructure is causing long hours of traffic

congestion and delays, pollution, increased health issues, and low productivity. Despite obvious cost and environmental benefits, travel by rail and ferry accounts for only 1% of trips taken by commuters. Nigeria's main seaports are located in Lagos. Cargo and goods coming through these ports are moved by road to other parts of the country. This puts a large strain on the already congested roads. In addition, solid waste is regularly moved through Lagos using large vehicles on the roads. Transporting heavy cargo via intra- and intercity water channels will significantly improve overall mobility in the city and reduce air and noise pollution. As creeks and lagoons traverse the city, water transportation is key for the mobility of people and goods in Lagos. Lagos State Waterways Authority has drafted a comprehensive waterways transport policy. However, the shallow nature of the lagoons, creeks and rivers, and issues of affordability and profitability, make private sector participation in the sector particularly challenging.

IMPLEMENTING AGENCY

Lagos State Waterways Authority

SHOCKS

Economic Downtown; Major Road Accident/ Incident

STRESSES

Traffic Congestion; Inadequate Physical and Social Infrastructure; Inadequate Public Transportation

STATUS

Strengthen

TIMELINE

Medium Term

POTENTIAL PARTNERS

- Ministry of Transportation
- Ministry of the Environment and Water Resources
- Ministry of Waterfront Infrastructure Development
- Nigerian Ports Authority
- Lagos State Ferry Services

NEXT STEPS

3 months: Convene a water transport stakeholder workshop to develop guidelines and template for private sector participation in water transport sector - infrastructure and operations.

6 months: Evaluate the viability of routes based on the Lagos Drainage master plan; produce business plan and identify potential investors; open tender for infrastructure development of waterways.

1 year: Commencement of dredging.

RESILIENCE BENEFITS

Improving and diversifying public transportation will free the highways, reduce man hour loss and increase productivity. Jobs will be created through the various activities required to improve the waterways. Eventually, the provision of ferry services will continually create employment opportunities for operators and maintenance crews. The initiative will foster economic prosperity, provide additional urban transport infrastructure and foster long-term integrated planning.

RESILIENCE DRIVERS

Fosters Economic Prosperity, Provides and Enhances Natural and Manmade Assets, Provides Reliable Communication and Mobility; Supports Livelihoods and Employment

THEMES

Traffic Management and Transportation; Making Lagos a 21st Century Economy, Health and Environment

SDGs

INTERNATIONAL CASE STUDY:
RIVER THAMES, LONDON, UK

There have been recent improvements in private sector participation in the water transportation sector in London, UK.

The River Thames now provides an uncongested and cost-effective highway for freight and passengers and is an integral part of London's urban fabric as it is the busiest inland waterway in the UK. London has seen a 40% rise in the volume of freight movement on the River Thames since 2015 (PLA, 2019). This increase has been attributed to deliberate and focused urban policies and the establishment of specific government bodies with a mandate to explore the viability of increased water transportation on the Thames. Furthermore, infrastructure to support the legislation and ensure viability of the water transport option was provided.

Passenger experience of river travel in London is shaped by the quality of the service information they receive before setting off. To encourage more use of the river as a form of transport, Transport for London (TfL) provides clear information on available services, how to access them and ensures excellent interchange.²⁷

APPLICABILITY TO LAGOS

Like London, Lagos will benefit from shifting freight and cargo from heavily congested roads to the waterways. There are some key lessons from the River Thames case study that will attract private investment or encourage public-private investment. These are related mainly to the policies surrounding water freight movement such as:

- Ensuring the use of water transportation for freight transport including construction materials (particularly those activities close to waterways). An example of this could be the Victoria Island Lekki Axis where major development close to the Lagos Lagoon has been taking place over the past 15-20 years. Using waterways to transport construction materials for this long-term property development can create additional demand for water freight transport.

- Lagos State Government should explore providing commitment strongholds for water freight transportation. In the case of London, the regeneration of already existing wharves to support cargo loading and offloading demonstrates a commitment from the government to support the water transportation sector. Lagos State Government can also show its commitment towards the sector by catalysing investment (through public funds or in partnership with the private sector) in key marine infrastructure such as jetties and terminals that will stimulate further private sector investment.



27 <https://fta.co.uk/CMSPages/GetFile.aspx?guid=c50e975f-cb4e-4905-8281-dbbb60289be&lang=en-GB>
<https://www.unescap.org/sites/default/files/30.%20CS-London-United-Kingdom-congestion-charge.pdf>

26 <https://tfl.gov.uk/corporate/about-tfl/culture-and-heritage/londons-transport-a-history/river/>
<http://content.tfl.gov.uk/river-action-plan.pdf>

GOAL
1

INITIATIVE
3

DEVELOP AN E-PLATFORM THAT COORDINATES AND INTEGRATES PUBLIC TRANSPORT SERVICES



Using e-Platform to Navigate in Lagos

IN BRIEF This initiative will entail the development of a data collection and analytics system that will enable Lagos residents to have real-time access to transportation data for informed trip planning.

This will be done in three steps:

1. Generation of real-time data collection on all modes of transportation both informal and formal to determine the nature, length, and patterns of travel behaviour
2. Integration of data on how many people are moving from one mode to the other to enable planning
3. Information access for consumers, e.g. apps and transport boards at hubs

RESILIENCE CHALLENGE Lagos residents persistently face long travel times due to over-reliance on road transport, traffic congestion, inadequate infrastructure, poorly designed interchanges, etc. Inconsistent public transport and poorly structured transport fare regimes hinder productivity and cause stress for commuters. Adequate multi-modal transportation infrastructure and information are important means to foster behavioural change towards more sustainable travel habits. However, the lack of these impairs coordinated mobility services and travel time planning by the commuter. LAMATA has a real-time BRT monitoring system (for internal use only), but there is a demand for a complete, reliable, real-time, commuter-friendly travel information system for the growing commuter population of Lagos.

IMPLEMENTING AGENCY

Lagos Metropolitan Area Transport Authority

SHOCKS

Economic Downturn;
Major Road Accident/
Incident

STRESSES

Traffic Congestion;
Inadequate Physical and
Social Infrastructure;
Inadequate Public
Transportation

STATUS

Strengthen

TIMELINE

Medium-term

POTENTIAL PARTNERS

- Ministry of Transportation and its relevant agencies: Lagos Bus Services Limited, Lagos State Waterways Authority, Rail Services, Lagos State Ferry Services, Lagos State Traffic Management Authority
- Office of Public-Private Partnership
- Ministry of Physical Planning and Urban Development
- Nigerian Railway Corporation
- Institute for Transportation and Development Policy

NEXT STEPS

3 months: Creation of a coordination body that will include LAMATA and other relevant agencies of the Ministry of Transportation, Nigerian Ports Authority, National Inland Waterways Authority, Ministry of Physical Planning and Urban Development.

6 months: Conduct research to revalidate the current transportation demands and select technical partners to develop tools, apps, and resources for open data platforms. **1 year:** Secure investment for short-term/more immediate shifts.

RESILIENCE BENEFITS

A real-time integrated transportation system would help ease the movement of people and goods while addressing the increasing demand for reliable and easy-to-use travel information. The inclusivity of multiple modes would improve mobility, thereby fostering economic development, security of livelihood, increase in productivity, and efficiency, as well as increasing the employment rate. Furthermore, the initiative tends to reclaim public space from private car use, leading to the reduction of road congestion and better space equity.

RESILIENCE DRIVERS

Fosters Economic Prosperity, Empowers a Broad Range Of Stakeholders, Fosters Long-Term and Integrated Planning. Provides Reliable Communication and Mobility, Ensures Continuity of Critical Services.

THEMES

Traffic Management and Transportation; Making Lagos a 21st Century Economy

SDGs



**INTERNATIONAL CASE STUDY:
E-PLATFORM FOR TRANSIT, DIGITAL TRANSIT INFORMATION
SHARING, BARCELONA**

Transports Metropolitans de Barcelona (TMB) Digital is a digital strategy implemented in 2009 to provide information to Barcelona commuters about bus, metro, and cable car travel options.²⁸ The strategy has resulted in real-time information sharing for riders, including updates on travel routes, service disruptions, route planning, bus arrival times, maps, schedule checking, and other live updates across the full TMB network, including 100 km of routes, 141 stations, and over 1,000 buses.

To reach a broad audience, information is made available through multiple platforms, including mobile apps (TMB App), the TMB website, individualised subscription services (JoTMB), and digital signage (MouTV) that broadcasts information across 3,000 points in the network including metro stations, trains, buses, and service centres. Due to the integration of transportation options across multiple modes, users can use digital platforms to buy tickets and transit cards that function across the metro, rail, and cable car networks.

Public satisfaction in the bus/metro service is high, ranking 7.7 out of 10 according to a 2017 Customer Satisfaction Index (averaged for bus and metro), with increasing rates per year, and increased geographic coverage and passengers using the system since 2008.²⁹

APPLICABILITY TO LAGOS

A key element in encouraging public transit use in Lagos will be better integration of multimodal transportation offerings through coordinated planning across transit modes, and information sharing with transit users.

Information dissemination through digital means has enormous potential. Improvements to the existing Lagos BRT mobile app can include regular updates on transit status and anticipated travel times; maps and schedules for bus, rail and ferry services; improved journey planning; integrated ticketing across transit modes, and other features. Improvements to the LAMATA website can target user interface, and new features such as real-time status updates and accurate trip planning information, as well as ensuring the website is fully responsive to all handheld devices and operating systems. Advanced planning to incorporate the ongoing Lagos Urban Rail Network into integrated e-platforms for transit riders will help improve journey planning for Lagosians.

More generally, better integration between LAMATA and other transport operators can improve transit options for residents. Initial steps to improve integration may include establishing new working groups and regular communication channels between agencies and with large private sector transit providers.



GOAL

2

IMPROVE ACCESS TO CLEAN WATER AND SANITATION

The United Nations has highlighted the lack of clean water and unsanitary conditions as major hindrances to socio-economic development.³⁰ Lagos Water Corporation covers only 35% of the population of metropolitan Lagos. The corporation is currently facing a water demand of 540 million gallons per day (MGD) but only supplies 210 MGD through 3 major waterworks, 17 mini waterworks, and 31 micro waterworks. While the major waterworks rely on the Ogun and Owo rivers for supply, the others use groundwater pumped from boreholes on site. Excluding unaccountable water losses, this leaves a deficit of 330 MGD (a gap of around 60%).³¹

Over the years, the State Government has invested heavily in the water and sanitation sector, focusing on expanding water supply facilities, transmission and distribution systems, rehabilitation of existing facilities and infrastructure, improved administrative infrastructure and institutional support, in addition to improving solid waste management and wastewater management. Part of the State Government's long-term plan is also to encourage private sector participation in the water and sanitation sector.

The initiatives below build on existing structures, incorporate a community-based approach, as well as a focus on alternative, inclusive mechanisms for funding public water supply in Lagos. The initiatives aim to reduce the State's vulnerability to shocks arising from disease outbreak, flooding or severe storms, building collapses, and urban fires.



28 Centre for Public Impact. "The Digital strategy of Transport Metropolitans de Barcelona (TMB)." <https://www.centreforpublicimpact.org/case-study/transport-metropolitans-de-barcelona-digital-services/>.

29 Transports Metropolitans de Barcelona (TMB). TMB 2017 Management Report. https://www.tmb.cat/documents/20182/322063/Informe+anual+2017_EN.pdf/a4d95baf-44ff-48a3-8add-b69d2fdb3d81.

30 Isiaka, T. 2017. "Challenges of waste management in Lagos." <https://sustvibes.com/challenges-waste-management-lagos/>.

31 Lagos Water Corporation. 2010. Lagos Water Supply Master Plan, Lagos, Nigeria.

32 Ayinde, O., 2013. "Implementation of Water and Sanitation Policies and Practices within the Spatial Plans of Lagos, Nigeria." A presentation at the World Water Week, Stockholm, 4 September 2013.

33 Iloani, F. A. and Clement P. S. 2017. "Poor sanitation, water top environmental challenges in Nigeria – Data." <https://www.dailytrust.com.ng/poor-sanitation-water-top-environmental-challenges-in-nigeria-data.html>.

GOAL

2

INITIATIVE

1

PROVIDE PUBLIC TOILETS AND BATHROOMS IN EACH LOCAL GOVERNMENT AND LOCAL COUNCIL DEVELOPMENT AREA

IN BRIEF **Design and construction:** Construction of sanitary and safe public toilets in vulnerable communities of each LGA/LCDA, using appropriate technologies, to improve access to safely managed sanitation systems in an environmentally friendly manner. This will be done through extensive community engagement to enhance project sustainability and community uptake. It will also provide jobs for local artisans in the construction process. The design and construction will ensure adequate storage, water access, and means of waste evacuation.

Private sector partnerships: A business case would also be developed for private sector/social enterprise involvement in the construction of public toilets throughout the State, especially around high traffic areas.

Management: A management system will be developed encouraging usage on a fee-paying basis managed by a local committee in order to provide employment for vulnerable people such as women, the elderly, and persons living with disabilities. In addition, especially around core residential neighbourhoods, communal toilets will managed cooperatively by households. The households will be mandated to maintain and keep them clean, using pooled funds to cover maintenance costs and

repairs. This will promote a sense of ownership and a feeling of safety for residents as they are more proximately located than the commercial public toilets.

Sensitisation campaigns: Furthermore, public awareness and education campaigns would be carried out to encourage behavioural change concerning the rejection of open defecation.

RESILIENCE CHALLENGE The widespread lack of public toilets of sufficient quality has led to open defecation across the State and other parts of the country. At present, there are approximately 1,100 public toilets in Lagos State. However, some of them are not patronised for various reasons: unhygienic condition, distance from residential areas, locations in seemingly unsafe places, and sometimes simply because people prefer not to pay. Public defecation has health implications as it could contaminate water sources aiding the transmission of faeco-oral diseases that could lead to illness and death. In addition, the lack of public toilet facilities leads to loss of dignity and privacy including the risk of physical attack and sexual violence. It also exacerbates some of the vulnerabilities of the elderly and can have debilitating effects on girls such as absenteeism from school, which widens the education gap between boys and girls.

IMPLEMENTING AGENCY	POTENTIAL PARTNERS
Ministry of the Environment and Water Resources	<ul style="list-style-type: none">Local Governments/Local Council Development AreasFederal Ministry of Mineral Resources/Clean Up Nigeria InitiativeMinistry of HealthWASH Sector NGOsSocial enterprises and private investors
SHOCKS	NEXT STEPS
Disease Outbreak, Flooding and Severe Storms	<p>3 months: Engage stakeholders, including women, to establish modalities for design and construction. Identify pilot sites (within five to ten LGA/LCDAs) and potential sponsors.</p> <p>6 months: Establish local management committees and train maintenance teams. Mobilize funds for construction of the toilets.</p> <p>1 year: Commence construction on pilot sites.</p>
STRESSES	
Overpopulation/Overcrowding; Inadequate Health System; Inadequate Physical and Social Infrastructure	
STATUS	
Strengthen	
TIMELINE	
Medium-term	

RESILIENCE BENEFITS	RESILIENCE DRIVERS
Sanitary and safe public toilets are a cost-effective and environmentally friendly approach to addressing the open defecation challenge. The initiative will reduce the State's vulnerability to disease outbreaks, increase the potential to empower a broad range of stakeholders and promote environmental health.	Supports Livelihoods and Employment; Empowers a Broad Range of Stakeholders; Promotes Cohesive and Engaged Communities; Enhances and Provides Protective Natural and Man-made Assets.
THEMES	SDGs
Health and Environment	<div><div>3</div><div>6</div><div>11</div><div>17</div></div>

GOAL

2

INITIATIVE

2

CONSTRUCT COMMUNITY WASTEWATER TREATMENT PLANTS



IN BRIEF The initiative involves the introduction of a community-based approach to wastewater treatment and management in lieu of larger centralised treatment facilities, as it is a viable near-term model. It will entail extensive public awareness, construction of a pipeline network (sewer), and the introduction of community-based wastewater treatment plants using appropriate technologies that are location-specific. The goal of this community wastewater treatment facility is to discharge effluent safely according to international standards into the Lagos State hydrological system using appropriate technology. At the treatment plant, wastewater will be treated to tertiary level for actual reuse of sludge and effluent. Five communities will be selected as pilot locations and the plants will be operated on a

Public-Private-Partnership model with the community playing a significant role in its operation.

RESILIENCE CHALLENGE Approximately 1.85 billion cubic metres of wastewater is generated on a daily basis in Lagos, yet only 5% of the population is connected to the public sewerage system (Lagos State Wastewater Management Office, 2018). Around 40% of the available wastewater treatment infrastructure is either non-functional or in a state of disrepair. This leaves a large volume of wastewater released into the environment without adequate treatment, with attendant risks to the environment and the population. The ultimate impact of poor wastewater management is that water purity is compromised across the State.

IMPLEMENTING AGENCY	POTENTIAL PARTNERS
Lagos State Wastewater Management Office	<ul style="list-style-type: none">Ministry of the Environment and Water ResourcesLagos Water CorporationMinistry of Local Government and Community AffairsMinistry of Physical Planning and Urban DevelopmentMultilateral agencies, e.g. United Nations Development Programme
SHOCKS	NEXT STEPS
Disease Outbreak; Flooding and Severe Storms	<p>3 months: Align with relevant agencies to perform baseline assessment, to identify and confirm household demand and priorities to inform the planning and design process, and selecting priority/pilot locations and appropriate technologies.</p> <p>6 months: Procure feasibility study for the final design of the infrastructure (sewers, treatment facility).</p> <p>1 year: Develop an operation and maintenance concept (e.g. terms of payment, who is operating and maintaining the pilot locations).</p>
STRESSES	
Inadequate Health System; Overpopulation/Overcrowding; Inadequate Physical and Social Infrastructure	
STATUS	
Initiate	
TIMELINE	
Long-term	

RESILIENCE BENEFITS	RESILIENCE DRIVERS
Water quality dictates the potential ways water is used. The release of treated wastewater to the environment will reduce vulnerability to infectious diseases, create a cleaner and sustainable environment and reduce surface/groundwater pollution. This in addition to access to safely managed sanitation services, reduced loss of biodiversity, resource recovery and reuse, employment and income generation and improved public health. The initiative will address the root cause of wastewater challenges in the metropolis and encourage the responsible use and reuse of water	Meets Basic Needs; Ensures Public Health Services; Enhances and Provides Protective Natural and Manmade Assets; Promotes Cohesive and Engaged Communities.
THEMES	SDGs
Health and Environment	<div><div>3</div><div>6</div><div>14</div><div>17</div></div>

INTERNATIONAL CASE STUDY: COLLABORATIVE WASTEWATER MANAGEMENT, KENYA WATER SERVICES TRUST FUND

The Water Services Trust Fund (WSTF) is a basket financing mechanism established in 2004 through the Kenya Water Act and operated under the Kenya Ministry of Water and Sanitation. As part of its urban water and sanitation programme, the WSTF provides financing, as well as tools and technical support for water and sanitation services with a focus on sanitation services in under-served urban areas. The fund uses clear procedures and technical standards to finance water supply and sanitation infrastructure for urban low-income areas. Only licensed water service providers (WSPs) at the county-level can apply for funding for infrastructure projects in urban low-income areas. WSTF's Upscaling Basic Sanitation for Urban Poor (UBSUP) investment programme is supported by the Government of Kenya, in partnership with the German Development Cooperation (KfW, GIZ), the European Union, and the Bill and Melinda Gates Foundation. Under UBSUP, the WSTF subsidises household sanitation facilities and provides funds for emptying equipment and faecal sludge treatment facilities i.e. public infrastructure owned and operated by the licensed water/sanitation service provider. WSTF funding also supports construction of small-scale decentralised treatment plants. As of 2018, the WSTF has funded a total of 2387 projects, representing coverage of over 4.4 million Kenyans and a total disbursement of approximately US\$175 million.³⁵

APPLICABILITY TO LAGOS

Government and public utilities will play a key role in implementing improvements across the full sanitation chain, with a focus on decentralised sanitation treatment. As demonstrated in the WSTF case, basket funds hosted by national (or state) government and co-administered with outside partners can leverage international funds for urban sanitation initiatives. In Nigeria, relevant State-level agencies including the Lagos State Ministry of the Environment and Water Resources can work with National Government agencies such as the Federal Ministry of Water Resources to solicit international support for urban sanitation initiatives. National and State-level Governments can provide financial and technical support to the private sector and increase local demand for sanitation facilities through social marketing, branding, and advertising efforts. Good governance, including transparency around how money is managed and disbursed, is critical to replicate the success of the WSTF.

GOAL

2

INITIATIVE

3

DEVELOP AN INTEGRATED WASTE MANAGEMENT SYSTEM

IN BRIEF The initiative entails the development of an integrated waste management system that incorporates waste sorting, recycling, and reuse, applying a circular economy approach.

Baseline Study: The initiative will entail a baseline study to quantify and qualify waste streams. Data will be collected on what kind of waste people generate and the locations where it is generated. In addition, waste management hotspots, particularly illegal dumping sites and problems, will be identified. **Mapping:** Based on the results and the infrastructure available, Lagos' waste streams and waste system will be mapped. **Waste Collection:** A solid waste collection service (that includes both the informal and formal sectors) using the baseline study and already existing data and information will then be designed. **Sensitisation:** This will be followed by a public sensitisation campaign to engender behavioural change, and to educate and encourage households and other waste generators to sort their waste at source. Incentives and initiatives will also be provided to encourage sustainable waste management at household and community levels. **Decentralisation of Landfills:** The initiative will leverage on a composite system with Transfer Loading Stations incorporated with Material Recovery Facilities at the various Local Government areas.

At household and community level, construction of digesters will be encouraged for the disposal and management of organic household waste. This would be implemented in partnership with private investors and promote waste-to-energy.

RESILIENCE CHALLENGE The Lagos Waste Management Authority reports that Lagos State generates over 13,000 metric tonnes of waste daily.³⁴ Though considerable progress has been made in improving waste collection from neighbourhoods and disposal at dumpsites with the involvement of private sector partners, the current waste management system does not have adequate capacity to handle the quantity of waste generated. This is evidenced by the low collection coverage, the irregular collection frequencies and the occasional piles of waste observed in some parts of the city. Flooding has also become a common occurrence during the rainy season, due to indiscriminate waste disposal into channels and drainage systems. With the continuous increase in population, corresponding increase in waste generation and quick filling of dumpsite airspace, there is an urgent need to tackle waste management in an integrated manner that will exploit the opportunities in the waste management value chain and subsequently reduce waste generated.

IMPLEMENTING AGENCY

Lagos Waste Management Authority

SHOCKS

Disease Outbreak;
Flooding and Severe
Storms

STRESSES

Inadequate Health
System; Traffic
Congestion

STATUS

Strengthen

TIMELINE

Long-term

POTENTIAL PARTNERS

- Ministry of the Environment and Water Resources
- Lagos State Waterways Authority
- Private Waste Management Organisations
- Civil Society Organisations
- Knowledge Institutions

NEXT STEPS

3 months: Identify knowledge institutions and civil society organisations to partner with LAWMA.
6 months: Conduct a baseline study to quantify and qualify waste streams in Lagos State.
1 year: Identify incentives and initiatives and create a media campaign to promote waste sorting from source.

RESILIENCE BENEFITS

Developing an efficient value chain and circular economy around the waste management system can have huge positive effects on a city. This starts with sorting waste at the household level. Doing this can: Conserve natural resources by re-using the waste for the manufacture of new items instead of continually relying on natural resources; save landfill airspace so that landfill sites can last longer; contribute towards reducing the contributors to global warming (landfill gas); and save energy. The production of some products from recycled materials uses far less energy than the production of the same product from raw materials, reduces pollution which could have resulted in the disposal of the material, and creates jobs.

Recyclables remain clean (not contaminated by other waste), so that they can fetch a higher price when being sold, will not be rejected by processors (recyclers), or end up being disposed at landfill, and will make for easier and more efficient waste collection.

RESILIENCE DRIVERS

Meets Basic Needs; Ensures Public Health, Enhances and Provides Protective Natural and Man-Made Assets; Promotes Cohesive and Engaged Communities.

THEMES

Health and Environment; Making Lagos a 21st Century Economy

SDGs



INTERNATIONAL CASE STUDY:**WASTE-TO-ENERGY (BIOGAS) JOHANNESBURG, SOUTH AFRICA**

The Department of Energy in South Africa has pledged to reduce its reliance on coal by increasing the capacity of renewable energy sources to its energy mix to 26% by 2030 (SA Department of Energy, 2018).³⁶ As part of this strategy, Johannesburg has implemented a biogas-to-energy plant that has a capacity of 1.1MW using three combined heat and power (CHP) engines. Currently, the electricity off-take from the plant is used to power the Northern Works Wastewater Treatment plant, while the heat is used to improve sludge management and increase the production of biogas (C40, 2016).³⁷ The City of Johannesburg financed the capital expenditure of the project and the plant was built by WEC Projects, a private project developer, who are also responsible for the operation and maintenance of the plant. The completed installation is owned by Johannesburg Water which is a municipally owned entity run as a separate company but owned entirely by the State. This project began in 2004 with the research and exploration into potential technical and business models. In 2010 the project was approved by the city and in 2012 the plant construction was completed. Due to challenges in the predictability of sludge production, the electrical output of the plant has been far lower than forecast. This is currently being combatted by Johannesburg Water refurbishing the digesters. Once this issue is resolved the electrical generation capacity of the plant will be increased (SALGA, 2012).

APPLICABILITY TO LAGOS

Lagos can benefit in several ways from the implementation of the biogas plant in Johannesburg. Lagos State has an initiative that can be further developed to include investment in waste-to-energy to increase manufacturing industry's contribution to its GDP. The State's proposed initiative can benefit from the following:

- The business model of the Johannesburg plant separates the risk and costs of the project, enabling the city to undertake the project risk-free while receiving royalties from the developer.
- Lagos has an initiative to map out areas with high waste output. The example in Johannesburg of a successful plant within a wastewater management and treatment plant shows how, if managed correctly, this can become a sustainable business plan. A high level of business and legal expertise was required in drawing up the contract. In other municipalities where these skills may not be available, lessons can be learned from the experience of Johannesburg Water.
- Energy from waste plants can be augmented by using other household waste if the segregation of waste (metals/plastics/food) is managed when it is collected.



³⁶ Integrated Resource Plan, Department of Energy, 2018. <http://www.energy.gov.za/IRP/irp-update-draft-report-2018.html>. Accessed 3 September 2019.

³⁷ C40 Case Study, 2016. https://www.c40.org/case_studies/cities100-johannesburg-waste-to-energy-partnership-saves-money. Accessed 3 September 2019.

GOAL

2

INITIATIVE

4

EXPAND AND PROTECT WATER SOURCES TO IMPROVE LAGOS' WATER SUPPLY



Creek at Festac Town

IN BRIEF This initiative seeks to identify and implement alternative, inclusive, and affordable mechanisms to fund public water supply infrastructure in Lagos State (focusing particularly on underserved areas, public buildings, and health care facilities), to increase access to safely managed water supply systems. Such alternatives demand deliberate involvement of the public in decision-making. There are four parts to this initiative:

1. Raising awareness of the dangers of using boreholes and untreated water for daily consumption
2. Reviewing regulation of water distribution and policy amendments
3. Conducting a study to fully evaluate the state of groundwater in Lagos
4. A drive to solicit and partner with private sector organisations, which will include the creation of

a Potable Water Financing Forum with local and international financial institutions

RESILIENCE CHALLENGE There is tremendous pressure on the aging potable water infrastructure of Lagos. Lagos Water Corporation has recorded a deficit of 66% (330MDG) of potable water network coverage in all settlements across the State, and informal settlements have only limited access to potable water. Climate-change-driven saline intrusion and injection of surface water pollutants into the degraded public water supply networks are other major issues. The last few decades have also witnessed the proliferation of boreholes in Lagos State because of the inconsistent potable public water supply. This adds to the vulnerability of the State provision and makes many communities prone to health hazards caused by water pollution.

IMPLEMENTING AGENCY

Ministry of the Environment and Water Resources

SHOCKS

Disease Outbreak; Urban Fire; Building Collapse

STRESSES

Inadequate Health System; Formal-Informal Economic Contestation; Inadequate Physical and Social Infrastructure

STATUS

Strengthen

TIMELINE

Long-term

POTENTIAL PARTNERS

- Ministry of Physical Planning and Urban Development
- Federal Ministry of Water Resources
- Lagos State Water Regulatory Commission
- Lagos State Wastewater Management Office
- Lagos Water Corporation

NEXT STEPS

3 months: Create awareness at LGA/LCDA level and bring together stakeholders to create scope for groundwater research and study into suitable financing mechanisms for a public water supply system. **6 months:** Conduct groundwater research. Engage with organised private sector and create the Potable Water Financing Forum.

1 year: Policy drafting and presentation for executive approval. Mobilisation of funds.

RESILIENCE BENEFITS

The lack of an adequate public water distribution network to informal settlements, low income residential estates and some medium income housing schemes is eroding urban health in the State. If water theft, cost recovery issues and financing are addressed, then the functionality of the networks can be guaranteed and the water supply chain maintained. This will ultimately reduce the number of people treated for water borne diseases, increase and improve the piped water network and also increase the number of household with direct access to public water infrastructure

RESILIENCE DRIVERS

Meets Basic Needs; Ensures Public Health Services; Enhances and Provides Protective Natural and Man-made Assets; Fosters Long-term and Integrated Planning

THEMES

Health and Environment

SDGs

GOAL

3

ENHANCE THE PROVISION OF AFFORDABLE AND RELIABLE ENERGY

Nigeria has extensive power supply challenges, producing an average of 4,000MW.⁴⁰



LAGOS STATE RECEIVES ABOUT 1,000MW⁴¹ AND HAS AN ENERGY DEFICIT OF ABOUT 9,000MW.⁴²

Nigeria produces its energy from four main sources: coal, hydro, oil, and natural gas. The generation of energy has some private sector involvement; transmission is still primarily by the Federal Government and distribution is privatised.

There are challenges throughout the power generation and supply chain. Dilapidated infrastructure contributes to blackouts and lengthy power cuts. About 40% of Nigeria's urban population is connected to the power grid, while only 10% of the rural population is connected to the grid.

Of the population connected to the grid, some households and businesses are connected illegally. Some businesses spend as much as N57.72 million per month as a result of using generators to ensure reliable electricity.

Household energy is not only for powering appliances but also for cooking. In Lagos both solid fuels (coal and wood) and non-solid fuels (kerosene, liquefied petroleum gas, electricity) are used for cooking.⁴³ Like some other fuels (coal and wood), kerosene comes with some collateral damage to human health and the environment.

The energy challenges for the population of Lagos are vast but by improving infrastructure and energy management, and by shifting to more sustainable energy sources, Lagos will improve the safety, health, and climate resilience of its population. With significant energy expended for transportation purposes, it is important to pursue transition to more efficient and sustainable energy use within that sector.

Ensuring access to reliable and affordable energy is complex and requires interventions in policy, regulation, and technology, as well as behavioural change. The initiatives in this section assess existing infrastructure and systems, address energy efficiency at the household level, and promote cleaner alternatives.

GOAL

3

INITIATIVE

1

CONDUCT AN ENERGY AUDIT TO DETERMINE INFRASTRUCTURE AND SUPPLY GAPS



IN BRIEF An energy audit is essential to determine the energy demand, generation, distribution and metering required to provide sustainable power across the city. In addition, the audit will show infrastructure and access gaps. This initiative involves engaging a research and development team to investigate actual gaps in energy infrastructure, which until now have been identified based on estimates. The team will identify the actual gaps in energy infrastructure and determine the critical areas for technical and financial assistance. The output supports rehabilitation, restoration, and expansion of energy services to enhance economic development and promote private sector investments in a commercially viable energy sector. The initiative will also include a critical look at energy use within the transportation sector.

RESILIENCE CHALLENGE Across Lagos, power is typically erratic and unreliable. Inadequate maintenance, shortage of gas, and limited transmission capacity have hindered generating stations to the point where they are idle. The growth of the population and the increase in income is leading to an increase in energy demand and additional strain on the dwindling infrastructure. With many households and businesses connecting to the grid illegally, there is lack of accountability in the system with challenges of accuracy in estimating usage. The transmission and distribution losses are estimated at 40%, more than double that of the rest of the continent. Furthermore, there is insufficient data on energy consumption in the transportation sector, as well as inadequate alternative means of energy supply. Without accurate knowledge of present and future demand, as well as current deficits, it will be increasingly hard to plan for efficient energy supply that is commensurate with population growth.

IMPLEMENTING AGENCY

Ministry of Energy and Mineral Resources

SHOCKS

Economic Downturn; Urban Fire.

STRESSES

Erratic Power Supply.

STATUS

Initiate

TIMELINE

Medium-term

POTENTIAL PARTNERS

- Lagos State Electricity Board
- National Electricity Regulatory Agency
- Electricity Distribution Companies
- Research Institutions
- Non-Governmental Organisations (NGOs)

NEXT STEPS

3 months: Coordinate stakeholders from government, academia, and the energy sector to determine the scope of the research together.
6 months: Create scope and decide on research partners.
1 year: Mobilise funds for the energy audit.

RESILIENCE BENEFITS

The energy audit will engender an evidence-based approach to planning for infrastructure and other necessary interventions in the energy sector. It will enable a better understanding of the challenges within the sector and also enable a contextual approach to address these challenges.

RESILIENCE DRIVERS

Ensures Continuity of Critical Services; Fosters Long-Term and Integrated Planning; Meets Basic Needs; Empowers a Broad Range of Stakeholders.

THEMES

Making Lagos a 21st Century Economy; Health and Environment

SDGs



40 Omojuyigbe, O. 2019. "Lagos to boost power supply." <https://punchng.com/lagos-to-boost-power-supply/>.

41 Oluwadurotimi, E. 2017. "Erratic Power Supply In Lagos." <https://rotimiedu.com/wp-content/uploads/2017/03/ProblemAnalysis.pdf>.

42 Nwagwu, I. & Oni, T. 2015. "Lagos and Its Potentials for Economic Growth." <https://ng.boell.org/2015/07/02/lagos-and-its-potentials-economic-growth>.

43 Ozoh et al. (2018). "Cooking Fuels in Lagos, Nigeria: Factors Associated with Household Choice of Kerosene or Liquefied Petroleum Gas (LPG)." International Journal of Environmental Research and Public Health. DOI: 10.3390/ijerph15040641.

DELIVERY OF CLEAN AND SAFE ENERGY FOR COOKING



Cooking with Clean fuel (LPG gas)

IN BRIEF This initiative will involve advocating the use of environmentally friendly energy and low carbon fuel by:

1. Encouraging the use of clean fuels for domestic and commercial cooking.
2. Distribution of Liquefied Petroleum Gas (LPG) canisters for domestic use. This will go hand in hand with a sensitisation program to educate the population on the value of using LPG versus solid fuels and kerosene. Lagos State Government has already started a related educational program as a step towards creating awareness. The distribution of LPG canisters is also a stopgap between the present situation and the aim of having a fully functional piped gas system.
3. Identifying and securing capital for a piped gas network.

4. Designing, developing, and installing a reticulated piped gas system that distributes gas directly to homes within a pilot area or estate.

RESILIENCE CHALLENGE Lagos relies primarily on fossil fuels for domestic, commercial, and industrial purposes. Consequently, the State's high risk from increasing greenhouse gas emissions has implications for global warming and climate change.

Cooking fuel is a major contributor to greenhouse gas emissions as kerosene, firewood, charcoal and sawdust predominate. The WHO reports that indoor smoke from such fuels is one of the leading causes of avoidable deaths and ill health worldwide. LPG and other clean fuels that are safer and more sustainable should be considered. In spite of the fact that Nigeria is a leading producer of LPG, its uptake as a cooking fuel is low.

IMPLEMENTING AGENCY

Ministry of Energy and Mineral Resources

SHOCKS

Economic Downturn; Urban Fire

STRESSES

Inadequate Physical and Social Infrastructure; Inadequate Health System

STATUS

Strengthen

TIMELINE

Long-term

POTENTIAL PARTNERS

- Ministry of the Environment and Water Resources
- Ministry of Information and Strategy
- Lagos State Safety Commission
- Federal Ministry of Petroleum Resources/Department of Petroleum Resources
- Lagos State Fire Service

NEXT STEPS

3 months: Convene a stakeholder workshop to collectively define the terms of the survey and identify a potential location for the pilot scheme. Determine sustainable energy mix approaches suitable for Lagos.

6 months: Start a survey within different parts of Lagos while amplifying a sensitisation campaign.
1 year: Advocate subsidisation of gas price and procurement of LPG canisters.

RESILIENCE BENEFITS

The shift to liquefied petroleum gas and other clean fuels will impact individual homes significantly, reducing the release of harmful gases and improving respiratory health issues. A piped gas system with adequate safety features will also reduce the danger of household fires.

RESILIENCE DRIVERS

Meets Basic Needs; Supports Livelihood and Employment; Fosters Economic Prosperity; Enhances and Provides Protective Natural and Man-made Assets.

THEMES

Health and Environment; Making Lagos a 21st Century Economy

SDGs



DEVELOP A CAMPAIGN TO PROMOTE EFFICIENT ENERGY USE



Independent Power Plant, Marina

IN BRIEF This initiative will be conducted through two programmes:

1. Developing a stakeholder committee and working group to identify and align on incentives and disincentives to be considered by the Lagos State Government for the promotion of behavioural change and energy efficiency. These could include:
 - Incentives to encourage behaviour change (e.g. on-bill financing)
 - Incentives for purchase and use of energy efficient appliances
 - Labelling of appliances to enable consumers to make better informed decisions
2. Sensitisation of Communities: building on existing awareness raising campaigns (appropriate to all strata of society) on the advantages of using energy efficient appliances, as well as good energy conservation practices. As part of the campaign, simple energy efficiency guides will

be put together for various consumers, such as residents, schools, MSMEs and manufacturers.

RESILIENCE CHALLENGE With a growing population, increase in demand amongst that population, and the strategic importance of Lagos to the rest of the country, future-proofing the energy supply is a key resilience issue.⁴⁴ Before electricity meters were introduced in Lagos State (though not all households have one yet), households and businesses were not aware of their energy usage. In a bid to become more energy efficient, technology must be leveraged, infrastructure built to be sustainable and efficient – and people must also be made aware of the most efficient, safe, and environmental ways to use power. The use of inefficient electrical or electronic appliances, careless handling of appliances, and irresponsible consumption, such as leaving appliances on when not in use, not only strains the already dilapidated infrastructure, but also contributes to fires in Lagos.

IMPLEMENTING AGENCY

Lagos State Electricity Board

SHOCKS

Economic Downturn; Urban Fires

STRESSES

Erratic Power Supply

STATUS

Strengthen

TIMELINE

Medium-term

POTENTIAL PARTNERS

- Ministry of Energy and Mineral Resources
- Electricity Distribution Companies
- Nigerian Electricity Regulatory Commission
- Standards Organisation of Nigeria
- Lagos State Ministry of Information and Strategy

NEXT STEPS

3 months: Convene a stakeholders' forum with government, academia, energy investors, and others to determine appropriate incentives and disincentives that will be promoted by Lagos State Government.
6 months: Outline and produce the energy conservation guidelines.

1 year: Commence public sensitisation and awareness campaign.

RESILIENCE BENEFITS

The environmental impact of energy efficient practices at the household level can be significant. People are often unaware that a large percentage of household greenhouse gas emissions are tied to electricity usage, so making a household energy efficient can result in significant reductions in greenhouse gas emissions. In addition, money can be saved by implementing energy efficient measures. Providing information and encouraging sustainable energy conservation habits will be beneficial to the environment and also be cost-effective for energy consumers.

RESILIENCE DRIVERS

Meets Basic Needs; Supports Livelihoods and Employment; Enhances and Protects Natural and Man-made Assets

THEMES

Health and Environment.

SDGs



INTERNATIONAL CASE STUDY: CAMPAIGN ON EFFICIENT USE OF ENERGY, CAIRO

In 2014 the Egyptian Ministry of Electricity launched a three-year nationwide communications campaign to encourage the general public to modify their household energy consumption behaviour, improve their usage efficiency, and contribute to a national reduction in energy consumption. The National Initiative for Energy Conservation campaign deployed a wide range of media platforms including traditional billboards, television and radio advertisements, and digital campaigning through popular social media channels. The overall aim was to promote energy-efficient behaviour change. The key message was simple: responsible and mindful use of energy. One of the lead advertisement slogans was: "You are the solution. Don't be too lazy to turn off an appliance." The campaign was reported to be a success, achieving a 3.7% reduction in electricity consumption within two months of launch.

APPLICABILITY TO LAGOS

Residential use is by far the biggest form of energy consumption in Nigeria and the potential impact of such a campaign may even be greater than the success experienced in Egypt. Improving public awareness of the importance of efficient energy usage, to achieve a widespread reduction in consumption, is an important way to address local and national energy challenges. The Egyptian case study has shown that clear and simple messages, combined with specific tips and advice through a range of accessible media, can have a significant impact on individual and household behaviour. There is an opportunity for Lagos State and Nigeria generally to think about how such a campaign might be most effectively implemented locally, including which media are most accessible and which local consumption habits are most unhelpful. This would inform which media and habits are most important to target. A 2015 report prepared by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH suggests that, nationally, the need to introduce energy efficiency standards for household appliances and the use of efficient diesel generators are two important ways to improve energy efficiency.⁴⁵ Atkins reports that in Lagos 80% of households rely on diesel generators,⁴⁵ which confirms both of the GIZ findings in the context of the household electrification rate in Lagos.

GOAL

4

ENHANCE THE CITY'S RESILIENCE THROUGH LAND-USE PLANNING

Rapid urbanisation and the limited implementation of plans and policies guiding the development of Lagos State has hindered sustainable development of the city. The Lagos State Development Plan 2012-2025 provides a schematic framework for housing in Lagos State. There are also various physical development plans in the State that address the challenges of urban development and slum proliferation, but these are yet to be fully realised.



IN 2017, LAGOS STATE MINISTRY OF HOUSING ESTIMATED A HOUSING DEFICIT OF APPROXIMATELY 3 MILLION UNITS.

Due to the high costs of standard housing, many residents live in slum-like conditions, lacking basic amenities such as potable water, hygienic sanitation, sufficient living area, durable housing, and secure tenure.⁴⁶

The initiatives in this section will leverage existing plans, especially the Master Plans and Model City Plans, and will propose affordable housing and slum upgrading approaches. Cumulatively, these will achieve an aesthetically pleasing physical environment that enables Lagos residents to thrive, adapt, and grow.

⁴⁵ www.atkinsglobal.co.uk/~/media/Files/A/Atkins-Corporate/group/sectors-documents/urban-development/FPC_Lagos_Leaflet_Lowres.pdf.

⁴⁶ UN-Habitat. 2010. "Chapter 1: Development Context and the Millennium Agenda, The Challenge of Slums: Global Report on Human Settlements 2003." Revised and updated version (April 2010). https://unhabitat.org/wp-content/uploads/2003/07/GRHS_2003_Chapter_01_Revised_2010.pdf.

STRENGTHEN THE IMPLEMENTATION OF OPERATIVE PHYSICAL DEVELOPMENT PLANS

IN BRIEF This initiative involves embarking on full implementation of Master Plans and Model City Plans to achieve a functionally efficient and aesthetically pleasing physical environment for living, working, recreation, and mobility. This will entail the following:

1. Data: development of a spatial database for all properties in the city.
2. Governance, enforcement, awareness: engaging the real estate development community to understand the Master and Model City Plans and enforcement mechanisms.
3. Review and domestication of the National Building Codes to encourage energy-efficient construction as well as vertical development and compact city design.
4. Capacity-building: increasing the number of building inspectors and ensuring appropriate Key Performance Indicators are attached to their achievements.
5. Permitting: ease of access to planning permits.
6. Risk-based approach: focused monitoring on particular areas that are undergoing rapid change.
7. Protection of spaces reserved for greenery, walking, cycling, and aesthetics.
8. Preparation Action Area Plans to ensure that

development is undertaken in a suitable and integrated manner.

9. Preparation Regional Development Plans to cover the entire State.

While the Master and Model City Plans are being implemented, a digital surveillance system using drones will be considered as a means to track construction regularly and in real-time. In addition, the e-planning process will be expanded, and promoted to encourage widespread usage.

RESILIENCE CHALLENGE Lagos State has 4 Master Plans and 8 Model City Plans. These plans are policy documents that envision the physical, social, and economic capacity of Lagos today and for the future. However, sustainable implementation of physical development plans are a challenge, resulting from lack of strong monitoring and enforcement as well as land allocation contrary to the provisions of the Master Plans or Model City Plans.

Recently, incidences of building collapse and encroachment on road buffer zones and drainage alignment have increased. Similarly, violation of land use and space standards in government sites and service schemes have also increased.

IMPLEMENTING AGENCY

Ministry of Physical Planning and Urban Development

SHOCKS

Building Collapse; Forced Eviction; Flooding and Severe Storm

STRESSES

Formal- Informal Economic Contestation; Overpopulation/ Overcrowding; Traffic Congestion

STATUS

Strengthen

TIMELINE

Long-term

POTENTIAL PARTNERS

- Ministry of Environment and Water Resources
- Lagos State Agricultural Land Holding Authority
- Lagos State Lands Bureau
- Office of the Surveyor General
- Ministry Works and Infrastructure

NEXT STEPS

3 months: Convene the relevant MDAs to identify specific interventions to undertake that will speed up the implementation of the Master and Model City Plans.
6 months: Build on the existing digital spatial database to develop a robust system. Build capacity for effective use of the system within the relevant ministries.

1 year: Engage the built environment practitioner community to identify development champions for the monitoring and implementation of the Master and Model City Plans.

RESILIENCE BENEFITS

Full implementation of the Master Plans and Model City plans to achieve a functionally efficient and aesthetically pleasing physical environment for living, working, recreation, and mobility.

RESILIENCE DRIVERS

Fosters Long-Term and Integrated Planning; Promotes Leadership and Effective Management; Ensures Social Stability, Security and Justice; Promotes Cohesive and Engaged Communities; Ensures Public Health Services; Supports Livelihoods and Employment

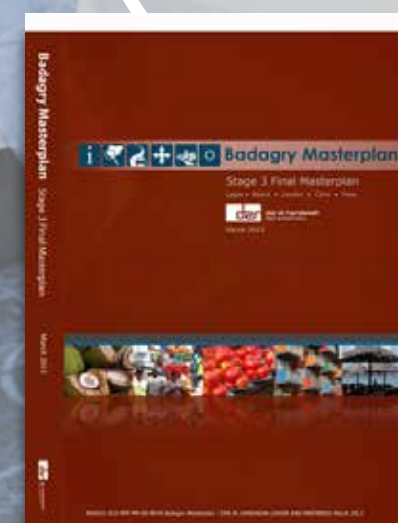
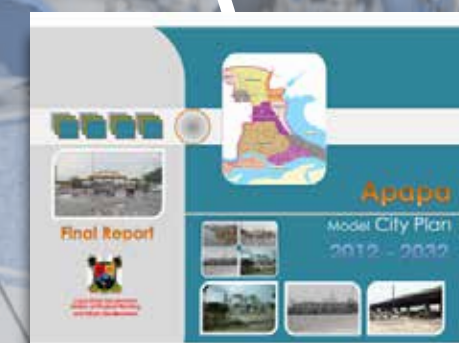
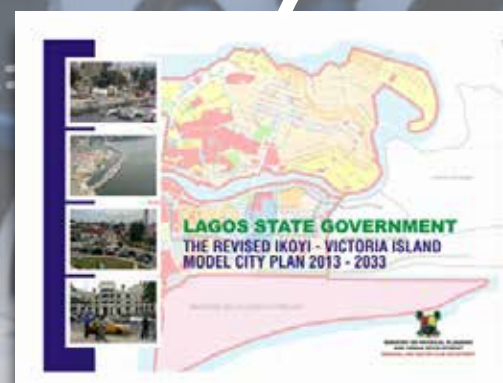
THEMES

Health and Environment; Making Lagos a 21st Century Economy; Security and Governance

SDGs



LAGOS OPERATIVE PHYSICAL DEVELOPMENT PLANS



INCREASE ACCESS TO AFFORDABLE HOUSING



IN BRIEF This initiative is a dedicated system that allows multiple choices for people to access affordable housing and for investors to profit over a long period of time. This will be supported by the development of additional housing schemes across the city by the State Government. It will incorporate:

1. The development of the Lagos Affordable Housing Development Fund, which will be accessed by developers (not individuals) at a single digit interest rate for mass production of housing units. These units will subsequently be released to the market at affordable rates using rent-to-own or traditional mortgage options.
2. Research on low-cost housing construction methods and materials in order to increase housing affordability for residents.
3. Standardisation of land valuation, security of tenure, and land administration processes to improve access to housing and housing rights for residents.

RESILIENCE CHALLENGE A housing deficit of about three million homes in Lagos has led to homelessness and the proliferation of slums and informal settlements. The population living in slums has inadequate access to infrastructure and basic services, which has clear links with poor social and economic outcomes, such as broken families, unemployment, and social exclusion. This segment of the population living without access to adequate infrastructure has limited access to credit and formal jobs due to stigmatisation and geographic isolation. With the lack of basic services, waterborne diseases such as typhoid and cholera are prevalent.

The cost of renting or buying property in Lagos is high and the mortgage system, which is usually a means to bring more people into the housing market, has not been able to achieve this due to high interest rates of 19.5% for mortgages and 23% for loans.

IMPLEMENTING AGENCY

Ministry of Housing

SHOCKS

Forced Eviction;
Economic Downturn;
Building Collapse

STRESSES

Overpopulation and Overcrowding;
Unemployment and Underemployment;
Formal-informal Economic Contestation

STATUS

Initiate

TIMELINE

Long-term

POTENTIAL PARTNERS

- Ministry of Works and Infrastructure
- Ministry of Physical Planning and Urban Development
- Ministry of Economic Planning and Budget
- Mortgage Banks
- NGOs

NEXT STEPS

3 months: Establishment of the Lagos Affordable Housing Committee, involving all stakeholders, to develop the funding scheme and implementation guidelines.

6 months: Identify pilot housing development and key partners for the pilot.

1 year: Launch the Lagos Affordable Housing Development Fund for the pilot scheme.

RESILIENCE BENEFITS

This initiative will help reduce the housing deficit in Lagos. Moreover, there will be a reduction in the growth of slums and informal settlement in the State. This will reduce vulnerability to environmental disaster and social injustice. Implementing this initiative will increase accessibility to long-term funding, with single digit interest rates that allow for easier access to housing. Overall, acute homelessness in the city of Lagos will decrease.

RESILIENCE DRIVERS

Meets Basic Needs; Support Livelihood and Employment; Ensures Public Health Services; Promotes Cohesive and Engaged Communities; Fosters Economic Prosperity; Fosters Long-Term and Integrated Planning

THEMES

Making Lagos a 21st Century Economy; Health and Environment

SDGs

3

BETTER HEALTH AND WELL-BEING

6

CLEAN WATER AND SANITATION

10

REDUCED INEQUALITIES

11

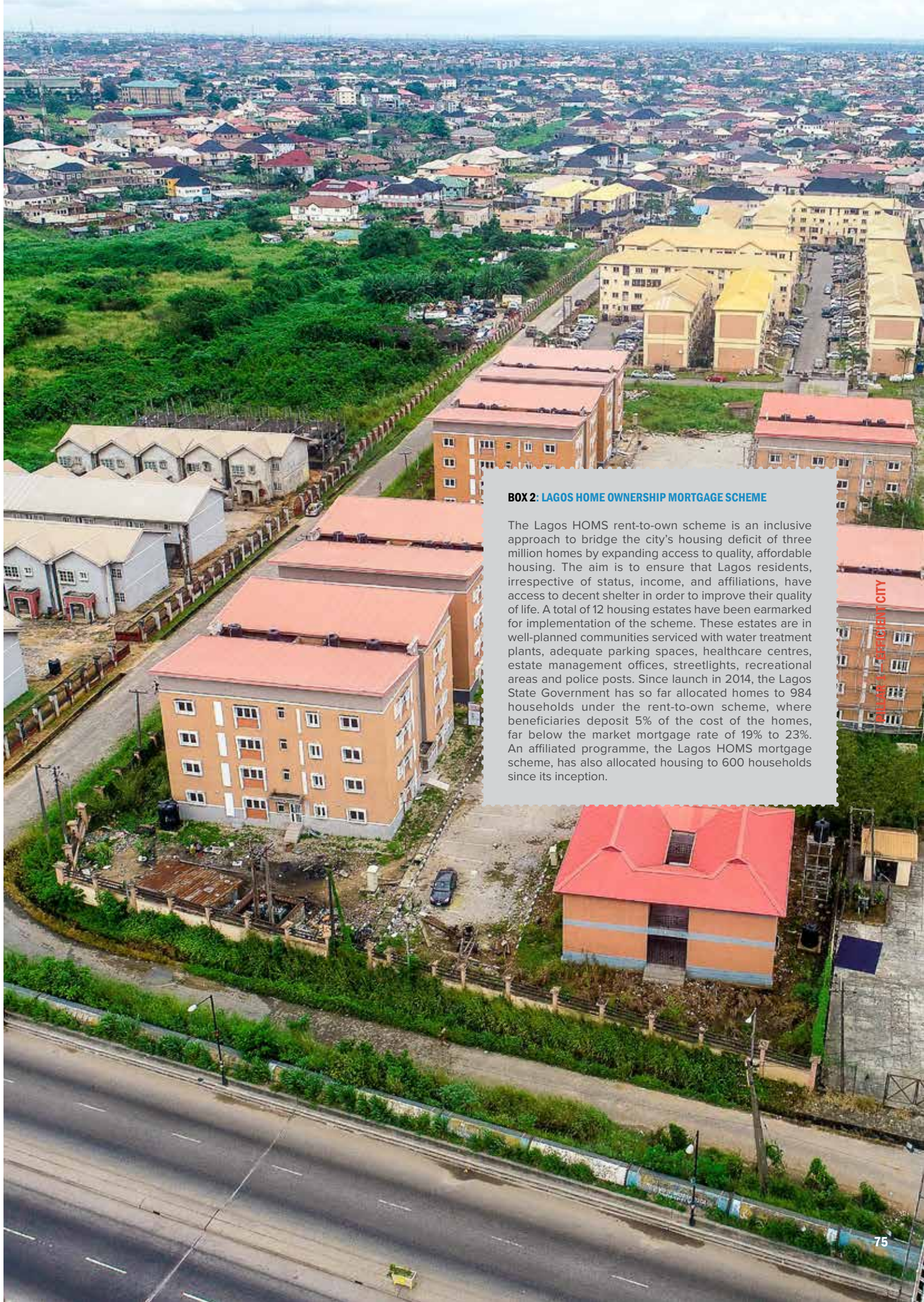
SAFER, MORE RESILIENT AND INCLUSIVE COMMUNITIES

17

PARTNERSHIPS FOR THE GOALS

BOX 2: LAGOS HOME OWNERSHIP MORTGAGE SCHEME

The Lagos HOMS rent-to-own scheme is an inclusive approach to bridge the city's housing deficit of three million homes by expanding access to quality, affordable housing. The aim is to ensure that Lagos residents, irrespective of status, income, and affiliations, have access to decent shelter in order to improve their quality of life. A total of 12 housing estates have been earmarked for implementation of the scheme. These estates are in well-planned communities serviced with water treatment plants, adequate parking spaces, healthcare centres, estate management offices, streetlights, recreational areas and police posts. Since launch in 2014, the Lagos State Government has so far allocated homes to 984 households under the rent-to-own scheme, where beneficiaries deposit 5% of the cost of the homes, far below the market mortgage rate of 19% to 23%. An affiliated programme, the Lagos HOMS mortgage scheme, has also allocated housing to 600 households since its inception.



STRENGTHEN THE LAGOS URBAN RENEWAL PROGRAMME



Broadview of Makoko slum settlement

IN BRIEF The initiative will entail the development of a comprehensive Urban Upgrading and Renewal Policy with clear guidelines and templates for various approaches. It will use a participatory, community-led approach and will advance guidelines for resettlement, slum upgrading, regeneration, redevelopment, and Public-Private Partnerships. In addition, a pilot upgrading programme will be used as a test case. The results of the pilot programme will feed back into the Urban Upgrading and Renewal Policy.

RESILIENCE CHALLENGE A rapid urbanisation growth rate of near 4% has resulted in a geographical expansion and population explosion of up to an estimated 26 million Lagosians, with two out of three living in slums. Since the population growth of Lagos shows no sign of slowing over the next decade, the implications for existing and new demand for infrastructure, housing,

and other physical amenities and facilities remains critical.

Slum communities are generally characterised by lack of basic public services such as water, electricity, healthcare, basic education, roads with drainage systems, and solid waste management. Many slums are located in dangerous proximity to the shoreline and are highly vulnerable to environmental hazards and climate change induced flooding. Dwellings are generally in poor condition with palpable evidence of physical deterioration, lack of indoor sanitation and cooking spaces – and in some cases, half-completed units must suffice as a roof over a family's heads.

Various urban renewal programmes have been attempted in the past, many of which adopted a top-down approach with poor community engagement.

IMPLEMENTING AGENCY

Lagos State Urban Renewal Agency

SHOCKS

Forced Eviction; Economic Downturn; Disease Outbreak; Building Collapse

STRESSES

Overpopulation/ Overcrowding; Unemployment and Underemployment; Formal- Informal Economic Contestation

STATUS

Strengthen

TIMELINE

Long-term

POTENTIAL PARTNERS

- Ministry of Works and Infrastructure
- Ministry of Physical Planning and Urban Development
- Mortgage banks
- Real Estate Developers
- The Nigerian Slum and Informal Settlement Federation

NEXT STEPS

3 months: Convene a multi-stakeholder workshop to determine the fundamentals of the slum upgrading and renewal policy.

6 months: Establish partnership with private real estate developers/investors to implement a pilot programme in a selected community.

1 year: Begin implementation of policy and piloting of programme in a selected community.

RESILIENCE BENEFITS

An urban upgrading and renewal policy will provide a clear template as to how development and redevelopment of low-income communities should be undertaken. It will safeguard vulnerable communities from the threat of forced evictions, and will set a clear template for developers regarding resettlement, compensation, and global best practices relating to urban upgrading and renewal. The community-led approach from design to implementation will also foster greater community ownership and investment.

RESILIENCE DRIVERS

Meets Basic Needs; Supports Livelihood and Employment; Promotes Cohesive and Engaged Communities; Fosters Economic Prosperity; Ensures Continuity of Critical Services; Empowers a Broad Range of Stakeholders; Fosters Long-Term and Integrated Planning.

THEMES

Making Lagos a 21st Century Economy; Health and Environment.

SDGs



INTERNATIONAL CASE STUDY: BAAN MAKONG, THAILAND

In the 1970s, there was a rapid increase in the population of informal settlements in Thailand. Municipal governments initially resorted to demolition and eviction without resettlement. Due to strong opposition from various organisations, in the 1980s the government began a new programme aimed at relocating residents of informal settlements to housing provided on the outskirts of municipalities. This programme, however, was not tenable due to low employment opportunities that forced many of the residents to move back to their original settlements (Boonyabancha, 2005). Between 1990 and 2012, Thailand experienced an economic boom that saw its GDP per capita increase by over 200%, resulting in a drastic decline in poverty rates (World Bank, 2014). This created an avenue for the government to establish the Community Organisations Development Institute (CODI) as merger between the Urban Community Development Organization (UCDO) and the Rural Fund for Development (RFD) – two agencies established with the mandate of solving challenges surrounding informal settlements. In 2003, the Baan Mankong (“secure housing”) programme was introduced under CODI as a community-driven slum upgrading project, in response to calls for more pro-poor policies (Bhatkal and Lucci, 2015). The main objective of the programme is to establish a functional system for slum-upgrading that entails co-production of knowledge and interventions.⁴⁷

APPLICABILITY TO LAGOS

There are two overarching principles from the Baan Makong programme that are applicable to Lagos:

- **Community-driven slum upgrading:** Baan Makong has proven to be an adaptable community-driven programme that enables residents of any informal settlement to be involved by placing slum dwellers at the centre of the process and to tailor the development to their specific needs. The residents of Lagos' slums should be closely involved with the design, implementation, and management of new systems.
- **Institutional and Financial Capacity:** Baan Makong delivers flexible slum upgrading led by CODI which consists of coordination committees at city level that have representatives from communities, municipal agencies, landowners and tenant groups. For Lagos, there will be a need to create an agency like CODI which will be responsible for bringing all these stakeholders to the same table to achieve common goals. Public-Private-People-Partnership (4Ps) is a viable financial structure for the Lagos upgrade initiative. However, strong public sector leadership is necessary, as highlighted in the case of Thailand.

47 Bhatkal, T. and Lucci, P., 2015. “COMMUNITY DRIVEN DEVELOPMENT IN THE SLUMS: Thailand's experience.” ODI.
Boonyabancha, S., 2005. “Baan Mankong: going to scale with 'slum' and squatter upgrading in Thailand.”
CODI, 2014. Progress Report of Baan Mankong, September 2014. Bangkok: Community Organizations Development Institute.
World Bank, 2014. “World Development Indicators.” Washington, DC: World Bank.
Nadkarny, S. and Anderson, M., 2010. Slum upgrading in Thailand: CODI.
Santosa, H., n.d. The Structural Forms and Construction of Informal Housing.
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PILLAR 2

ENTERPRISE CITY

A CITY THAT HARNESSSES ITS HUMAN AND NATURAL ASSETS CAN BUILD A THRIVING AND ADAPTIVE ECONOMY. LAGOS CAN LEVERAGE ITS GEOGRAPHIC LOCATION, THE SIZE OF ITS POPULATION, AND THE ROBUSTNESS OF ITS FORMAL AND INFORMAL ECONOMY.

GOAL

1

SUPPORT INDIVIDUAL AND COLLECTIVE ENTREPRENEURSHIP AS A DRIVING FORCE FOR INNOVATION AND DEVELOPMENT



THE STATE'S GROSS DOMESTIC PRODUCT (GDP) GREW TO US\$136 BILLION IN 2018 FROM US\$90 BILLION IN 2014, WHEN IT WAS ALREADY THE SEVENTH LARGEST ECONOMY IN AFRICA.⁴⁷

Lagos accounts for over 60% of industrial and commercial activity in Nigeria and it generates the highest internal revenue of all states in the country. The bulk of its GDP comes from manufacturing, transport, construction, wholesale, and retail. There is also a thriving informal economy across the city, employing 68% of the working population and contributing approximately N9.87tn to the economy,⁴⁸ which is not captured in the GDP estimates. Lagos has an ease of doing business score of 86.3, significantly higher than the national score of 56.9.⁴⁹

Despite its strong economic base, Lagos has been unable to keep pace with rapid urbanisation and associated

impacts on social welfare, infrastructural development, and environmental development.

To ensure that the economy continues to grow, there must be an enabling environment for small business to thrive. The average interest rate for loans available to businesses from domestic banks is 23%. This is very high and is mostly unavailable to MSMEs, thereby driving up production costs and limiting productivity.⁵⁰ In addition, the economy must continue to diversify and innovate, leveraging the power of the informal economy and the organic development of the tech industry and the creative sector.

The following initiatives aim to improve the potential of small businesses to scale up, decentralise economic development spatially and across sectors, and reduce the State's vulnerability to economic shocks and stresses.

⁴⁸ Heinrich Böll Foundation Nigeria & BudgetIT. 2017. "Lagos' Informal Sector, Taxation & Contribution to the Economy," https://ng.boell.org/sites/default/files/uploads/2017/02/budget_final_report_30.117.pdf.

⁴⁹ <https://www.doingbusiness.org/content/dam/doingBusiness/country/n/nigeria/NGA.pdf>.

⁵⁰ Nwagwu, I. & Oni, T. 2015. "Lagos and Its Potentials for Economic Growth," <https://ng.boell.org/2015/07/02/lagos-and-its-potentials-economic-growth>.

STRENGTHEN THE LAGOS STATE EMPLOYMENT TRUST FUND TO SUPPORT JOB CREATION

IN BRIEF Expand the activities of Lagos State Employment Trust Fund by scaling up its capacity to provide funding support to MSMEs and start-up businesses; providing business development services and technical assistance to the businesses supported; and assisting in preparing MSMEs with high potential for expansion and enabling them access impact investment funds. This will further promote and sustain entrepreneurship and employment through effective use of wealth creation strategies. The initiative will position LSETF to secure additional funds through:

1. Engaging in research to quantify the impact of the existing fund (revenues of start-ups, jobs created, sectors, geographies from which entrepreneurs come from, geographies of the businesses, demographics served, etc.); and identify the barriers and challenges faced by entrepreneurs tapping into the fund.
2. Landscape mapping of local, national, and international funders.
3. Cultivation of funders.

RESILIENCE CHALLENGE Access to loans for start-up businesses and MSMEs is poor, and there is a persistent scarcity of single-digit interest loans. Lagos State lacks a platform to identify and prepare high-growth potential small businesses to access opportunities for expansion in the impact investment sector.

IMPLEMENTING AGENCY

Lagos State Employment Trust Fund

SHOCKS

Economic Downturn

STRESSES

Unemployment And Underemployment; Formal- Informal Economic Contestation

STATUS

Strengthen

TIMELINE

Medium-term

POTENTIAL PARTNERS

- Ministry of Women Affairs and Poverty Alleviation
- Ministry of Wealth Creation and Employment
- Local Philanthropic Organisations
- Private Corporate and Financial Institutions
- Federal Government Agencies Such as National Economic Reconstruction Fund, Small and Medium Enterprises Development Agency of Nigeria, Etc.

NEXT STEPS

3 months: Commission evaluation study to determine impact and gaps in the current model.

6 months: Identify potential funders and other sectoral partners.

1 year: Establish partnerships with funders and design new operational model to accommodate extended responsibilities.

Furthermore, there is a high percentage of youth not in work, education, employment, or training. Conversely, many employers complain of applicants lacking requisite skills for available jobs. This requires an urgent intervention, particularly in capacity-building for job-specific skills, and in creating a new pathway to education that is industry-driven and career-oriented.

The Lagos State Employment Trust Fund (LSETF) was established in 2016 to provide financial support to residents of Lagos State for job and wealth creation, and to tackle unemployment. LSETF focuses on promoting entrepreneurship by improving access to finance, strengthening the institutional capacity of MSMEs, and formulating policies designed to improve the business environment in Lagos State. In addition, LSETF develops programmes designed to train and place unemployed Lagos residents in jobs, while also focusing on programmes designed to drive innovation. Since 2016, LSETF has provided loans and training to over 12,000 beneficiaries, creating a total of 96,142 direct and indirect jobs. Its N250-billion launch grant from the Lagos State Government has been boosted via additional funding from various sources including donor partners, development agencies, corporate organisations, and individuals. However, this intervention does not sufficiently address the 14.6% unemployment rate, which requires a response at scale.

RESILIENCE BENEFITS

LSETF will improve the potential of small businesses to scale up and access funding for expansion and will provide on-demand skills training for youth, which will assist in addressing unemployment and sustainable livelihood challenges in the State.

RESILIENCE DRIVERS

Supports Livelihood and Employment; Fosters Economic Prosperity

THEMES

Making Lagos a 21st Century Economy

SDGs



Craft Welding (Master Craftsmen)



Craftsmen at work during road construction project

BOX 3: LAGOS STATE EMPLOYMENT TRUST FUND (LSETF)

The Lagos State Employment Trust Fund (LSETF) was established by the Lagos State Employment Trust Fund Law (2016) to provide financial support to residents of Lagos State for wealth creation and to tackle unemployment. LSETF focuses on advancing entrepreneurship through improved access to finance, strengthening the institutional capacity of micro, small, and medium-scale enterprises (MSMEs), and formulating policies designed to improve the business environment in Lagos State. Furthermore, the fund is mandated to develop programmes designed to train and place unemployed Lagos residents in jobs. This fund seeks to meet the basic needs of enterprising Lagos residents, support livelihoods and foster economic prosperity. The establishment of this fund creates a mechanism to arrest unemployment, underemployment, and the impact of economic downturn. Since its inception, Lagos State Employment Trust Fund has supported a total of 16,365 individuals under the entrepreneurship, employability, and Lagos Innovates programmes. LSETF made loans to 10,865 beneficiaries totalling N6.89 billion, while 5,403 people received training and employment under the employability programmes. Beneficiaries of various LSETF programmes have created 96,660 new jobs.

ESTABLISH AT LEAST ONE INNOVATION AND INCUBATION HUB IN EACH OF THE 57 LOCAL GOVERNMENT AND LOCAL COUNCIL DEVELOPMENT AREAS



Incubation Hub in Lagos

IN BRIEF Strengthen the capacity of Lagos residents to launch innovative business products and services by establishing one Innovation/Incubation hub in each LGA/LCDA in Lagos. This will provide an environment in which technology and other innovative ideas can be nurtured and curated for industry uptake. The hub will be administered in partnership with knowledge institutions and private sector partners to provide necessary technical support. The first phase of establishing hubs will focus on vulnerable and spatially isolated communities where no hub exists.

RESILIENCE CHALLENGE Innovative ideas and start-up businesses are often hindered by various challenges, including poor access to finance, erratic power supply, poor internet connectivity, inadequate access to laboratory equipment, poor access to markets, lack of enabling skill development and business

mentoring environment, and misalignment with knowledge institutions. Lagos Innovates is a series of programmes designed by LSETF for the benefit of technology and innovation-driven start-ups. The programme partners with existing workstations or hubs to facilitate access to high-quality workspaces, learning, investment capital, investor networks, and peer networks. However, many of these workspaces are located in the central areas of Lagos – Ikeja, Victoria Island/Lekki and Yaba – so that people in areas such as Ikorodu and Ejigbo have limited access. Innovation and incubation centres need to be established across the city, starting with areas where there are none, to support the emergence of innovative start-ups which would have significant impact on social and economic development in Lagos State.

IMPLEMENTING AGENCY

Lagos State
Employment Trust Fund

SHOCKS

Economic Downturn;
Riot and Civil Unrest

STRESSES

Unemployment and Underemployment;
Formal-informal Economic Contestation;
Erratic Power Supply

STATUS

Initiate

TIMELINE

Medium-term

POTENTIAL PARTNERS

- Local Government and Local Council Development Areas
- Ministry of Wealth Creation and Employment
- Ministry of Commerce, Industry, and Cooperatives
- Ministry of Science and Technology
- Innovation and enterprise development networks

NEXT STEPS

3 months: Establish pilot design and process for managing the hubs.
6 months: : Identify and establish partnerships with development organisations, funding and training partners and five LGAs/LCDAs for pilot roll out.

1 year: Roll out pilot scheme in five LGA/LCDAs, with phasing plan for extension to the other LGAs/LCDAs.

RESILIENCE BENEFITS

This initiative will promote decentralised economic development spatially and across sectors. It will increase ideation prototyping of creative, innovative products and entrepreneurship at the community level in a conducive and collaborative environment. This will contribute to the development of the innovation ecosystem in Lagos, provide a platform for youth empowerment and skills development, and serve as a feeder for potential funding projects of the LSETF.

RESILIENCE DRIVERS

Supports Livelihood and Employment; Promotes Cohesive and Engaged Communities; Fosters Economic Prosperity

THEMES

Education and Technology;
Making Lagos a 21st Century Economy

SDGs



BOX 4: LAGOS INNOVATES PROGRAMME

As part of its commitment to strengthen technological innovation and entrepreneurship among Nigerian youth, the Lagos State Government and the Lagos State Employment Trust Fund launched a “Lagos Innovates” programme in 2018. Designed to provide mentorship and funding support for tech start-ups, Lagos Innovates facilitates access to high-quality workspaces and infrastructure, learning opportunities, early stage investment capital, investor networks, and peer networks. Through these, the scheme seeks to enhance Lagos’ position as the leading destination for tech start-ups in Africa. The scheme is implemented with support from local partners including Capital Square, Cranium One, Headspace, ReDahlia, Venus Hub, Workstation, Seedspace, etc. 97 entrepreneurs have received workspace vouchers under the Lagos Innovates programme since its inception. The scheme increases the city’s resilience by providing access to more opportunities and jobs for its residents in the medium to long-term, helping to meet basic needs, support livelihoods and employment, and foster the state’s economic prosperity and social stability.

INTERNATIONAL CASE STUDY: ATAL INCUBATION CENTRES, INDIA

The Atal Innovation Mission (AIM) is a flagship initiative set up by the National Institution for Transforming India (NITI) Aayog. The institution is chaired by the Prime Minister with Chief Ministers from each state as members. AIM was established as part of an initiative to support the generation of incubation centres, referred to as Atal Incubation Centres (AICs), and to foster the growth of innovative start-ups in a bid to make them stable business enterprises. Applicants seeking to establish an Incubation Centre must apply to NITI Aayog and, if successful, must provide at least 10,000 square feet of space for the exclusive use of the AIC. In return, AIM provides a grant of up to ₹1,000,000 of financial support for capital and operational expenditures to assist the establishment of the incubation centres for up to five years – as it is expected that each centre will achieve self-sufficiency after that point. In addition to the financial grant, AIM provides the incubation centres access to sector experts for mentoring, business planning support, access to seed capital, industry partnerships, training, and a platform to link to other AICs. Incubation centres are flexible: depending on the applicants, they can either be public, private, or public-private partnerships; and they can be established in academic institutions such as universities or schools of technology, or non-academic institutions (companies, individuals, etc).⁵¹

APPLICABILITY TO LAGOS

Lagos State has an initiative to develop at least one innovation and incubation hub in each of the 20 LGAs and the 37 LCDAs in the State. The proposed initiative can benefit from the following:

- Encouraging incubation centres to be set up in academic institutions such as the University of Lagos (UNILAG) or Lagos State University (LASU). This will enable Lagos to develop a programme similar to India's, that encourages the growth of start-ups within a research-based environment where ideas can be further developed. Setting up an incubation centre within LASU, for example, has the advantage of also expanding the alliance and co-creation opportunities towards the Badagry axis. Further developments could then be targeted at public-private partnerships with an academic institution such as the Pan-Atlantic University, which will extend the incubation reach towards the Ibeju Lekki-Epe axis.
- Providing incentives for growth for the already established incubation centres. As noted in the ingredients of success, the AICs had opportunities to grow into established incubation centres that receive more funding from AIM to scale up. The provision of incentives will drive start-ups not only to achieve scale, but also to create employment opportunities.

Though AIM is a national programme, innovation hubs can be promoted on a smaller scale, such as by state or city. Lagos can look specifically at what support can be provided to incubators, e.g. physical space, infrastructure, technology support, mentors, preferential business loans, access to investors, networking, and other resources that may be needed for the start-up to survive and scale. One challenge will be access to finance to support a small-scale entrepreneurial incubation programme. Lagos can look to provide a blend of finance/grant funding for these hubs through partnering with federal government, academic institutions, the private sector, or development organisations.

⁵¹ <https://yourstory.com/2018/02/incubators-for-indian-startups/>;
<https://www.clearias.com/niti-aayog-think-tank-replace-planning-commission/>;
<http://aim.gov.in/atal-incubation-centres.php>;
<http://healthyindiachronicle.in/atal-innovation-mission-aim/>;
<https://www.doingbusiness.org/en/data/exploreeconomies/nigeria>;
<https://www.nasscom.in/knowledge-center/publications/start-report-momentous-rise-indian-start-ecosystem>.

GOAL

1

INITIATIVE

3

UPGRADE MARKET INFRASTRUCTURE



Trading in Adebayo Market, Bariga

IN BRIEF Support the planning, redevelopment, reorganisation, and provision of relevant infrastructure in Lagos' traditional markets. This will entail the development of a "Market Upgrading Fund" that developers can access at significantly lower interest rates for collaborative redevelopment, reorganisation and upgrading of market facilities across the city. The initiative will leverage traders' associations to operationalise Public-Private-People-Partnership (4Ps) for collaborative decision-making regarding the redesign, redevelopment and management of the markets as well as planning for electricity, water, parking, security, sanitation, and disabled access. This will significantly reduce market vulnerability to fires, as well as secure the livelihoods of local business men and women.

RESILIENCE CHALLENGE There are over 300 local markets in Lagos catering to the population by selling a wide range of items including construction materials, household items, food, groceries, and fabrics. However, many of these markets are unstructured and disorganised, lacking basic infrastructure and vulnerable to fires and other environmental hazards. The emergence of shopping malls in previous market locations does not adequately address the traditional and cultural functions of local markets. Markets are central to the local economy in that they support local livelihoods and provide easy access to affordable day-to-day items for Lagosians. However, efforts to reorganise local markets are encumbered by the high costs of accessing funds for construction, non-inclusion of market operators and traders in market redesign and redevelopment, as well as current challenges in operationalising Public-Private-Partnership in Lagos.

IMPLEMENTING AGENCY

Ministry of Local Government and Community Affairs

SHOCKS

Forced Eviction; Urban Fires; Flooding and Severe Storms

STRESSES

Overpopulation and Overcrowding; Formal-Informal Economic Contestation; Traffic Congestion; Inadequate Physical and Social Infrastructure

STATUS

Initiate

TIMELINE

Medium-term

POTENTIAL PARTNERS

- Ministry of Physical Planning and Urban Development
- Ministry of the Environment and Water Resources
- Lagos Waste Management Authority
- Ministry of Commerce, Industry, and Cooperatives
- Local Governments and Local Council Development Areas

NEXT STEPS

3 months: Develop template for market infrastructure redesign/redevelopment and criteria by which developers can access the Market Upgrade Fund in partnership with market traders.
6 months: Develop fund mobilisation plan and engage potential funders, in partnership with Market Boards and associations.
1 year: Identify the pilot market sites and potential developers.

RESILIENCE BENEFITS

This initiative will reduce the state's vulnerability to shocks arising from market displacements, fire outbreaks, and associated civil unrest due to residents' protests. Formal-informal economic contestations will also be effectively managed by the adoption of the targeted socially inclusive 4Ps model. By upgrading the markets, incidents such as flash flooding and storm damage will be mitigated. This initiative will also protect the culture of the city's commercial spaces. In addition, the initiative will help to build a community of practice among responsible business partners by ensuring that only developers who commit to "inclusive" business practices can access funds.

RESILIENCE DRIVERS

Supports Livelihood and Employment; Fosters Economic Prosperity; Promotes Cohesive and Engaged Communities; Provides and Enhances Natural and Man-made Assets; Empowers a Broad Range of Stakeholders; Fosters Long-term and Integrated Planning

THEMES

Making Lagos a 21st Century Economy; Health and Environment

SDGs



ESTABLISH AN INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) VILLAGE THAT WILL INCORPORATE THE CURRENT COMPUTER VILLAGE



View of Computer Village Ikeja

IN BRIEF The establishment of a dedicated commercial space that accommodates various activities along the technology value chain, creating another nucleus for development and economic opportunities. This ICT Village will have the industry-specific infrastructure to enhance the buying, repair, and maintenance of technological equipment. It will also offer ancillary facilities including hotels, bureaux de change, and translation services, as well as access to adequate public transportation to meet the needs of travellers from across Africa. The process of establishing the new village, and the transition from the existing location to the new location, will be carried out in collaboration with stakeholders, including those in the current Computer Village. The ICT logistics landscape will also be expanded to accommodate the access challenges that may accrue from the relocation of the village.

RESILIENCE CHALLENGE The city's current computer village is Africa's largest computer hardware market with over 3000 MSMEs generating about US\$2 billion to the economy annually. The market is an important part of the local tech ecosystem and is a critical source of employment. It is not located in a dedicated market space, but in a residential neighbourhood that gradually transformed into a commercial entity, depleting the housing stock in the area. It is largely informal and operates in disorganised, cluttered conditions, causing traffic and other infrastructure challenges to the Ikeja Central Business District area. There is therefore an urgent need to relocate the market to a geographic location that is more conducive to these specialised commercial transactions and the organised agglomeration of technology businesses and consumers.

IMPLEMENTING AGENCY

Ministry of Physical Planning and Urban Development

SHOCKS

Economic Downturn; Building Collapse; Riots and Civil Unrest

STRESSES

Formal-informal Economic Contestation; Traffic Congestion; Overpopulation and Overcrowding; Inadequate Physical and Social Infrastructure

STATUS

Initiate

TIMELINE

Medium-term

POTENTIAL PARTNERS

- Ministry of Commerce, Industry, and Cooperatives
- Ministry of the Environment and Water Resources
- Lagos State Safety Commission
- Ministry of Transportation
- Computer and Allied Products Dealers Association of Nigeria

NEXT STEPS

- 3 months:** Prepare phasing plan and engagement of stakeholders for development of relocation process.
- 6 months:** Identify potential developers and investors.
- 1 year:** Engage preferred funder and commence preliminary site works.

RESILIENCE BENEFITS

The establishment of the dedicated ICT Village is a safe and inclusive solution that seeks to enable agglomeration of related services in a functional area. The initiative will reduce the state's vulnerability to shocks arising from market displacements and the associated civil unrest it could bring.

RESILIENCE DRIVERS

Supports Livelihood and Employment; Empowers a Broad Range of Stakeholders; Fosters Economic Prosperity; Promotes Cohesive and Engaged Communities

THEMES

Making Lagos a 21st Century Economy

SDGs



EXPAND THE MASTER CRAFTSMAN PROJECT



Craftsmen at work during road construction project

IN BRIEF The Master Craftsman Project is based on the National Vocational Qualification Framework designed by the National Board for Technical Education and the Nigerian Institute of Building. It is intended to address the dearth of adequately skilled workers in the construction industry: masons, carpenters, steel fabricators, plumbers, electricians, painters, joiners, tillers, etc. The project's target is to train 4,000 artisans over a period of four years in the following skills: masonry, furniture and carpentry, plumbing and pipework, electrical installations, and painting and decorating.

The initiative will involve strengthening the curriculum and learning environment, redesigning the curriculum to incorporate trade-specific and local cultural constraints, as well as standardising the training module for uptake by other institutional actors such as professional bodies.

RESILIENCE CHALLENGE There is a dearth of skilled workmanship on construction sites, especially artisanal workers. This is largely due to the fact that most of the existing training is through non-formal methods, lacking the rigour, standardisation, and structure of accredited training centres. There is also the added risk of poor competency affecting construction quality, contributing to the incidence of building collapse. Many contractors prefer to engage artisans from other West African countries, further exacerbating the local unemployment challenge. The Master Craftsman Project started in the year 2016 and has trained around 800 craftsmen so far. There has been a slow uptake from local artisans due to challenges in transitioning from the apprenticeship system to more structured, modular learning, and a certification process. There is still a huge task in scaling this project in various trades, as well as increasing the number of participating artisans for both the certification and recertification groups.

IMPLEMENTING AGENCY

Ministry of Housing

SHOCKS

Building Collapse; Economic Downturn; Urban Fires

STRESSES

Formal-Informal Economic Contestation; Unemployment and Underemployment;

STATUS

Strengthen

TIMELINE

Medium-term

POTENTIAL PARTNERS

- Ministry of Works and Infrastructure
- Ministry of Youth and Social Development
- Lagos State Employment Trust Fund
- Professional associations such as the Nigerian Institute of Builders, Nigerian Society of Engineers and the Nigeria Institute of Architects
- National Board for Technical Education

NEXT STEPS

- 3 months:** Evaluate existing programme, and identify gaps and opportunities for scaling up.
- 6 months:** Redesign syllabus to cover beginner, intermediate, and advanced training programs for up to six trades.
- 1 year:** Institutionalise certification process for artisans on Lagos project sites, and engage trainers.

RESILIENCE BENEFITS

The initiative will help to produce a pool of certified artisans and establish a protocol for continuous skills development in the construction sector. This will improve the quality of skilled manpower in the construction sector, which will in turn help to reduce time and resource wastage at construction sites, improve the quality of buildings, and ultimately reduce the incidents of building collapse. The initiative will also assist in securing local jobs.

RESILIENCE DRIVERS

Meets Basic Needs; Supports Livelihood and Employment; Fosters Economic Prosperity

THEMES

Making Lagos a 21st Century Economy

SDGs



POSITION LAGOS AS AN ATTRACTIVE AND OPEN CITY VALUING CULTURAL AND ENVIRONMENTAL ASSETS

Lagos State is blessed with a robust and rich culture, a great history and vast human and natural resources. Its geographic location, including 180 km of coastline, lagoons, and creeks, have potential for waterfront tourism.

In 2017, the tourism sector contributed US\$2.2 billion (N800 billion) to Lagos State's GDP.⁵³ However, to capitalise on this potential, Lagos' natural and built assets must not simply be cared for, but also harnessed and enhanced to attract domestic, regional, and international tourists. Young creatives must be nurtured and opportunities for employment in the

tourism sector expanded. Furthermore, climate responsive mechanisms must be adopted to protect the coastal assets and the city itself.

The following initiatives aim to enhance Lagos' heritage preservation, both built and natural, to increase the city's competitiveness as an entertainment tourism destination, and to reduce the State's vulnerability to shocks arising from food insecurity. Overall, these initiatives will improve economic prosperity while growing the city's domestic, regional, and international tourism potential.

BOX 5: LAGOS' CREATIVE ECONOMY

Lagos is a city where cultural traditions are socially assimilated. Lagosian social cultures include growing street arts scenes and galleries, *owambe* parties, and neighbourhood carnivals and festivals. These include the Fanti Carnival of Brazilian descendants, and traditional festivals such as Egungun and Oro, as well as the iconic Adamu Orisa Festival (Eyo masquerade). The Eyo festival is a unique Lagos Island tourist attraction, which displays the rich culture and traditions of the people of Isale Eko, and is used to honour royalty and distinguished guests, as well as a form of entertainment at special State functions. The rich culture of this festival supports livelihoods and employment, promotes social cohesion and heritage preservation, and brings together several communities in its planning and execution, while also attracting both local and international audiences.

The creative sector is also active with musical concerts, theatre and stage productions, and Lagos' thriving Nollywood film production and distribution facilities.



Eyo Masquerade, Lagos Island

⁵³ Akinsanmi, G. 2018. "Ambode: Tourism Contributed N800bn to Lagos GDP in 2017 (N364/\$)." <https://www.thisdaylive.com/index.php/2018/04/17/ambode-tourism-contributed-n800bn-to-lagos-gdp-in-2017/>.

GOAL

INITIATIVE

2

1

STRENGTHEN THE CREATIVE SECTOR IN LAGOS BY ESTABLISHING A FILM VILLAGE



Film making

IN BRIEF Establishment of a film village that will be the preferred African destination for all media and creative economy activities. It will have various facilities, studios, and stages for shoots and production across various media platforms. It will also have a state-of-the-art film academy with appropriate facilities for the delivery of new knowledge in film directing, digital media production, screenwriting, cinema studies, and the entire value chain of the industry.

RESILIENCE CHALLENGE Nollywood is Nigeria’s creative ecosystem, globally recognised as the world’s second largest movie production centre; it generates up to US\$590 million annually. However, Nollywood is largely informal and unstructured, producing low-budget productions marred by poor lighting and sound. Most of the higher-quality films are being shot abroad, due to a paucity of professionally managed film sets and related facilities. The establishment of a film village incorporating a film academy, will provide an opportunity to develop operational and logistic support, relevant supporting infrastructure, and a training centre for the spectrum of activities in the creative industry.

IMPLEMENTING AGENCY	POTENTIAL PARTNERS	RESILIENCE BENEFITS	RESILIENCE DRIVERS
Ministry of Tourism, Arts, and Culture	<ul style="list-style-type: none">Private Sector Entertainment Corporations and InvestorsNigerian Film Corporation, Actors and Film Producers Guild, and other creative economy associationsLagos State Centre for Arts and CultureNational Film and Video Censors Board	Lagos is the epicentre of entertainment in Nigeria. The Film Village and Academy will leverage this advantage as a pull factor for tourism to the State, with attendant economic benefits. Furthermore, the film academy will be instrumental to producing trained professionals in the creative sector, increasing the city’s competitiveness as an entertainment tourism destination. In addition, this initiative will promote engaged and cohesive communities, and foster economic prosperity and social stability.	Promotes Cohesive and Engaged Communities, Fosters Economic Prosperity
SHOCKS			THEMES
Economic Downturn			Entertainment and Tourism, Education and Technology
STRESSES			SDGs
Unemployment and Underemployment; Formal-Informal Economic Contestation			
STATUS			
Strengthen			
TIMELINE			
Medium-term	<p>NEXT STEPS</p> <p>3 months: Convene a workshop of the creative industry to determine the priorities of the creative economy and fundamentals of the Film Village.</p> <p>6 months: Identify potential partners and investors.</p> <p>1 year: Complete the business model and identify the land area for the project.</p>		

GOAL

INITIATIVE

2

2

PROMOTE SUSTAINABLE WATERFRONT TOURISM TO IMPROVE LIVELIHOOD IN COASTAL COMMUNITIES



Coastal Community along Badagry Beach

IN BRIEF The initiative will involve the development of a coastal zone management plan and improvement of the coastal flood defence system through infrastructure provision and maintenance. Small-scale projects will be conceptualised and implemented, in collaboration with local littoral communities, to protect natural environmental assets, enhance local livelihoods, and promote the tourism potential of the communities. These locations will be influenced by prevailing natural, ecological, and heritage resources, contributing to the enhancement of Lagos’ heritage preservation, both built and natural. Local communities will also develop small outlets for the sale of local crafts and foods, and will offer hospitality services to tourists.

RESILIENCE CHALLENGE Climate change has had an adverse effect on local economic development in many coastal communities. Various physical development plans have zoned some of these coastal communities for tourism and recreation. Some communities are able to harness the tourism potential of their beachfront areas, though mostly in an unstructured, informal manner. However, coastal erosion, ocean surges, flooding, and spatial displacements are recurrent threats. There is an urgent need for integrated coastal zone management that enhances tourism potential and the local economic development prospects of coastal communities.

IMPLEMENTING AGENCY	POTENTIAL PARTNERS	RESILIENCE BENEFITS	RESILIENCE DRIVERS
Ministry of Waterfront Infrastructure Development	<ul style="list-style-type: none">Ministry of Tourism, Arts, and CultureLagos State Waterways AuthorityMinistry of Environment and Water ResourcesMinistry of Physical Planning and Urban DevelopmentPrivate sector developers	Local communities will optimise the economic impact of tourism through employment and service provision in hotels and resorts, local enterprises and craft production, collective community income including land rentals, and strong linkage to local agricultural and artisan fishing economies. This will be relevant to small aquaculture and peasant artisan fishing both on lagoons and on the inshore Atlantic Ocean continental shelf. Coastal defence mechanisms will mitigate the impact of coastal erosion and enhance fragile wetland conservation as either nature reserves or wetland sanctuaries.	Support Livelihoods and Employment; Promotes Cohesive and Engaged Communities; Empowers a Broad Range of Stakeholders; Fosters Economic Prosperity; Fosters Long-term and Integrated Planning; Ensures Continuity of Critical Services
SHOCKS			THEMES
Coastal Erosion; Economic Downturn; Flooding and Severe Storms			Entertainment and Tourism; Making Lagos a 21 st Century Economy
STRESSES			SDGs
Formal-informal Economic Contestation; Unemployment and Underemployment	<p>NEXT STEPS</p> <p>3 months: Convene a multidisciplinary workshop to develop a framework for integrated coastal zone management that accounts for community needs and environmental considerations.</p> <p>6 months: Identify private sector partners and host community for pilot tourism development project.</p> <p>1 year: Develop plan for installing coastal flood defence mechanisms to protect the shoreline of selected communities.</p>		
STATUS			
Initiate			
TIMELINE			
Long-term			

BOX 6: LEKKI CONSERVATION CENTRE (LCC)

The Lekki Conservation Centre (LCC) is an eco-tourist destination in Lagos established in 1990. It is widely acclaimed as the most significant nature wildlife conservation eco-tourism icon located in the southwest coastal environment of Nigeria. LCC is a flagship project of the Nigerian Conservation Foundation for the preservation of the unique biodiversity, scenic, natural, scientific, and recreational values of the coastal environs of the South western Nigeria. While enhancing natural and man-made assets, the LCC also supports livelihood and employment, promotes cohesion and engaged communities, and promotes effective management of natural resources.


**INTERNATIONAL CASE STUDY:
WATERFRONT TOURISM TO IMPROVE LIVELIHOOD IN COASTAL
COMMUNITIES IN ADA, GHANA**

The United Nations Environment Programme (UNEP), Global Environmental Facility (GEF), UNIDO, and UNWTO have worked together to develop the Collaborative Actions for Sustainable Tourism (COAST) initiative, with the aim of reducing the harmful impacts of tourism practices to the coastal ecosystems in Sub-Saharan Africa. In one initiative, COAST worked alongside the Ghanaian Government to promote eco-tourism in the town of Ada on the southeast coast of Ghana, where the Volta River meets the Atlantic Ocean. The project was developed with the primary objective of mitigating against the harmful impacts of tourism practices. It began in 2009 and was funded by the Global Environment Facility. The United Nations Environment Programme was the implementing agency and the executing agency was the United Nations World Tourism Organisation. The project covered a broad range of activities including training in visitor management for local staff, developing specific guide training for activities such as canoeing, expansion of marketing, and steps to improve local marine biodiversity, such as beach cleaning and turtle monitoring. The project engaged the local community in all activities, developing a community managed "point of sale" for tourists and involving locals in beach cleaning activities. The project also provided necessary equipment to help tourism start-ups such as bicycles and marketing materials.⁵⁶

APPLICABILITY TO LAGOS

Lagos can benefit in several ways from the implementation success of the eco-tourism project in Ada. Lagos has highlighted concerns around the unstructured and informal organisation of local tourism, as well as the physical stresses of costal erosion and threat of flooding and spatial displacement. The State has proposed an initiative to develop small-scale tourism destinations that will be influenced by ecological and heritage resources. The State's proposed initiative can benefit from the following:

- Focus on environmental conservation and protection of the natural habitat. This framework would also help Lagos, as it both benefits the tourism industry and mitigates against the physical threat of flooding and coastal erosion.
- Promote pro-poor tourism, so that the community gains from the new influx of tourists to the area. This was ensured by the training provided to locals and the support given by providing equipment such as bicycles, boats, and beach-cleaning equipment.
- Stakeholder participation through awareness raising activities at multiple levels, conservation training to government institutions, conservation and health and safety training to local tour guides and communication events in schools, etc.

⁵⁶ "Sustainable Coastal Tourism – An integrated planning and management approach," <http://www.unep.fr/shared/publications/pdf/DT1x1091xPA-SustainableCoastalTourism-Planning.pdf>. Accessed 21 September 2019.
"Sustainable Coastal Tourism in Ghana," https://brighton.ac.uk/_pdf/research/costals/fact-sheet-ghana2.pdf. Accessed 24 September 2019.

GOAL

2

INITIATIVE

3

REGENERATE FARM CENTRES AND EXPLORE URBAN AGRICULTURE OPPORTUNITIES TO STRENGTHEN FOOD SECURITY



IN BRIEF The initiative will entail the regeneration of established farm settlements and farm estates across the State for large-scale agriculture and agri-processing, as a deliberate approach to address the food security challenges in the city and establish jobs in the agricultural subsector. The farm estates and settlements will have industry-specific equipment and infrastructure to enhance agriculture and agri-processing activities in the State. The farm estates and settlements will be provided with ancillary facilities, including schools and business offices to meet the needs of farmers and explore opportunities for agriculture export trading, while encouraging the adoption of urban agriculture and its ensuing benefits in tackling food insecurity.

RESILIENCE CHALLENGE Population, limited land area, and climate change challenges expose Lagos to food vulnerability. According to the Food and Agriculture Organisation, food production in Lagos meets only 10 to 15% of local demand. Existing farm settlements and other agricultural lands grapple continuously with the pressures of urbanisation, attendant high levels of land use change from agriculture and housing, and employment attrition of peasant farmers to other informal sector activities, especially *okada* riding. Insecurity challenges in northern Nigeria have also disrupted the national food distribution chain, occasionally resulting in food shortages in the city.

IMPLEMENTING AGENCY	POTENTIAL PARTNERS	RESILIENCE BENEFITS	RESILIENCE DRIVERS
Ministry of Agriculture	<ul style="list-style-type: none">Ministry of Commerce, Industry, and CooperativesLands BureauAgricultural Land Holdings AuthorityFarmers cooperatives and associationsMultilateral agencies such as the Food and Agriculture Organisation	The regeneration of farm estates and settlements is a proactive and inclusive solution that seeks to enable agglomeration of related services in a functional area. The promotion of urban agriculture seeks to deploy simple methods of crop production, especially vegetable growing, to leverage limited spaces available within the metropolis. The combined initiative will reduce the State's vulnerability to shocks arising from food insecurity and associated civil unrest. The initiative has the potential to foster economic prosperity and promote cohesive and engaged communities for both farmers and urban dwellers whose collective enterprise will target local and foreign consumption.	Meets Basic Needs; Supports Livelihood and Employment; Protects Natural and Man-made Assets; Empowers a Broad Range of Stakeholders; Fosters Economic Prosperity.
SHOCKS	NEXT STEPS	THEMES	SDGs
Flooding and Severe Storms; Riots and Civil Unrest	<p>3 months: Establish studies on current status and potential of farm estates and urban farming approaches; develop modalities for agriculture and farmers' cooperatives' participation; and identify suitable land holdings for the establishment of new farm estates and settlements, including locations within the metropolis. 6 months: Procure equipment for agri-processing activities, engage stakeholders, and identify potentials farm produce up takers. 1 year: Commence farm operations.</p>	Making Lagos a 21 st Century Economy	
STRESSES			
Overpopulation and Overcrowding; Unemployment and Underemployment			
STATUS			
Strengthen			
TIMELINE			
Long-term			

GOAL

3

PREPARE YOUTH FOR A CHANGING ECONOMY

LAGOS HAS A YOUTHFUL POPULATION WITH AROUND 50% OF THE POPULATION UNDER 25 YEARS OF AGE.

Though the literacy rate is over 90% in Lagos, unemployment and underemployment pose an urgent challenge for the youth population (citizens aged 18-29). This is largely due to a lack of skill sets appropriate for the “Fourth Industrial Revolution” and emerging technology sector jobs. The Fourth Industrial Revolution is characterised by a fusion of technologies that are blurring the lines between the physical, digital, and biological spheres. These disruptive technologies and trends,

such as the Internet of Things, robotics, virtual reality, and artificial intelligence, are changing the way we live and work.

The entrepreneurial space is large and the potential immense. The city has the capacity to grow its economy through technology with the support of young people obtaining or creating jobs in all fields. The proposed initiatives aim to capitalise on the young population of Lagos by improving access to ICT education and ICT-enabled entrepreneurial activities across the State. Overall, these initiatives will support livelihoods and employment, foster economic prosperity, and lead to the creation of tech investors and entrepreneurs.

GOAL

3

INITIATIVE

1

BROADEN THE SCOPE OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN THE SCHOOL CURRICULUM



Government Secondary School Students' Ijilkin in a Classroom

IN BRIEF Launch a program to extend the scope of ICT in the school curriculum at primary and secondary school levels. This will entail equipping schools with functional computer laboratories, adequate internet facilities, and uninterrupted power supply. The initiative will also enhance the technical capacity of computer science teachers by providing opportunities for training and skills upgrades. Furthermore, the initiative will incorporate ICT into different parts of the entire curriculum, such as English, engineering, mathematics, and science.

RESILIENCE CHALLENGE There are many gaps in the current ICT curriculum in Nigeria. The global knowledge economy thrives on technology adoption and appropriation. Students, especially in public schools, lack access to equipment and learning facilities that are relevant to the ICT contexts of the day. Courses like coding and software development are yet to be included in the curriculum. There is a huge manpower deficit as the few ICT teachers in the school system are overstretched and lack opportunities for upgrading their skills. Many schools lack up-to-date computer laboratories, and internet facilities and access are insufficient.

IMPLEMENTING AGENCY	POTENTIAL PARTNERS
Ministry of Education	<ul style="list-style-type: none">Ministry of Science and TechnologyInformation Technology Subject Teachers AssociationNigeria Computer SocietyTechnology CompaniesMultilateral organizations, such as UNESCO
SHOCKS	NEXT STEPS
Economic Downturn	<p>3 months: Convene a workshop of education and technology stakeholders (schools, policy makers, and industry partners) to identify current gaps and determine the content and scope of an expanded ICT curriculum. 6 months: Identify and engage potential sponsors and funders of the ICT laboratories in schools. 1 year: Develop curriculum and identify selected schools for piloting the curriculum.</p>
STRESSES	
Unemployment and Underemployment; Formal-informal Economic Contestation; Inadequate Physical and Social Infrastructure	
STATUS	
Strengthen	
TIMELINE	
Medium-term	

RESILIENCE BENEFITS	RESILIENCE DRIVERS
The initiative will expand the scope of computer education in Lagos' schools. It will foster effective teaching and learning, and align the Lagos school system with international best practices, while preparing the students with the appropriate skill sets for employability and relevance in the 4 th Industrial revolution. It will also improve Science Technology Engineering and Mathematics education across the State and promote life-long learning through provision of ICT-based classrooms.	Empowers a Broad Range of Stakeholders; Supports Livelihood and Employment.
SDGs	THEMES
	Education and Technology; Making Lagos a 21 st Century Economy

GOAL

3

INITIATIVE

2

SCALE UP THE CODE LAGOS PROGRAMME



Adult ICT Programme

IN BRIEF The initiative entails expanding the CODE Lagos programme to feed into the development of a technology-enabled enterprise service sector for Lagos. This will be achieved through the design of an improved template for the current programme in order to ensure that the programme is fit for purpose and reaches a larger population in the city, especially the vulnerable and underserved. A post-training mechanism will also be integrated. This expansion will require extensive fund mobilisation for securing space in underserved areas and procuring equipment and other resources. This will entail:

1. Programme evaluation to determine the impact of the existing program, gain understanding of barriers and challenges faced by the participants in the programme, and potentials for expansion
2. Landscape mapping of funders and programme partners
3. Cultivation of funders

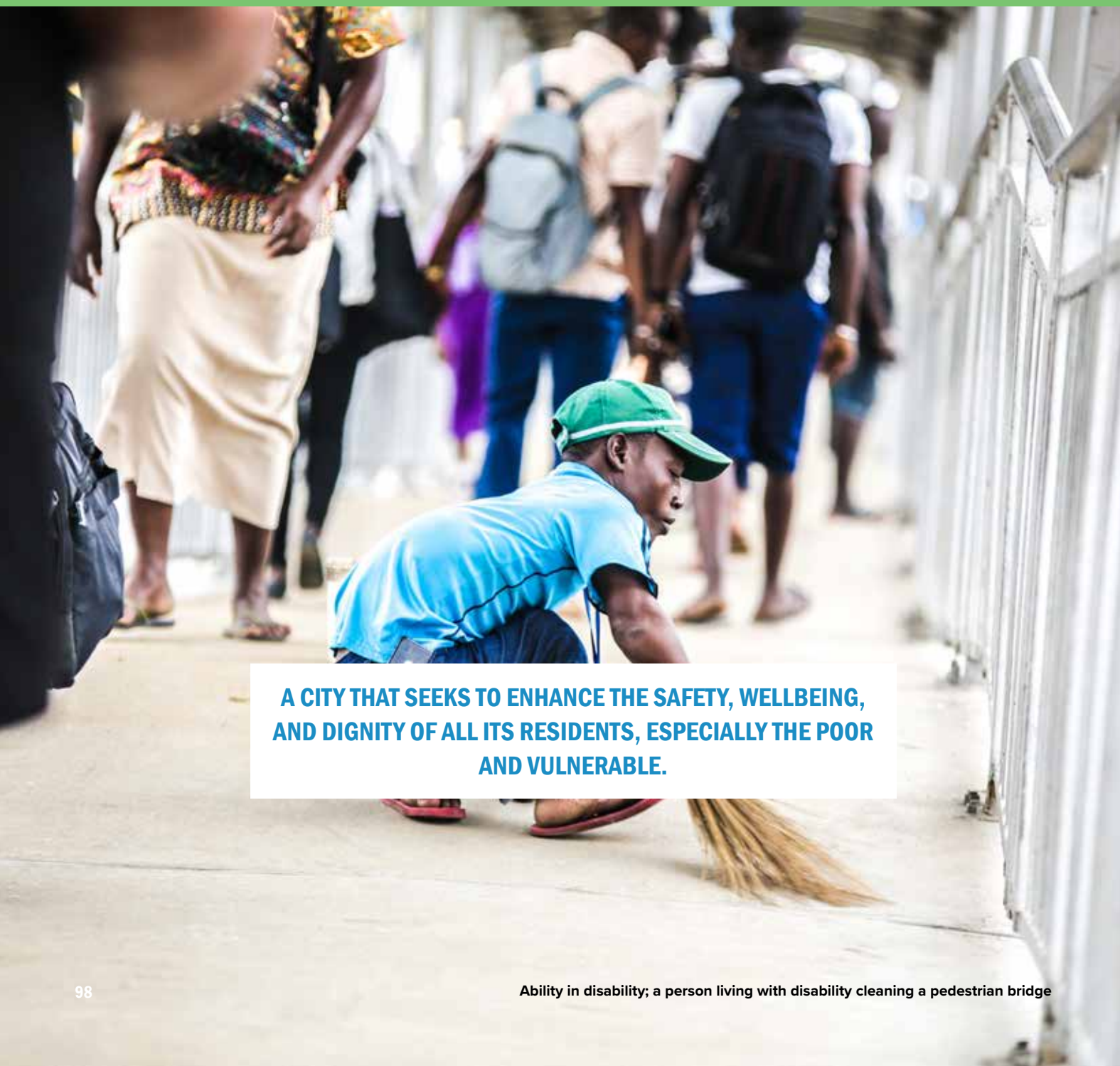
RESILIENCE CHALLENGE The 4th Industrial Revolution requires special skill sets such as digital literacy, coding, and software development. CODE Lagos is a Lagos State Ministry of Education initiative to bridge the digital literacy gap for residents in Lagos. It aims to train one million Lagos residents in coding by 2020. CODE Lagos is offered in 656 centres across the State (including schools), expanding the opportunity for producing an emerging sector of skilled technology workers. Competitions are also organised as part of the programme for students to use technology to address problems in several sectors, including health, education, transportation, environment, and finance. However, the non-school programme is not fully harnessed, as many areas of the State are still underserved. There is a need to expand the programme to more out-of-school centres in order to integrate them into the global technology economy and build a service sector, as well as strengthening the current school curriculum to incorporate coding and digital literacy.

IMPLEMENTING AGENCY	POTENTIAL PARTNERS
Ministry of Education	<ul style="list-style-type: none">Ministry of Science and TechnologyMinistry of Youth and Social DevelopmentTechnology companiesNGOsPrivate sector organisations
SHOCKS	NEXT STEPS
Economic Downturn	<p>3 months: Commission programme evaluation study. 6 months: Identify underserved areas of the State and target community programme locations for partnership and co-design of an improved programme template. 1 year: Establish partnerships with LSETF and international recruitment agencies to kick-start post-training support for programme alumni.</p>
STRESSES	
Unemployment and Underemployment	
STATUS	
Strengthen	
TIMELINE	
Medium-term	

RESILIENCE BENEFITS	RESILIENCE DRIVERS
Expanding the CODE Lagos programme provides an opportunity for employment creation in the technology-enabled sector. It presents an opportunity to train candidates for the global technology job market and create a cohort with skillsets that are fit for purpose. It will support livelihoods and employment, flexibility, creativity, and individual learning, as well as the creation of tech investors and entrepreneurs.	Supports Livelihood and Employment; Empowers a Broad Range of Stakeholders, Fosters Economic Prosperity
THEMES	SDGs
Education and Technology; Making Lagos a 21 st Century Economy	

PILLAR 3

INCLUSIVE CITY



A CITY THAT SEEKS TO ENHANCE THE SAFETY, WELLBEING, AND DIGNITY OF ALL ITS RESIDENTS, ESPECIALLY THE POOR AND VULNERABLE.

Ability in disability; a person living with disability cleaning a pedestrian bridge

GOAL

1

CREATE AN INCLUSIVE ENVIRONMENT FOR ALL CITY RESIDENTS

Lagos has a long history of migration. Today it is a metropolitan city with a mix of people from different countries, tribes, and ethnicities. This diversity is part of its strength. However, the high rate of population growth, coupled with attendant challenges of poor planning and overstretched infrastructure have resulted in deteriorating public infrastructure and reduced access to basic services. In an attempt to provide accurate data for government policy and planning, as well as integrate residents into e-government initiatives, the Lagos State Residents Registration Agency Bill was passed in June 2011 and the Lagos State Residents Registration Agency (LASRRA) established.

Even with the establishment of LASRRA, there is still a lack of up-to-date population data. Vulnerability is not captured by most data collection methods at both federal and state levels. Vulnerable people are identified in the Lagos State Strategic Development Plan as special categories of women, people made vulnerable by their health conditions, children with special health conditions and their caregivers, orphans, and homeless children. Other categories are people over 70 years old, and people displaced

within Lagos due to natural or man-made disasters.

One of the state laws that focuses on the vulnerable is the 2011 Lagos State Special People's Law, which seeks to uphold the rights of all individuals living with any form of disability in Lagos State by safeguarding them against all forms of discrimination and giving them equal rights and opportunities.⁵⁸ Though the law is comprehensive, implementation across different MDAs and the State at large has been slow.

The proposed initiative takes into account the current state of policies, plans, and actions taken by Lagos State Government, and intends to build on what already exists. The initiative will ensure that the health, social, and economic wellbeing of people living with disabilities are taken into consideration in subsequent decision-making on social policy formulation and development. This initiative will provide support for the Lagos State Government's plan to build a cohesive and resilient society that caters for disadvantaged groups, and thus inspire collaboration and social responsibility among citizens.

⁵⁸ Lagos State Government, <http://www.lasoda.org.ng/>.

SCALE UP IMPLEMENTATION OF THE LAGOS STATE SPECIAL PEOPLE'S LAW



Dedicated Car lot for Persons Living with Disability

IN BRIEF This initiative will evaluate the implementation of the Special People's Law to identify critical challenges so as to amplify current successes. It has the following components:

1. Strengthen the PLWD data collection capacity of the Lagos State Office for Disability Affairs (LASODA) by setting up a specialised information management unit within the Office.
2. Train personnel in public transportation, health, education, and other essential public services in proper treatment of PLWD and in promotion of the adaptation of services to fit their needs.
3. Involve LASODA in relevant projects of the Ministries of Physical Planning and Urban Development, Environment and Water Resources, Works and Infrastructure, and Housing, in order to ensure strict compliance with international best practices in the city's physical development.
4. Build more and strengthen existing vocational training centres to provide vocational and entrepreneurial skills for PLWD.

5. Structure the existing Disability Trust Fund to provide soft loans and business support services for entrepreneurs living with disabilities.
6. Continuous training for Social Welfare Officers and caregivers on proper handling and relations with PLWDs.

RESILIENCE CHALLENGE Persons living with disabilities (PLWD) face physical and economic challenges that decrease their ability to cope with everyday stresses and increase their vulnerability in times of shocks. For instance, a lack of safe pedestrian walkways exposes them to major road accidents, and a congested public transportation system decreases their mobility to employment centres, which could affect their ability to access economic opportunities and social services such as healthcare. A Special People's Law designed specifically for PLWDs has been in place for about six years in Lagos. There is a need to evaluate its implementation to ensure that the welfare of those it aims to protect remains a priority across key implementation agencies.

IMPLEMENTING AGENCY

Lagos State Office for Disability Affairs

SHOCKS

Economic Downturn;
Major Road Accidents

STRESSES

Inadequate Public Transport;
Unemployment and Underemployment;
Inadequate Physical and Social Infrastructure

STATUS

Strengthen

TIMELINE

Medium-term

POTENTIAL PARTNERS

- Ministry of Youth and Social Development
- Ministry of Women Affairs and Poverty Alleviation
- Ministry of Physical Planning and Urban Development
- Ministry of Health
- Ministry of Transportation

NEXT STEPS

6 months: Conduct capacity-building activities for social workers and related public service personnel.

1 year: Set up a specialised information management unit within LASODA. **1 year:** Develop a plan for the construction of inclusive vocational centres.

RESILIENCE BENEFITS

This initiative covers all disability clusters, in a bid to mitigate their vulnerability through well-enforced inclusive policies that will sufficiently improve their ability to cope with shocks and everyday stresses. This initiative will ensure that the health and wellbeing of PLWDs are taken into consideration in policy implementation.

RESILIENCE DRIVERS

Meets Basic Needs; Ensures Public Health Services; Provides Reliable Communication and Mobility; Empowers a Broad Range of Stakeholders; Fosters Long-term and Integrated Planning

THEMES

Health and Environment; Making Lagos a 21st Century Economy

SDGs



STRENGTHEN INFORMATION MANAGEMENT AND DISASTER PREPAREDNESS

Major disasters in Lagos include flooding, building collapse, disease outbreak, and fires. One of the most recent major disasters was the 2014 synagogue building collapse, where a crowded, six-storey guest house belonging to the Synagogue Church of All Nations collapsed, killing 86 people and injuring over 131. There have also been increasing occurrences of loss of life and property, exacerbated by lack of rapid response systems at the community level to predict and act in the event of floods.

To be able to deal with major disasters, Lagos State Government has developed a disaster management structure with the establishment of the Lagos State Emergency Management Agency and the Lagos State Safety Commission,

in collaboration with the police, traffic authorities, and health services. However, disaster management is still encumbered by challenges of capacity, equipment, and integration.

The initiatives intend to strengthen Lagos' resilience by enhancing citizen to government engagement, improving information dissemination, promoting rapid and equitable responses to emergencies, upgrading infrastructure, and improving management response capacities of first responders. This is in addition to enhancing the resilience and disaster preparedness of local communities through participatory flood management.

COMMUNITY PARTICIPATORY FLOOD MANAGEMENT



Sensitization of Iba LCDA's community members

IN BRIEF The purpose of this initiative is to proactively develop the capacity of local communities to predict and respond to flood occurrences, without necessarily waiting for government intervention. The focus action is to enable the government to invite community participation in the production and use of flood hazard maps, so that communities are better educated about the risks they face and are equipped with tangible solutions to prepare, respond, and recover when the floods occur. Communities will be organised around each of the 57 LGAs/LCDAs to implement this initiative. There are four components to this initiative:

1. Training communities to carry out comprehensive flood risk assessment
2. Co-producing comprehensive flood risk assessment with trained community members
3. Co-creating flood hazard plans including how to react to impacts
4. Accessing funds from the State Government and its partners to implement the flood hazard plans

IMPLEMENTING AGENCY

Ministry of the Environment and Water Resources

SHOCKS

Flooding/Severe Storms, Disease Outbreak

STRESSES

Inadequate Physical and Social Infrastructure, Traffic Congestion, Inadequate Health System

STATUS

Initiate

TIMELINE

Medium-term

POTENTIAL PARTNERS

- Ministry of Works and Infrastructure
- Lagos State Ministry of Physical Planning and Urban Development
- Lagos Waste Management Authority
- Community Development Associations
- 20 Local Government and 37 Local Council Development Areas.

NEXT STEPS

- 3 months:** Constitute multi-stakeholder working groups for each LCDA/LGA.
- 6 months:** Working groups to conduct rapid baseline assessment of communities in the LGA/LCDA to feed into the flood hazard plan.

RESILIENCE CHALLENGE Floods are particularly problematic for Lagos as the city is low-lying, with most of its land elevated less than 15 m above sea level. Incidences of higher than usual rainfalls reached an all-time high in 2012, resulting in loss of lives, livelihoods, properties, spread of waterborne diseases, and damage to infrastructure. The problem is worsened by improper waste disposal into open canals and drainages, inhibiting the flow of stormwater and causing flash floods that lead to traffic congestion. However, flood hazard management in Lagos has been focused on government-led engineering solutions, so that organised, proactive measures at the community level to pre-empt flash floods are limited. As a result, there are few mechanisms for communities to respond when flash flood occurs. Therefore human capacity and technical infrastructure to predict, prepare for, and manage the occurrence of sudden downpours need to be improved.

1 year: Commence training of communities to carry out comprehensive flood risk assessment.

RESILIENCE BENEFITS

This initiative advances the fusion of community-based ecological solutions with current engineering solutions. It will ensure rapid response to emergencies that often follow heavy downpours and increase the State's resilience to impacts of floods. By training communities to co-create and implement flood assessment plans, this initiative will encourage a shift from the existing reactive approach to a more proactive approach in flood hazard management in Lagos.

RESILIENCE DRIVERS

Promotes Cohesive and Engaged Communities; Empowers a Broad Range of Stakeholders; Fosters Long-term and Integrated Planning; Provides and Enhances Natural and Man-made Assets; Ensures Continuity of Critical Services

THEMES

Health and Environment; Traffic Management and Transportation

SDGs



INTERNATIONAL CASE STUDY: COMMUNITY PARTICIPATORY FLOOD MAPPING, RAMANI HURIA, TANZANIA

Ramani Huria is a community mapping project that began in 2015. Based in Dar es Salaam, Ramani Huria works with local university students and community members to create maps used in flood risk management. It is funded through the Tanzania Urban Resilience Program (TURP), and is a partnership of local universities, community groups, the World Bank, the Global Facility for Disaster Reduction and Recovery (GFDRR), Data Zetu, Humanitarian OpenStreetMap, and the Red Cross. Data collected through Ramani Huria describes infrastructure (locations of houses, waterways, roads, and drains) and populations living in flood-prone areas. Historical inundation extents are also mapped to identify high-risk areas and changes in flood extent over time. To date, the project has mapped approximately 750,000 buildings over 3,000 km of roads and 1,250 km of waterways within Dar es Salaam. The Ramani Huria team uses this information – along with data describing the urban drainage network – to develop detailed flood risk models that help predict future flooding, using a free software called InaSAFE developed by the World Bank, the Australian Government, and the Indonesian National Board for Disaster Management (BNPB).

APPLICABILITY TO LAGOS

Community-based risk mapping can be an effective and relatively low-cost supplement to large-scale disaster risk mitigation efforts. While community participation in the production and use of flood hazard maps should not replace the role of government in planning and implementing flood mitigation measures, community participation can increase local capacity for disaster mitigation and response. Specifically, partnerships between academic institutions, local government, community organizations and non-profits can provide technical support to community-based initiatives for flood mapping. International non-profits such as Red Cross and OpenStreetMap have valuable experience and technical insights that could be shared. Local universities can work with community organisations and/or through Local Council Development Areas (LCDAs) and Local Governments while consulting with state-level government agencies. Another key lesson from the Dar es Salaam case study is the importance of using free and open-source software that can be adopted by all project partners. These include free data collection (KoBo Toolbox), mapping software (QGIS), and modelling software (InaSAFE) that can be employed without licences by students and community residents. Where additional data is needed for detailed hydrologic modelling, technical inputs can be provided through partnerships with state-level agencies such as LASEMA, and national-level agencies such as the Nigerian Meteorological Agency (NIMET) or the National Emergency Management Agency.

STRENGTHEN THE STATE'S EMERGENCY RESPONSE SYSTEM



Fleet of Ambulance Vehicles procured by Lagos State Government

IN BRIEF This initiative will support the expansion of emergency response systems and increase public awareness about the facility. Its components are::

1. Intensify public campaigns to raise awareness of the emergency toll-free hotlines (767/112)
2. Equip all arms of emergency service units with state-of-the-art equipment to enhance the capacity of the units to provide on-site relief and evacuation where necessary
3. Build the capacity of emergency response personnel in on-site relief, evacuation, and other functional areas
4. Develop an e-platform that integrates all emergency services and deploys first responders more effectively

5. Constitute local emergency management committees across all Local Government and Local Council Development Areas

RESILIENCE CHALLENGE In recent times, Lagos has experienced increasing occurrences of natural disasters such as flooding, and human-induced disasters including building collapse, urban fires, and road accidents. There is a need to continuously monitor the efficiency of existing emergency response systems, promote wider coverage amongst residents, and ensure that emergency response stations are well-equipped and properly managed to provide on-site and off-site care.

IMPLEMENTING AGENCY

Lagos State Emergency Management Agency

SHOCKS

Building Collapse; Urban Fires; Disease Outbreak; Flooding and Severe Storms

STRESSES

Traffic Congestion; Inadequate Physical and Social Infrastructure; Erratic Power Supply; Inadequate Health System

STATUS

Strengthen

TIMELINE

Medium-term

POTENTIAL PARTNERS

- Police (Rapid Response Squad)
- Lagos State Traffic Management Authority
- Lagos State Fire Service
- The Nigerian Red Cross Society
- Lagos State Ambulance Services (LASAMBUS)

NEXT STEPS

3 months: Evaluate existing data on the use of the emergency hotlines and establish the demographics and challenges around its use.
6 months: Evaluate bottlenecks in the process of deployment of emergency services, and develop guidelines and strategic targets for long-term efficiency.
1 year: Complete emergency awareness campaigns using mass media outreaches.
1 year: Expand data collection mechanisms and set strategic targets for long-term efficiency.

RESILIENCE BENEFITS

The initiative will reduce the vulnerability of people and strengthen the resilience of the State to unforeseen natural and anthropogenic disasters. It will enable the optimum use of existing emergency response mechanisms such as the use of the emergency numbers. Improved infrastructure and management will reduce response times of first responders and provide wider coverage. All these actions will potentially reduce loss of lives and properties during emergency situations.

RESILIENCE DRIVERS

Ensures Continuity of Critical Services; Provides Reliable Communication and Mobility; Promotes Leadership and Effective Management

THEMES

Traffic Management and Transportation; Health and Environment; Education and Technology; Making Lagos a 21st Century Economy; Security and Governance

SDGs



BOX 7: LAGOS STATE EMERGENCY MANAGEMENT AGENCY

To address increasing disasters from flooding, major road accidents, building collapse, and other occurrences that threaten the fabric of the city, the Lagos State Emergency Management Agency (LASEMA) was established in 2008. The Agency is responsible for the overall co-ordination of emergency management in Lagos State, working closely with other stakeholders including the Federal Road Safety Corps (FRSC), Lagos State Ambulance Services (LASAMBUS), the Rapid Response Squad, Fire Services and the Lagos State Building Control Agency (LASBCA). The Agency is charged with providing adequate and prompt responses as well as sustaining interventions in all forms of emergency and disaster situations in the State. It performs various functions such as emergency and disaster prevention preparedness, mitigation, recovery, and relief. The establishment of this agency has helped increase the capacity of Lagos residents to cope with sudden shocks and the ability of the State to respond promptly when they do occur. Between January and June 2019, the agency intervened in 2,277 emergency situations.



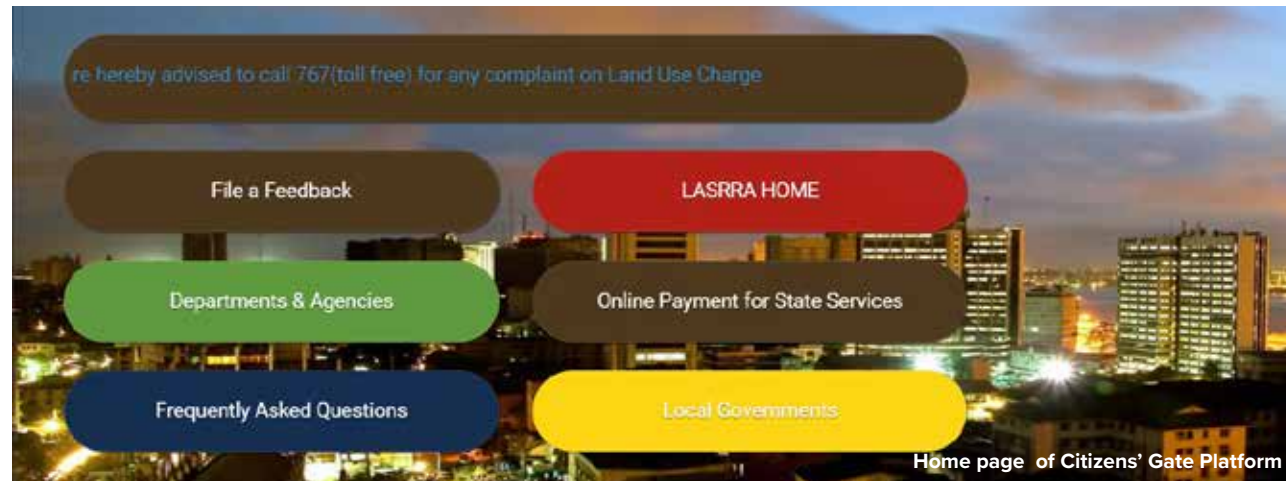
GOAL

2

INITIATIVE

3

EXPAND USE OF THE LAGOS STATE CITIZENS GATE PLATFORM FOR EFFECTIVE e-GOVERNANCE



Home page of Citizens' Gate Platform

IN BRIEF The Citizens Gate is an integrated web and mobile platform that allows citizens to provide feedback on public services. This initiative will evaluate user experience of the platform, including any challenges associated with its usage by citizens and public service providers. Furthermore, the initiative will investigate constructive ways to increase the usefulness of the data generated by the platform. The components of the initiative are:

1. Expansion of the Citizens Gate platform for improved access by all Lagos residents
2. Use of the data gathered for better planning and resource allocation
3. Spatial divisions, so that informants can include locations when sharing information on the platform

IMPLEMENTING AGENCY

Office of Transformation, Creativity, and Innovation

SHOCKS

Major Road Accident; Disease Outbreak; Flooding; Riot and Civil Unrest;

STRESSES

Inadequate Physical and Social Infrastructure; Traffic Congestion

STATUS

Strengthen

TIMELINE

Medium-term

POTENTIAL PARTNERS

- Telecommunication companies
- Ministry of Science and Technology
- Ministry of Information and Strategy
- Office of Civic Engagement
- Local Government and Local Council Development Areas

NEXT STEPS

3 months: Conduct evaluation of the Citizens Gate platform, with emphasis on response times and demographics using the service, as well as identifying gaps in operationalisation and harmonisation with other platforms.
6 months: Activate campaigns for addressing campaign issues surrounding expansion of use. Convene a coordination team across relevant agencies.
9 months: Strengthen capacity of public services providers to respond in real time to citizen feedback.

RESILIENCE CHALLENGE Access to real-time information, feedbacks, and localised intelligence strengthens communication between government and the people. Public service providers require soft data to facilitate more sophisticated mechanisms to respond to Lagos residents' concerns. Citizens also need to have access to platforms that will strengthen their ability to communicate directly with service providers in their everyday lives. The Lagos State Citizens Gate provides such services, but there is a need to assess its current effectiveness, amplify its usage, and improve its efficiency as an overarching e-governance platform.

RESILIENCE BENEFITS

This initiative strengthens Lagos' resilience by fostering access to government and promoting rapid and consistent responses to feedback from citizens in emergency and non-emergency situations. This supports the ability of people to cope with stresses associated with everyday life in the city. It will provide the Government and its service agencies with soft intelligence to inform policy and service delivery.

RESILIENCE DRIVERS

Empowers a Broad Range of Stakeholders; Ensures Social Stability, Security, and Justice; Provides Reliable Communication and Mobility; Ensures Continuity of Critical Services; Promotes Leadership and Effective Management.

THEMES

Traffic Management and Transportation; Health and Environment; Education and Technology; Making Lagos a 21st Century Economy; Security and Governance

SDGs



GOAL

2

INITIATIVE

4

STRENGTHEN THE STATE'S CAPACITY FOR COLLECTION, ANALYSIS, AND DISSEMINATION OF DATA



Home page of Lagos State Residents Registration Agency (LASRRRA)

IN BRIEF The initiative will expand on current demographic data collection from population surveys to enable coverage of vulnerable groups, and dissemination to both governmental and non-governmental agencies that need them. It has three components as follows:

1. Design clear guidelines, tracking capabilities, and dissemination practices for the timely identification of vulnerable groups for improved planning and service delivery.
2. Establish an efficient data collection schedule, offline and online processes, systems, and mechanisms through collaborative, coordinated, and structured interaction with Lagos State Ministries, Departments, and Agencies.
3. Develop an online platform for connecting government agencies, resident validation, and demographic data for citizens and groups such as health and social care beneficiaries.

IMPLEMENTING AGENCY

Lagos State Residents Registration Agency

SHOCKS

Disease Outbreak; Economic Downturn; Major Road Accidents

STRESSES

Inadequate Public Transportation; Unemployment and Underemployment; Inadequate Physical and Social Infrastructure

STATUS

Strengthen

TIMELINE

Medium-term

POTENTIAL PARTNERS

- Lagos Bureau of Statistics
- Lagos State Office of Disability Affairs
- Ministry of Economic Planning and Budget
- National Population Commission
- ICT Companies

NEXT STEPS

3 months: Convene workshop of health and social development stakeholders to generate modified population and household survey instrument.
6 months: Initiate expansion of data collection mechanisms to identify and track clusters of vulnerable groups.
1 year: Conduct inclusive population and household survey.

RESILIENCE BENEFITS

This initiative will enable the State to collect a more inclusive data set to enhance its delivery of social and economic services. It will provide support for the Lagos State Government's plan to build a cohesive and resilient society that caters for disadvantaged groups. It will also inspire collaboration and social responsibility among citizens. This initiative will ensure that the health, social, and economic wellbeing of identified vulnerable groups are taken into consideration in subsequent social policy formulation.

RESILIENCE DRIVERS

Meets Basic Needs; Ensures Public Health Services; Ensures Continuity of Critical Services; Empowers a Broad Range of Stakeholders; Fosters Long-term and Integrated Planning; Ensures Social Stability, Security, and Justice

THEMES

Health and Environment; Security and Governance

SDGs



**INTERNATIONAL CASE STUDY:
IMPROVED DIGITAL SURVEILLANCE FOR PUNJAB – SAFE CITIES
AUTHORITY, PAKISTAN**

The Punjab Safe Cities Authority (PSCA) was developed to ensure security and improved quality of life through the improved use of technology, infrastructure, personnel, and processes. The project, which cost US\$135 million, comprises a range of highly integrated Safe City systems, focused around large-scale deployment of CCTV that will oversee operations and provide a new working structure in the city. The key benefits that are anticipated from this scheme are the integration of the emergency services, traffic management, monitoring law and order, and crime reduction. The implementation of a CCTV system enables police to monitor events in real time and deploy resources more efficiently. It also allows for electronic evidence to be gathered and for a larger geographic area to be monitored than can be achieved using police officers. As part of the initiative, an app was developed and launched to help women report crime. An additional benefit realised by this project was improved traffic management through a real-time messaging system, keeping the public informed of traffic density and alternative routes. The system will minimise traffic congestion, saving fuel costs and time.

APPLICABILITY TO LAGOS

Lagos can benefit in several ways from the Punjab Safer Cities project in Lahore. Lagos State, like Lahore, has a growing population with serious issues around security and increasing crime rates. Lagos State also has an initiative on data-driven urban service delivery that aligns with improving its transportation and emergency response systems. The State's proposed initiative can benefit from the following:

- Mapping of surveillance hotspots: The project in Lahore benefitted from the mapping of the most critical areas for the CCTV to be installed. Ultimately, the mapping considered the areas with highest crime rates as well as public spaces and key infrastructure.
- Centralising information: Sharing of information across the police force, as well as other emergency services and the transport system, has enabled a more coordinated response from the city to crime and disaster relief.
- Potential issues that Lagos may want to consider include: technological challenges with specific systems; ownership issues, i.e. who owns and manages the system; how to ensure maximum buy-in from different public institutions; public awareness campaigns to build goodwill with the public; and funding challenges to ensure the system can be sustained.



GOAL

3

IMPROVE THE HEALTH SYSTEM TO SUPPORT LAGOS RESIDENTS IN TIMES OF SHOCK

A resilient health system is one where the capacity of health actors, institutions, and populations can prepare for and effectively respond to crisis, and can maintain core functions when crises hit. The health system should be informed by lessons learned during the crisis and have the ability to reorganise if conditions require it.⁵⁹ Large-scale health challenges require systems that are capable of responding to crises in real time and allow healthcare personnel to access health records remotely. Both challenges necessitate a shift from paper to an electronic system. Significant investment is required to strengthen the existing health system and make it more resilient.

In Lagos there are approximately 3,000 private healthcare facilities and 300 public healthcare facilities, a grossly inadequate figure for a population of 26 million.

In addition to the inadequate number of health facilities, the State also has insufficient human resources to service the health sector. Situational analysis done in 2016 revealed that the city has eight skilled health workers (doctors, nurses and midwives) for every 10,000 citizens, compared to a WHO recommendation of 23 workers per 10,000 people. To support the health system in Lagos, the Lagos State Health Scheme was signed into law in May 2015. The law incorporates the health insurance scheme which supports health care financing and associated activities.

The initiatives under this goal aim to build on what exists by improving access to healthcare for all residents, enhancing capacity and infrastructure in healthcare facilities, and utilising technology for improved service delivery.

59 Kruk, M. E. Building resilient health systems: a proposal for a resilience index, <https://www.ecosia.org/search?q=A+resilient+health+system&addon=chrome&addonversion=2.1.0>.

IMPLEMENT THE LAGOS STATE HEALTH SCHEME



Dispensary Section of the Pharmacy

IN BRIEF The initiative is to fully implement the Lagos health insurance scheme so that all residents of the city can have access to basic minimum healthcare packages from both public and private services at minimal cost.

It has the following components:

1. Intensify sensitisation of residents to the current registration drive to increase subscriptions
2. Expansion of registration of private healthcare facilities to promote coverage to hard-to reach groups
3. Release 1% of the State's Consolidated Revenue Fund, which comprises internally generated revenue and federal transfers, to support access by the poor
4. Provide logistical support to the agency including operational vehicles to aid mobility during implementation

RESILIENCE CHALLENGE Approximately 90% of health facilities in Lagos are privately owned, providing services at a significantly higher cost. There are limited public healthcare facilities providing much cheaper services, but they are often overstretched as they cater to the large proportion of people who cannot afford private healthcare. People in remote parts of the city, such as in the riverine areas, must travel at increased cost to distant public facilities or resort to unlicensed traditional medical clinics and expensive health facilities. The Lagos State Health Scheme Law (2015) established a mandatory health insurance scheme to improve healthcare access for all Lagos residents. Since then, the Lagos State Health Management Agency has been set up, with a pilot completed in 2017. Some Lagos residents are already benefiting from the scheme, but full-scale implementation has not been achieved.

IMPLEMENTING AGENCY

Lagos State Health Management Agency

SHOCKS

Disease Outbreak;
Economic Downturn;
Riot and Civil Unrest

STRESSES

Inadequate Health System; Unemployment and Underemployment

STATUS

Strengthen

TIMELINE

Short-term

POTENTIAL PARTNERS

- Ministry of Health
- Ministry of Economic Planning and Budget
- Nigerian Health Insurance Scheme
- Public and Private Hospitals
- NGOs

NEXT STEPS

3 months: Identify scope of current coverage, enablers and impediments to expansion of the health insurance scheme.
6 months: Mobilise funds to intensify public awareness campaigns on registration.
1 year: Obtain Government's release of the 1% Consolidated Revenue Fund to improve the healthcare scheme.

RESILIENCE BENEFITS

Access to primary healthcare will improve the physical and mental wellbeing of Lagos residents, increase life expectancy, enhance ability to cope with other shocks and stresses, and also ensure that productivity is sustained. There will be accelerated access to healthcare among poor and low-income groups in the State, thus promoting equity and inclusiveness in the system. Expansion of healthcare facilities will significantly strengthen the State's response architecture against sudden shocks and raise levels of efficiency.

RESILIENCE DRIVERS

Ensures Public Health Services; Ensures Social Stability, Security, and Justice; Promotes Cohesive and Engaged Communities

THEMES

Health and Environment; Making Lagos a 21st Century Economy; Security and Governance

SDGs



UPGRADE PUBLIC HEALTHCARE FACILITIES



Educating Patients on Healthcare Services

IN BRIEF The initiative involves upgrading both health infrastructure upgrades and improving universal access for citizens to well-trained medical practitioners in the Lagos healthcare sector. It has the following components:

1. Expanding the provision of healthcare facilities to promote equal access and coverage to all residents in line with best practices.
2. Providing public health care facilities with modern equipment to increase the quality of services.
3. Developing a facility maintenance plan for the healthcare facilities and medical equipment.
4. Developing a mandatory recruitment, retention, and professional capacity development plan for healthcare workers.
5. Advocating for increased budgetary allocation for healthcare.

RESILIENCE CHALLENGE In recent years, Lagos has achieved improved primary healthcare, but coverage is still geographically skewed with approximately 30% of hospitals and 32% of general practitioners located in Lagos Island, where only 4.9% of the city's population live. There are insufficient doctors and nurses working for public healthcare facilities, and inadequate medical equipment for diagnosis, treatment, and prevention of diseases. Situational analysis done in 2016 revealed that the city has 8 skilled health workers per 10,000 people compared to a WHO recommendation of 23 per 10,000. Skill levels in some healthcare specialties are also relatively low. Residents' ability to access care is a serious concern, particularly in remote and riverine areas. To ensure that all stakeholder groups are able to access affordable and adequate services, actions are needed to strengthen the healthcare system.

IMPLEMENTING AGENCY

Ministry of Health

SHOCKS

Disease Outbreak

STRESSES

Inadequate Health System

STATUS

Strengthen

TIMELINE

Long-term

POTENTIAL PARTNERS

- Lagos State Health Service Commission
- Lagos State University Teaching Hospital
- Lagos State Primary Healthcare Board
- Original equipment manufacturers
- NGOs

NEXT STEPS

3 months: Carry out a baseline inventory of existing infrastructure and equipment at existing public health care facilities.
6 months: Carry out a baseline capacity audit for Human Resource for Health in the public sector to determine gaps.
1 year: Draw up a targeted healthcare intervention plan for geographical expansion, staff training and medical equipment provision in healthcare facilities across the State.

RESILIENCE BENEFITS

The initiative will deliver the global mandate of an effective healthcare system, which is to protect, promote, and restore the health of Lagos residents and to facilitate access to quality healthcare services without excluding the poor, geographically remote communities, or other vulnerable groups. Improved access will reduce the current recourse to unlicensed traditional healthcare providers and patent medicine stores while also stemming the tide of medical tourism, where residents seek specialised care outside the country at significant costs. It might also potentially reduce the loss of medical staff to countries with better facilities. Overall, it will strengthen the State's capacity to cope with emergencies arising from infectious disease outbreaks, and increase the capacity of Lagosians to cope with everyday stress.

RESILIENCE DRIVERS

Ensures Public Health Services; Ensures Continuity of Critical Services; Ensures Social Stability, Security, and Justice

THEMES

Health and Environment; Security and Governance

SDGs



DEVELOP AN e-HEALTH SYSTEM THAT INCORPORATES DISEASE SURVEILLANCE

IN BRIEF The initiative is to develop an electronic medical records system that also integrates real-time electronic disease surveillance in all public health facilities in Lagos. It will involve all aspects of health in the State, including disease surveillance, medical records, health management information systems, and human resource information. The ultimate goal is to strengthen the existing system so that trends in disease patterns can be quickly identified and appropriate alerts sent to the State's Epidemiologists and/or Disease Surveillance and Notification Officers, leading to prompt actions. A pilot of the system will be conducted before being considered for scaling up across all public and private healthcare facilities in the State.

IMPLEMENTING AGENCY

Ministry of Health

SHOCKS

Disease Outbreak

STRESSES

Inadequate Health System; Unemployment and Underemployment

STATUS

Initiate

TIMELINE

Medium-term

POTENTIAL PARTNERS

- Lagos State Health Service Commission
- Lagos State University Teaching Hospital
- Lagos State Primary Healthcare Board
- NGOs
- Multilateral organisations, e.g. WHO, UNICEF

NEXT STEPS

3 months: Evaluate current system and identify capacity and infrastructure requirements for expansion purposes.
6 months: Procure relevant electronic devices, and develop the e-health software.
1 year: Train frontline officers on the use of the electronic system and commence pilot deployment of e-health system in selected LGAs/LCDAs.

RESILIENCE CHALLENGE The city currently operates a paper-based health administration system, which feeds reports upwards from the health facilities to Local Governments and then to the State. This system is plagued with late submission of reports, delays in transmission, inaccurate and incomplete information from manual transcription of reports to spreadsheets. Modernisation of the system will reduce delays between detection of public health concerns and their referral to State Epidemiologists and/or Disease Surveillance and Notification Officer (DSNO) which will help prevent avoidable disease outbreaks.

RESILIENCE BENEFITS

With the adoption of an electronic system, there will be early detection of unexpected elevations in disease surveillance data, leading to prompt responses to possible outbreaks. This will strengthen the resilience of the city against disease outbreaks.

RESILIENCE DRIVERS

Ensures Public Health Services; Ensures Continuity of Critical Services; Ensures Social Stability, Security, and Justice; Empowers a Broad Range Of Stakeholders

THEMES

Health and Environment; Security and Governance

SDGs



CHAPTER 5

IMPLEMENTING RESILIENCE

IMPLEMENTING RESILIENCE

The Lagos Resilience Strategy, through its 3 pillars, 10 goals, and 31 initiatives, charts a clear pathway to improving resilience in Lagos. Through an extensive process involving engagements with research institutions, business communities, Lagos State Government Ministries, Departments and Agencies, civil society actors, community leaders and residents, the Lagos Resilience Strategy provides a framework for protecting the city against present and future shocks and stresses. However, success depends on three major factors to which Lagos State is committed:

- ✓ **Mainstreaming resilience** and strengthening institutional structures for implementation of the strategy
- ✓ **Collaborative engagement** to connect people and resources
- ✓ **Monitoring and evaluation** to track strategy progress

✓ MAINSTREAMING RESILIENCE

Implementation of the Resilience Strategy will require significant coordination and collaboration, similar in many regards to the efforts required to develop this vision for resilience. The Lagos Resilience Strategy will be implemented through existing organisations and partnerships, and many of the initiatives being proposed are not new. However, the strategy brings a resilience lens to enhance the co-benefits resulting from the implementation. New delivery structures and working groups will only be established where appropriate. It is recommended that the Lagos State Resilience Office be upgraded to become an autonomous, multidisciplinary agency of the Lagos State Government, with the Lagos State Resilience Steering Committee providing guidance.

The Lagos State Resilience Office will have a mandate to:

- 1. Coordinate the implementation of the Lagos Resilience Strategy:** While leadership on strategy initiatives is assigned to identified agencies, key LASRO staff will serve as coordinators and facilitators, working with these agencies to actualise the various initiatives.
- 2. Develop and implement a toolkit for institutionalising and mainstreaming resilience thinking in the State:** LASRO will lead efforts on continuous capacity-building for resilience across all Lagos State Government Ministries, Departments, and Agencies, while ensuring that all programmes, policies, and projects incorporate a resilience lens.

- 3. Develop a strategic public campaign on resilience consciousness for all residents,** including hosting the Lagos Resilience Week and coordinating the activities of the Resilience Forum.
- 4. Ensure progress in the achievement of resilient outcomes.** LASRO will develop and deploy a framework for tracking resilience outcomes and be available for consultations, advice, support, and collaboration with communities, organisations, and institutions committed to resilience-building both locally and internationally. LASRO will pursue collaborations with cities within the 100RC Network for peer learning.

The Lagos State Resilience Steering Committee will perform the following tasks:

- Act as a high-level, multidisciplinary strategic body within the Lagos State Government to support the implementation of the Lagos Resilience Strategy.
- Provide directional support, guidance, and influence for the achievement of the Lagos Resilience Strategy.
- Evaluate the progress of the Lagos Resilience Strategy and knit together related or cross-cutting initiatives.
- Report periodically to the Governor on the progress of the State regarding resilience issues.



Deliberations at the Resilience Steering Committee Meeting

✓ COLLABORATIVE ENGAGEMENT

Successful implementation of the Lagos Resilience Strategy necessitates shared responsibility and the contributions of various actors. These include Federal and State Government Agencies, Local Government entities, research institutions, businesses, civil society organisations, local communities and residents – since many of the initiatives will require cross-jurisdictional collaboration, resource allocation, and management to achieve success. The following platforms are recommended to structure partnerships in a mutually reinforcing and integrated way:

The Resilient Lagos Forum which will consist of individuals with interest, experience, and expertise in resilience-building. The remit of the Resilient Lagos Forum will be to engage with LASRO to achieve the following:

- identify new opportunities to be integrated into the resilience agenda of the city
- identify new conversations on emerging shocks and stresses impacting the city
- promote the application of a resilience lens to citywide activity
- disseminate resilient learning at a citywide level

The Resilient Partners Forum which will consist of key local and international organisations and development partners committed to supporting urban resilience. Platform Partners will provide support for capacity-building and resourcing necessary for the delivery of some of the actions contained in the Lagos Resilience Strategy. As well as identifying and establishing framework agreements with key partners, the Lagos State Government can also leverage partner platforms to accelerate the implementation of some initiatives.

The collaboration of LASRO, the Resilience Steering Committee, and the Resilient Partners Platform will be critical to the implementation of the Lagos Resilience Strategy.

✓ MONITORING AND EVALUATION

The Lagos Resilience Strategy is not an exhaustive, static document. It will be periodically reviewed to monitor its alignment with the City’s development priorities and to track progress on resilience-building, as follows:

- 1. Development of a Resilience Monitoring and Evaluation Framework,** which will monitor progress through established data sets, especially those linked to the implementation of the Lagos State Development Plan and achievement of the SDGs. The City Resilience Index, based on the City Resilience Framework, can be used as an evaluation tool for this exercise. To achieve communication, learning, and accountability, the indicators must be accessible and used reflectively to identify areas of progress or continuing challenge. As such, new indicators may be introduced as the strategy develops and unfolds.
- 2. Dissemination of the Biennial City Resilience Report,** a public document, which will articulate:
 - Periodic quantitative and qualitative performance assessment with information on progress on the goals and initiatives
 - Emerging considerations that should be integrated into resilience practices
 - Emerging collaborations and/or funding opportunities that could support strategy implementation
- 3. Review of the Lagos Resilience Strategy:** The Lagos Resilience Strategy should be reviewed every five years. The process of resilience assessment, identifying prevalent shocks and stresses, discovery area iteration, and introduction of fresh initiatives should commence from the fourth year of implementation of the current strategy.

CHAPTER 6

CONCLUSION

FINAL WORDS FROM THE DEPUTY CHIEF RESILIENCE OFFICER

Thank you for your interest in the Lagos Resilience Strategy. It is a significant step in the process of consolidating tremendous efforts over the years to make Lagos Africa's model megacity and a leading location for enterprise and innovation.

The initiatives in this strategy outline a new approach to city building. By tracking their results, the City will learn not only what works well and what could be improved for specific initiatives, but also how different initiatives may combine to produce greater benefits and resilient outcomes.



Dr Folayinka Dania
Deputy Chief Resilience
Officer

Drawing on our shared experiences, and learning from these and future actions, we will foster a resilient Lagos for current and future generations: a city that is socially inclusive, environmentally adaptive, and economically thriving.

Please be part of the effort. Identify initiatives you would like to be part of, or in which you are already involved. We are constantly looking for new partners, new methods of implementation, and new opportunities to source finance and improve our capacity.

VISIT:
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Mr Olashile Oyeyemi	National Youth Service Corps member
Mr Emmanuel Shoyinka	National Youth Service Corps member
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Miss Faith Obikwe	National Youth Service Corps member
Mr Victor Umoren	Intern
Ayodimeji Ajibola	Intern
Miss Bolanle Osho	Intern

LAGOS STATE GOVERNMENT

Mr Babajide Olusola Sanwo-Olu	The Governor of Lagos State
Dr Obafemi Hamzat	The Deputy Governor of Lagos State
Rt. Hon. Mudashiru Obasa	Speaker, Lagos State House of Assembly
Mrs. Folashade Jaji	Secretary to the State Government
Mr. Hakeem Muri-Okunola	Head of Service
Mr. Tayo M. Ayinde	Chief of Staff
Mr. Gboyega Soyannwo	Deputy Chief of Staff
Mr. Samuel Egube	Honourable Commissioner, Ministry of Economic Planning and Budget
Mr. Adebayo O. Sodade	Special Adviser to The Governor on Economic Planning and Budget
Mrs. Adetutu A. Liadi	Permanent Secretary, Ministry of Economic Planning and Budget

Ministry of Physical Planning and Urban Development
Ministry of Health
Ministry of Transportation
Office of the Special Adviser on Education
Ministry of Youth and Social Development
Ministry of Education
Ministry of the Environment and Water Resources
Ministry of Energy and Mineral Resources
Ministry of Agriculture
Office of Drainage Services
Ministry of Tourism, Arts, and Culture
Ministry of Housing
Ministry of Wealth Creation and Employment
Ministry of Special duties and Intergovernmental Relations
Ministry of Justice
Ministry of Science and Technology
Lagos State Urban Renewal Agency
Lagos State Emergency Management Agency
Lagos Metropolitan Area Transport Authority
Lagos State Employment Trust Fund
Lagos State Wastewater Management Office
Lagos Waste Management Authority
Lagos State Office of Transformation, Creativity, and Innovation
Lagos State Waterways Authority
Lagos Water Corporation
Lagos State Residents Registration Agency
Lagos State Office of Disability Affairs
Office of Sustainable Development Goals and Investment

LAGOS STATE RESILIENCE STEERING COMMITTEE

Permanent Secretary, Ministry of Economic Planning and Budget (Chairperson)
Permanent Secretary, Ministry of Health
Permanent Secretary, Ministry of Physical Planning and Urban Development
Permanent Secretary, Ministry of Transportation
Permanent Secretary, Ministry of the Environment and Water Resources
Permanent Secretary, Ministry of Education
Permanent Secretary, Ministry of Information and Strategy
Permanent Secretary, Ministry of Energy and Mineral Resources

Permanent Secretary, Ministry of Waterfront Infrastructure Development
Permanent Secretary, Ministry of Works and Infrastructure
Permanent Secretary, Ministry of Justice
Vice Chancellor, Lagos State University (LASU)
Vice Chancellor, University of Lagos (UNILAG)
Executive Secretary, Human and Environmental Development Agenda (HEDA)
Project Director, Arctic Infrastructure
Chief Resilience Officer (LASRO)
Deputy Chief Resilience Officer (LASRO)

TRADITIONAL RULERS

HRM, Oba Rilwan Akiolu	Oba of Lagos
HRM, Oba Saheed A. Elegushi	Kunsela III of Ikate Ancient City

HRM, Oba Shakirudeen A. Kuti	Elewu of Ewu Land
HRM, Oba Semiu Kasali	Adeboruwa of Igbogbo

100 RESILIENT CITIES - PIONEERED BY THE ROCKEFELLER FOUNDATION

Dana Omran, Liz Agbor-Tabi, Nse Esema, Martine Sobey, Tom Lindsay

ORGANISATIONS AND PERSONS ENGAGED IN THE STRATEGY DEVELOPMENT PROCESS

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Mrs Bimbo Oshobe: Federation of Slum/Informal Settlements of Nigeria
Betty Abah: Centre for Children’s Health, Education Orientation and Protection
Dr Adebukola Adebayo: Human & Organizational Resources Development Centre
Mr Bola Oguntade: Poseidon Imaging (Photography)
Ademosu Iseoluwapo – Spatial Mapping
Rockefeller Foundation
Heinrich Boell Stiftung, Nigeria
Spaces for Change
Lekki Conservation Centre
All-On
WeCyclers
Community Development Committees
Stratagem Energy Services
Dar-Al-Handassah
WaterAid
Bank of Industry
Legacy 1995
Tarzan Water
Lagos State Council of Tradesmen and Artisan

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PHOTOGRAPHY

Bola Oguntade, POSEIDON IMAGING

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SUMMARY OF PILLARS, GOALS, AND INITIATIVES

Initiative	Implementing Agency	Timeframe	Status
Pillar 1, Efficient City			
Goal 1: Develop a robust, multimodal, and integrated transportation system			
Implement the Lagos State Strategic Transport Master Plan (LSTMP)	L a g o s S t a t e Metropolitan Area Transport Authority	Long Term	Strengthen
Expand the water transportation network with increased private sector participation	Lagos State Waterways Authority	Medium Term	Strengthen
Develop an e-platform that coordinates and integrates public transport services	Lagos Metropolitan Area Transport Authority	Medium Term	Strengthen
Goal 2: Improve access to clean water and sanitation			
Provide public toilets and bathrooms in each Local Government and Local Council Development Area	Lagos State Ministry of the Environment and Water Resources	Medium Term	Strengthen
Construct community wastewater treatment plants	Lagos State Wastewater Management Office	Long Term	Initiate
Develop an integrated waste management system	L a g o s W a s t e Management Authority	Long Term	Strengthen
Expand and protect water sources to improve the city's water supply	L a g o s W a t e r Corporation	Long Term	Strengthen
Goal 3: Enhance the provision of affordable and reliable energy			
Conduct an energy audit to determine infrastructure and supply gaps	Lagos State Ministry of Energy and Mineral Resources	Medium Term	Initiate
Delivery of clean and safe energy for cooking	Lagos State Ministry of Energy and Mineral Resources	Long Term	Strengthen
Develop a campaign to promote efficient energy use	Lagos State Electricity Board	Medium Term	Strengthen
Goal 4: Enhance resilience through land-use planning			
Strengthen the implementation of operative physical development plans	Ministry of Physical Planning and Urban Development	Long Term	Strengthen
Increase access to affordable housing	Lagos State Ministry of Housing	Long Term	Initiate
Strengthen the Lagos Urban Renewal Programme	Lagos State Urban Renewal Authority	Long Term	Strengthen
Pillar 2, Enterprise City			
Goal 1: Support individual and collective entrepreneurship as a driving force for innovation and development			
Strengthen the Lagos State Employment Trust Fund to support job creation	L a g o s S t a t e Employment Trust Fund	Medium Term	Strengthen
Establish at least one innovation and incubation hub in each of the 57 LGA/LCDA	L a g o s S t a t e Employment Trust Fund	Medium Term	Initiate
Upgrade market infrastructure	Lagos State Ministry of Local Government and Community Affairs	Medium Term	Initiate
Establish an Information and Communication Technology (ICT) village that will incorporate the current computer village	Lagos State Ministry of Physical Planning and Urban Development	Medium Term	Initiate
Expand the Master Craftsman Project	Lagos State Ministry of Housing	Medium Term	Strengthen

Initiative	Implementing Agency	Timeframe	Status
Goal 2: Position Lagos as an attractive and open city valuing cultural and environmental assets			
Strengthen the creative sector in Lagos by establishing a film village	Lagos State Ministry of Tourism	Medium Term	Strengthen
Promote sustainable waterfront tourism to improve livelihood in coastal communities	Lagos State Ministry of Waterfront Infrastructure Development	Long Term	Initiate
Resuscitate farm centres and explore urban agriculture opportunities to strengthen food security	Lagos State Ministry of Agriculture	Long Term	Strengthen
Goal 3: Prepare youth for a changing economy			
Broaden the scope of Information and Communication Technology (ICT) in the school curriculum	Lagos State Ministry of Education	Medium Term	Strengthen
Scale up the CODE Lagos Programme	Office of Special Adviser on Education	Medium Term	Strengthen
Pillar 3, Inclusive City			
Goal 1: Create an inclusive environment for all city residents			
Community participatory flood management	Office of Drainage Services	Medium Term	Initiate
Scale Up Implementation of Lagos State Special Peoples Laws	Lagos State Office for Disability Affairs	Medium Term	Strengthen
Goal 2 - Strengthen information management and disaster preparedness			
Expand use of the Lagos State Citizens Gate Platform for effective e-governance.	Office of Transformation, Creativity and information	Medium Term	Strengthen
Strengthen the state's Emergency Response System	Lagos State Emergency Management Agency	Medium Term	Strengthen
Strengthen the state's capacity for collection, analysis, and dissemination of data	Lagos State Residents Registration Agency	Medium Term	Strengthen
Goal 3 - Improve the health system to support Lagos residents in times of shock			
Implement the Lagos State Health Scheme	Lagos State Health Management Agency	Short term	Strengthen
Upgrade public healthcare facilities	Lagos State Ministry of Health	Long term	Strengthen
Develop an e-health system that incorporates disease surveillance	Lagos State Ministry of Health	Medium Term	Initiate

ADMINISTRATIVE FACTS

Official Name: Federal Republic of Nigeria	Capital: Abuja	Official Language: English
Area: 923,768km ² ¹	Main cities: Lagos, Kano, Portharcourt, Abuja, Ibadan	Major languages: Hausa, Igbo, Yoruba
Political regime: Republic		Number of States: 36

DEMOGRAPHICS		ENVIRONMENT		ECONOMY	
Population census (2006):	140,431,790	Coastline:	853km ¹	Currency:	Naira (₦) (NGN)
Population (2019):	200,96,2417 ²	Climate:	Tropical Savannah ³	GDP (2018):	US\$397.3 billion ⁴
Population growth rate (2019):	2.6% ⁵	Hydrographic Climate:	River Niger (4,180km), River Benue (1400km) ⁶	GDP growth rate (2017):	2.85% ⁷
Density:	217.55 km ² ⁸	Greenhouse gas emission (2014):	492.44 million metric tons of CO ₂ ⁹	GDP per capita:	US\$2396.3 ¹⁰
Urbanization rate (2017):	49.52% ¹¹			Inflation Rate (2018):	12.1% ¹²
Poverty prevalence rate (2018):	46.7% ¹³				
HDI (2017):	0.532 ¹⁴⁵				

FLAGSHIP SECTORS

INDUSTRY	AGRICULTURE	COMMERCE
The industrial sector makes up 22.3% of GDP. ¹⁵	Nigeria ranks sixth worldwide and first in Africa in farm output.	Nigeria ranks 27 th worldwide and first in Africa in commercial activities.
Employs 11.6% of the workforce. ¹⁶	The sector accounts for approximately 18% of GDP.	Services represent 55.8% of GDP.
First country in Africa and the eighth country in the world in terms of oil export.	Employs one third of the population.	Employs 51.9% of the population.
Oil accounts for 83% of total exports revenue.		Labour force 90.5 million in 2018.
Accounts for 10% of GDP.		
70% of government revenue.		

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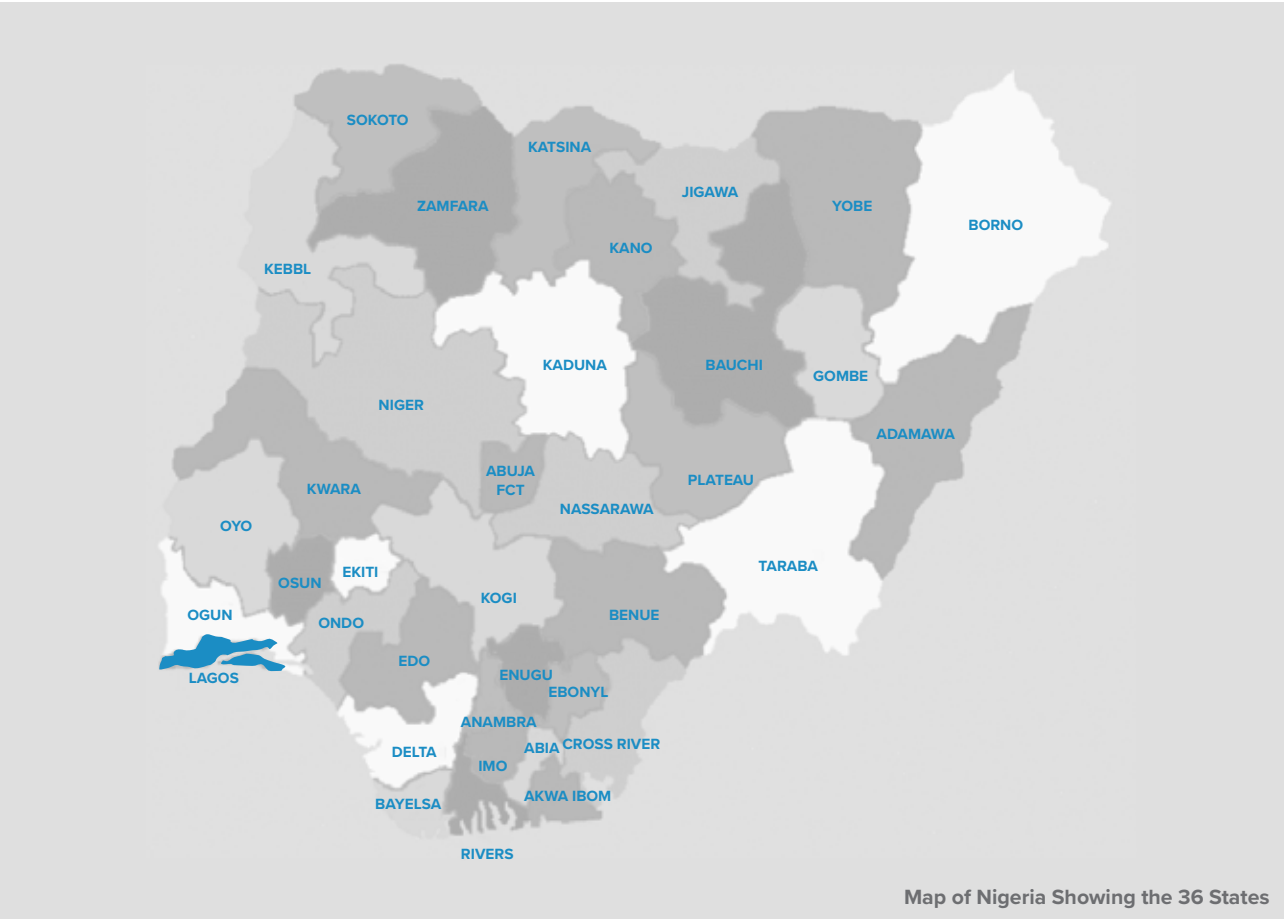
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Map of Nigeria Showing the 36 States

ACRONYMS

- 100RC

100 Resilient Cities
- 4Ps

Public-Private-People-Partnership
- AICs

Atal Incubation Centres
- AIM

Atal Innovation Mission
- BRT

Bus Rapid Transit
- CHP

Combined Heat and Power
- CHSD

Centre for Housing and Sustainable Development
- COAST

Collaborative Action for Sustainable Tourism
- CODI

Community Organizations Development Institute
- ECOWAS

Economic Community of West African States
- FRSC

Federal Road Safety Commission
- GDP

Gross Domestic Product
- GEF

Global Environmental Facility
- GFDRR

Global Facility for Disaster Reduction and Recovery
- GIZ

German Development Agency
- IBILE

Administrative divisions of Lagos: Ikeja, Badagry, Ikorodu, Lagos Island and Epe
- ICT

Information and Communication Technology
- Lagos HOMS

Lagos State Home Ownership Mortgage Scheme
- LAMATA

Lagos Metropolitan Area Transport Authority
- LASAMBUS

Lagos State Ambulance Services
- LASBCA

Lagos State Building Control Agency
- LASEMA

Lagos State Emergency Management Agency
- LASODA

Lagos State Office for Disability Affairs
- LASRO

Lagos State Resilience Office
- LASRRA

Lagos State Residents Registration Agency
- LASU

Lagos State University
- LASWA

Lagos State Waterways Authority
- LAWMA

Lagos Waste Management Authority
- LBS

Lagos Bureau of Statistics
- LCC

Lekki Conservation Centre
- LCDAs

Local Council Development Areas
- LGA

Local Government Areas
- LPG

Liquefied Petroleum Gas
- LSDP

Lagos State Development Plan
- LSETF

Lagos State Employment Trust Fund
- LSTMP

Lagos State Strategic Transport Master Plan
- MDAs

Ministries, Departments & Agencies
- MSMEs

Micro, Small and Medium Scale Enterprises
- NGO

Non-Governmental Organization
- NITI

National Institution for Transforming India
- PLwDs

Persons Living with Disabilities
- PMS

Premium Motor Spirit
- PPP

Public Private Partnership
- PSCA

Punjab Safe Cities Authority
- RFD

Rural Fund for Development
- SDGs

Sustainable Development Goals
- SON

Standard Organization of Nigeria
- TFL

Transport for London
- TMB

Transports Metropolitans de Barcelona
- TURP

Tanzania Urban Resilience Programmes
- UBSUP

Upscaling Basic Sanitation for Urban Poor
- UCDO

Urban Community Development Organizations
- UK

United Kingdom
- UNDP

United Nations Development Programme
- UNEP

United Nations Environmental Programme
- UNESCO

United Nations Educational, Scientific and Cultural Organization
- UNICEF

United Nations Children's Fund
- UNILAG

University of Lagos
- UNWTO

United Nations World Tourism Organization
- USAID

United State Agency for International Development
- VI

Victoria Island
- WASH

Water, Sanitation and Hygiene
- WHO

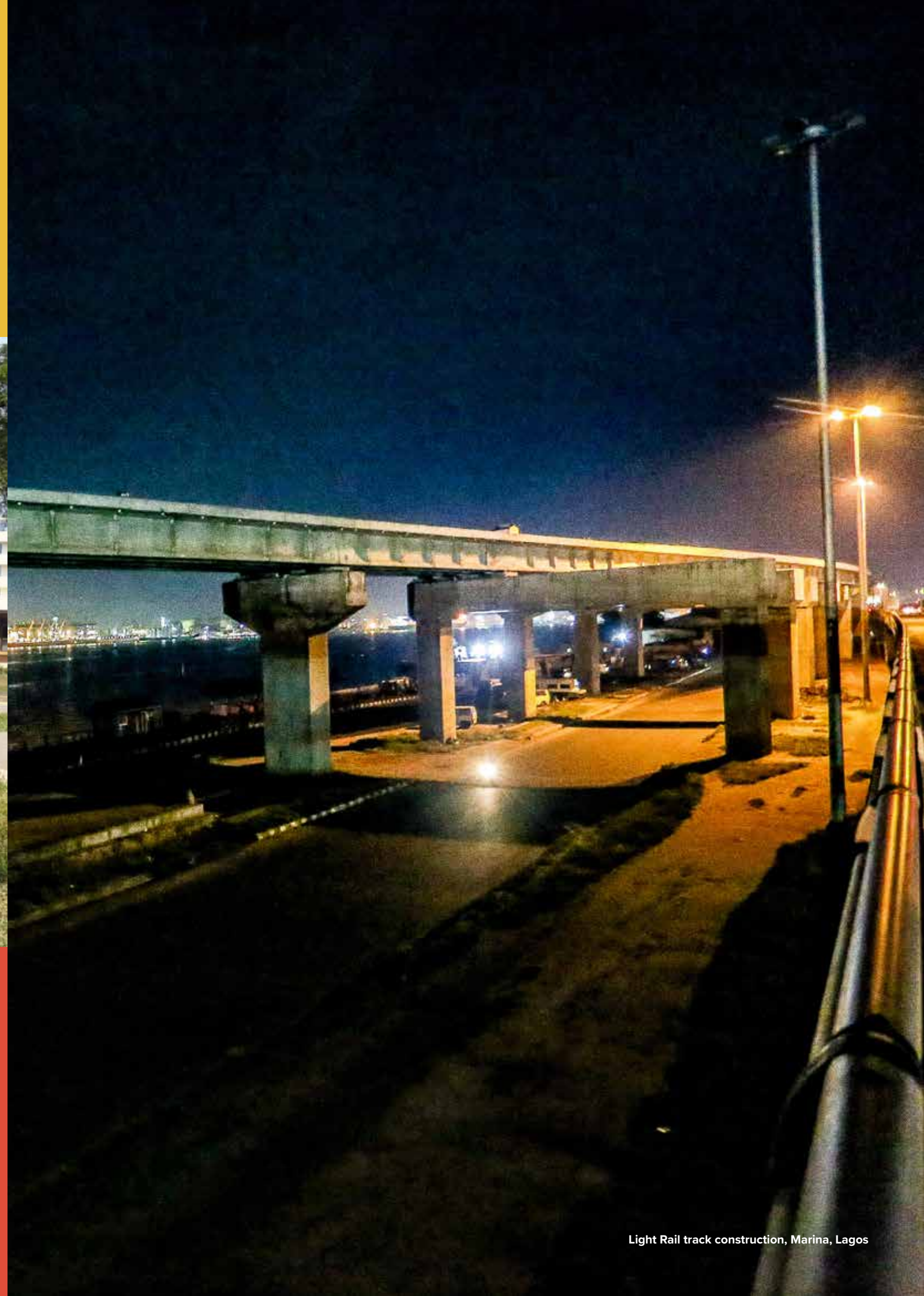
World Health Organisation
- WSPs

Water Service Providers
- WSTF

Water Services Trust Fund



Members of LASRO Team



Light Rail track construction, Marina, Lagos