CITIES OF THE FUTURE: PATHWAYS TO A RESILIENT AFRICAN CITY BEYOND COVID-19

Insights from the Preparatory Seminar series towards the 2020 ARIN International Conference 'Africa in the Post-COVID-19 World: Lessons for Research and Policy

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LIST OF ACRONYMS

ACTS	Africa Centre of Technology Studies
ARIN	Africa Research and Impact Network
ASAP	A Systems Approach to Air Pollution
BRT	Bus Rapid Transit
CBD	Central Business District
COVID19	Coronavirus Disease 2019
CoG	Council of Governors
GCRF	Global Challenges Research Fund
GDP	Gross Domestic Product
GOST	Governance of Sociotechnical Transformation project
ICT	Information and Communication Technology
NMS	Nairobi Metropolitan Services
NMT	Non-Motorized Transport
TUK	Technical University of Kenya
WHO	World Health Organization

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EXECUTIVE SUMMARY

This technical report summarizes the key emerging highlights from the "Cities of the Future: Pathways to a Resilient African City Beyond COVID-19" seminar under the Cities and Resilience theme that was held on 3rd September 2020. This was one of the preparatory seminars aimed at stimulating discussions and debate to inform the ARIN International Conference titled 'Africa in the Post-COVID-19 World: Lessons for Research and Policy' that was held on 18th – 20th November 2020. The preparatory seminars were organized around the three conference themes: Climate Action and Sustainable Energy; Cities and Resilience; Science Technology and Innovation. These are critical areas for Africa's transition to sustainable developed economies in line with the Sustainable Development Goals.

On-going research and development projects[1] under different partnerships as well as Africa's COVID-19 experiences and responses formed the foundation of the seminar debates and discussions. The seminar opened with a presentation of evidence on the current state of cities in Africa in relation to disaster resilience, with a special interest in urbanization trends and their implications to disasters such as COVID-19; the ecological status (i.e., air and environmental quality); the socio-technical capacity (i.e., disaster preparedness); and policy landscapes (i.e., policy setting) drawing from projects mentioned above.

The COVID-19 pandemic presented and continues to pose serious threats to the African urban population that threaten to undo the development gains over the years and undermine the achievement of the Sustainable Development Goals (SDGs). Just like in other continents, the majority of the reported COVID-19 cases in Africa have been found within cities. The spread and management of the pandemic in cities in Africa are compounded by historical development challenges such as the expansive informal settlements characterized by crowded shacks that fail to meet basic human standards. Besides, the underdeveloped urban infrastructure in the form of transport networks, Non-Motorised Transport (NMT) networks, open spaces, underequipped health facilities, and Solid Waste Management (SWM) systems

[1] The specific projects include: The Nairobi Risk Hub Project funded by the Global Challenges Research Fund under the Tomorrows Cities; The Governance of Sociotechnical Transformation project (GOST); and A Systems Approach to Air Pollution (ASAP) project.

pose challenges to the containment of the pandemic.

Given the pervasive underdevelopment in the continent and the need for global competitiveness, the pandemic highlights the need for multiple broad-based approaches when thinking about the future of African Cities. Based on the seminar outcomes, one approach is to adopt a people-centered, inclusive action agenda. In this approach, there must be a very strong argument that addresses some of the historical vulnerabilities beyond the surface, as well as the underlying injustices that have mainly been facing the urban poor. The other approach would be to adopt global competitiveness by ensuring cities are smart, tech-enabled, and most importantly, capable of addressing some of the economic concerns that the continent has. In that sense, this will require harnessing technology, opportunities, and markets that will enable Africa cities to be very competitive.

The following critical findings emerged from the discussions:

1. **Tackling underdevelopment to enhance resilience in cities:** vulnerability to shocks such as COVID-19 and other disasters in African cities is in part tied to colonial legacies, bad policies, and development choices. Thus, building city resilience needs to involve a comprehensive approach towards city development. This may involve city governments reviewing their methodologies and approaches to urban policies and deploying new tools and technologies that can foster efficiency and development such as the Smart City technologies. It will also include enhancing the capacity of municipalities and institutions to address development demands and to deal with the changing number of shocks and uncertainties.
2. **Opportunities for developing sustainable cities and building back better:** The pandemic has presented several challenges and opportunities that can be exploited towards building better, more resilient, and sustainable cities moving forward. For instance, despite the immobilization of the conventional models of transportation, sustainable transport models have picked up in the wake of the COVID-19 pandemic. Cycling and walking have become the main mode of transport for most people around the world, with governments directing investments into NMT facilities. Air quality has also improved across the world as more people continue to work from home, with a reduced need to travel. If sustained, these gains can transform the way of living

and planning in cities that in turn could result in enhanced resilience and sustainability in cities.

3. **The proliferation of innovations and self-reliance in cities**: the COVID-19 pandemic has created avenues for boosting local innovations, within the realization that countries and even cities can largely become independent. The high demand for locally produced health products required such as masks and PPEs created room for innovation within African cities and sub-national governments, as countries could not import products. Experiences in Kenya, show that cities and local governments have started serious policy discussions and are preparing "Counties and Cities Socio-economic Recovery Strategies" to address vulnerabilities. These strategies are long-term and will include a review of the national-level policies to ensure that cities can adapt to some of the shocks facing cities such as COVID-19, climate change risks, and many other risks.
4. **Adapting policy and practice across sectors for urban resilience:** resilience is essentially about adaptation in all dimensions whether environmental, social, political, physical, economic and others. Resilient policies and research require innovations that address the geometric designs for cities as well as the political, economic, and social dimensions of things with a focus on adaptation. For instance, in terms of policy and urban practice, future house designs will need to create spaces that allow for eventualities such as the COVID-19.

In sum, despite the many challenges, the COVID-19 pandemic has presented useful lessons for policy, research, and practice in relation to city building and resilience in the African continent.

ACKNOWLEDGEMENTS

This report is a product of the 1st ARIN preparatory seminar series held on 3rd September 2020, designed to stimulate discussions and debates towards the ARIN International Conference titled *Africa in the Post-COVID-19 World: Lessons for Research and Policy* that was held on 18th – 20th November 2020. The organization and execution of the seminar were overseen by the ARIN Secretariat, the ARIN focal points across the four African regions, and the 1st cohort of the ARIN fellows. Special acknowledgment goes to specific partner projects that were central to framing the thematic focus areas of the seminar: The Tomorrows Cities Nairobi Risk Hub[2] funded by the UKRI-GCRF informed the cities and resilience debates, the Governance of Sociotechnical Transformation (GOST)[3] project funded by the Belmont Forum and NORFACE Joint Research Programme on Transformations to Sustainability informed the debates around sustainable cities transformation and the A Systems Approach to Air Pollution (ASAP)[4] project funded by the UK-Aid. Lastly, we acknowledge the over 60 participants who actively engaged in the discussion providing thought-provoking questions and insights.

[2] https://www.tomorrowscities.org/city/nairobi
[3] https://www.ufz.de/gost/index.php?en=46184
[4] https://www.asap.uk.com/

1.0 Introduction

1.1 Background and Rationale

COVID-19 has presented unprecedented challenges and opportune moments for city development. The pandemic has had implications on the social setting, the economic status, the ecological environment, and the policy and regulations scapes of urban societies. Cities account for over 95% of the total COVID-19 reported cases globally[5]. The measures taken by governments to contain the spread of the virus such as lockdowns, curfews, and movement restrictions have had adverse impacts on city dwellers, especially informal settlements dwellers who form the majority of Africa urban residents.

Lockdowns and movement restrictions slowed down economic growth, compromised food security and the psychological well-being of urban residents as they were confined in their residences, sometimes cut off from family and social support networks. The accompanying job losses further added social and economic distress to thousands of families already living under precarious conditions in most African cities. City and municipal governments have also experienced challenges from the COVID-19 pandemic. Economically, cities and municipalities have had to waive certain revenue streams that they depend on, and yet they are required to provide the critical services that are central to addressing the COVID-19 pandemic.

The nature of what might emerge in terms of city resilience particularly in the African context is speculative at best, but one which requires an understanding of what has been (based on current evidence), what is desired (resilient city imaginaries), and the necessary (disruptive) socio-technical, economic and policy actions for the desired/resilient African cities of the future (beyond the pandemic). To this end, the African Research and Impact Network (ARIN) hosted a seminar on the 3rd of September 2020, as a step towards building an understanding of the current trends in disaster risk response including COVID-19, the mural of the 'resilient African city' beyond COVID-19, and potential pathways towards building city resilience. The seminar drew participation from a wide range of actors including policymakers, researchers, academics, civil society, and the private sector across the continent and beyond. This report presents the deliberations and outcomes of the seminar.

[5] UN-Habitat COVID-19 Response Plan, April 2020

1.2 Objectives of the Seminar

The specific objectives of the seminar were to:

i. Present evidence on the current state of cities in Africa in relation to COVID-19 response and the overall disaster landscape.
ii. Establish a common understanding of the desired 'resilient city' from the perspective of participants and identify the potential discourses and imaginaries likely to influence city rebuilding processes to post COVID-19.
iii. Identify potential pathways towards creating 'resilient Africa cities' post-COVID-19.

2.0 Approach to the Seminar

The seminar was the first in a series of monthly dialogues themed around COVID-19 and various facets of the society that included Cities; Climate Change; Science, Technology, and Innovations. These dialogues were geared towards informing debates and discussions at the ARIN Annual International Conference titled 'Africa in the Post-COVID-19 World: Lessons for Research and Policy' that was held on 18th – 20th November 2020.

On-going research and development projects[6] under different partnerships as well as Africa's COVID-19 experiences and responses formed the foundation of the seminar debates and discussions. The seminar opened with a presentation of evidence on the current state of cities in Africa in relation to disaster resilience, with a special interest in urbanization trends and their implications to disasters such as COVID-19; the ecological status (i.e., air and environmental quality); the socio-technical capacity (i.e., disaster preparedness); and policy landscapes (i.e., policy setting) drawing from projects mentioned above.

This was followed by robust discussions and reflections by select experts drawn from government, research, private sector, and civil society on the continent's response to COVID-19, expressions of their imaginaries of a resilient African city in the near and distant future, and potential innovative

[6] The specific projects include: The Nairobi Risk Hub Project funded by the Global Challenges Research Fund under the Tomorrows Cities; The Governance of Sociotechnical Transformation project (GOST); and A Systems Approach to Air Pollution (ASAP) project.

and disruptive steps towards realizing the imagined resilient city post-COVID-19 in terms of the social, economic, ecological, and policy landscape aspects.
Contributions from the overall seminar participants were also key in enriching the discussions and reinforcing the expert perspectives.

The sections below provide key highlights and outcomes of the seminar. Part 3.0 sets the context by exploring the current state of Africa cities in relation to COVID-19, overall disaster risk preparedness, and resilience. Part 4.0 highlights the panel and expert reflections on COVID-19 response within the continent and potential pathways towards urban resilience.

3.0 COVID-19 and African Cities

This section presents the context of the seminar which explored the current state of COVID-19 and African cities as well as resilience overall, drawing from the background presentations and discussions. The presentations were informed by various on-going projects across the continent and created the foundation for the seminar debates and discussions.

COVID-19 presented and continues to pose serious threats to the African urban population that threaten to undo the development gains over the years and undermine the achievement of the Sustainable Development Goals (SDGs). Just like in other continents, the majority of the reported COVID-19 cases in Africa have been found within cities. The spread and management of the pandemic in cities in Africa are compounded by historical development challenges such as the expansive informal settlements characterized by crowded shacks that fail to meet basic human standards. Besides, the underdeveloped urban infrastructure in the form of transport networks, Non-Motorised Transport (NMT) networks, open spaces, underequipped health facilities, and Solid Waste Management (SWM) systems pose challenges to the containment of the pandemic.

Crowding in informal settlements and lack of adequate water to meet the prescribed hygiene standards has remained a key challenge in managing the pandemic in slums. The existing weaknesses in the cities' infrastructure such

as the lack of adequate open spaces and proper public transport options to allow for social distancing continue to play part in the transmission of the

virus. Further, the health and physical planning infrastructure does not seem to provide an enabling environment to support the fight against the pandemic.

The congestion in cities in Africa is a key contributing factor to the spread and fast transmission of the pandemic. Similarly, the limited capacity within health facilities in terms of personnel and equipment continue to deter effective management of the pandemic.

Cities account for over 50% of Africa's GDP, with some countries like Botswana registering over 70%[7]. They also act as the gateways to and from other countries and continents in terms of trade and innovations. Therefore, what happens in cities tends to majorly affect the entire economy of any country, and potentially enhances or threatens sustainable development. For instance, the measures taken by some African governments to curb the spread of the COVID-19 pandemic such as lockdowns and curfews in cities have resulted in adverse socio-economic impacts. The projected growth of most cities within the pandemic period continues to decline, with most countries experiencing negative growth. In most urban areas, there is a huge dependence on the informal economy, which has adversely been affected by the lockdowns. In Nairobi for instance, within the first month of lockdown, 81% of the population had lost their means of livelihood and families were unable to sustain themselves[8]. These outcomes call for serious attention to the plight of cities and urban residents during and post the pandemic.

This begs the question, 'what therefore do we need to do to ensure that African cities are resilient and able to sustain their economies and population?' This is particularly important given that the future of Africa is projected to be urban, with the majority of the African population expected to live in cities by the year 2035. Therefore, cities will need to be at the forefront as we think about how to rebuild economies that can sustain these growing populations and rapid urbanization within the continent. The seminar, therefore, explored how African cities could be different after the COVID-19 pandemic, especially

[7] UN-Habitat (2020). COVID-19 in African cities: Impacts, Responses and Policies Recommendations.

[8] Population Council (2020), "Kenya: Gender effects of COVID-19 Responses from fourth round of data collection in five Nairobi informal settlements (Kibera, Huruma, Kariobangi, Dandora, and Mathare) June 13-16, 2020

concerning resilience, and what city imaginaries emerge in the face of the pandemic.

3.1 Imaginaries of African Cities: Exploring what a Post-COVID-19 City could look like

The imaginaries of what could emerge in cities post-COVID-19 are still unclear. The development of cities in the continent and elsewhere is based on different concepts and imaginaries such as the 'Smart City', the 'Just City', the 'Green City' etc. Experiences from 'The Governance of Sociotechnical Transformation (GOST)' project that examines the past and prospective transformations into the future in different sectors (energy, agriculture, and urban digital infrastructure) across several countries indicate that imaginaries are powerful in determining policy directions and investments. The imagined futures of cities post the pandemic and especially by those in power can therefore have serious consequences in how cities are built and rebuilt post-COVID-19.

One prevailing school of thought on urban transformation in the African continent is the smart high-tech city. The high-tech city envisions the need to be healthy, happy, and have efficient systems that are sustainable with innovative solutions. This pushes us towards a future of high-tech situation, and there are multiple ways in which we can get there, often derived by certain narratives. An example of these dominant narratives and how they influence city development can be seen in Kenya for example. In trying to push for the Smart Cities concept, the country has over the years encouraged the digitizing of cities through advancing technological development and ICT, as well as building from the ground up a Smart City, i.e., the Konza Technopolis City[9].

The ideal Konza Technopolis is imaginary. Though not yet built, with the propagation of the ideas, it has been perceived to be a beautiful city, full of life, with everything technologically advanced. Consequently, this imaginary city has started turning into a reality, and over time more people have bought and supported the idea. The government's investment into the idea of Konza Technopolis City goes to show that prevailing imaginaries can trigger some incentives towards a certain direction of development and investments. These incentives can be related to tax, access to markets, etc. It is therefore critical to

[9] https://www.konza.go.ke/

distill the imagined city futures post COVID-19 from different actors, as they have a bearing on the kind of cities, we inherit post the pandemic.

Discussions and debates in the seminar elicited hopes and imaginaries of a more sustainable, inclusive, and resilient city. Previous imaginaries informing city development do not however seem to have created inclusive cities that work for everyone. Indeed, discussions pointed out that COVID-19 in Africa cities has exposed the historical inequalities and deficiencies in the past city-building processes, especially given the adverse effects on the poor. Consequently, the pandemic needs to be viewed as a critical juncture, a critical way of disrupting some of the narratives and discourses that have previously shaped city development. This may lead to different kinds of imaginaries and forces that ensure socio-economic inclusion in the rebuilding process to produce better resilient cities.

3.2 Current Trends on Building Resilience in African Cities

COVID-19 has compounded the expansive disaster landscape in most African cities. Most cities experience disasters every so often in the forms of fires, flooding, earthquakes, landslide, toxic fumes, pollution, among others. In Nairobi for instance, major urban hazards include motor vehicle accidents, pollution, flooding, with the city most impacted by fires. These disasters not only greatly disrupt the lives of residents but compromise their resilience and that of the city infrastructure systems.

Evidence from the 'A Systems Approach to Air Pollution' (ASAP) project shows the precarious conditions that Nairobi urban residents are forced to contend with particularly in terms of the air quality. Over 18,000 Kenyans die every year as a result of air pollution[10] with most of them in Nairobi. A 2018 census on air quality of Moi Avenue Primary School as well as the Dandora dumpsite shows residents exposed to air toxic levels beyond the recommended World Health Organization (WHO) standards. Figures 1 and 2 below show the air quality in Moi Avenue Primary and Dandora dumpsite in 24 hours, respectively.

[10] Air pollution in Nairobi leaves Kenyan children struggling to breathehttps://www.bbc.com/news/av/world-africa-50665548

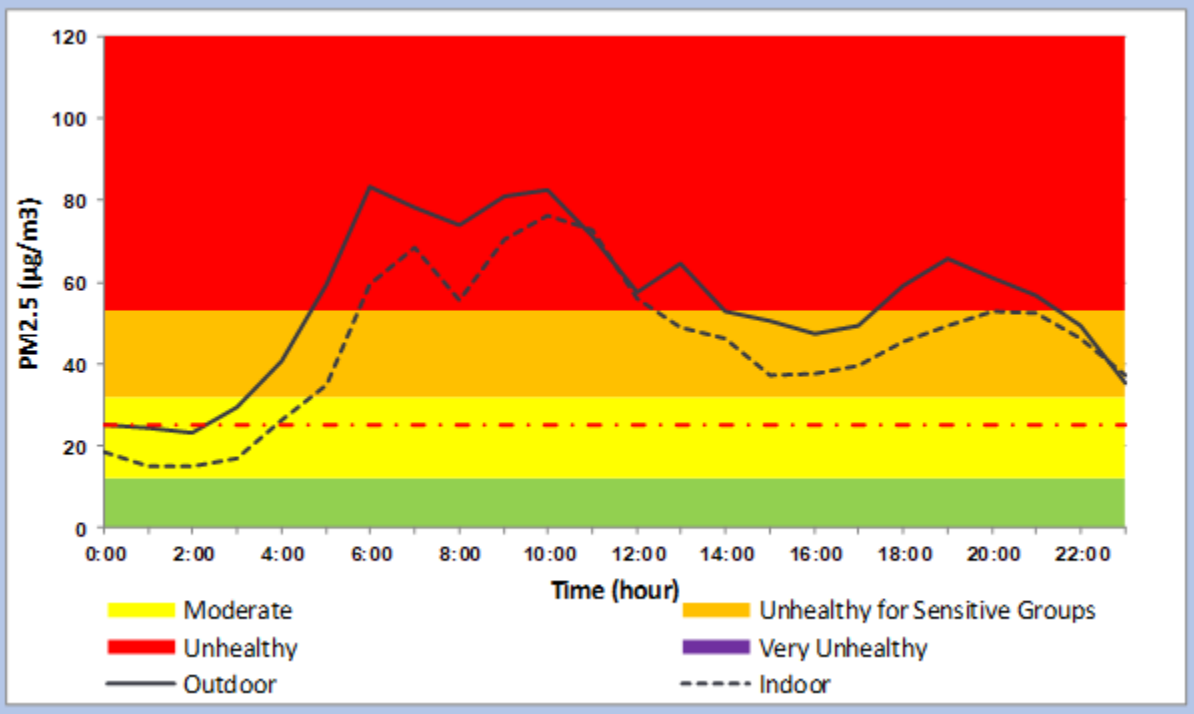


Figure 1: Moi Avenue Primary Moi (Average hourly concentrations 27 July - 5 Aug 2018)

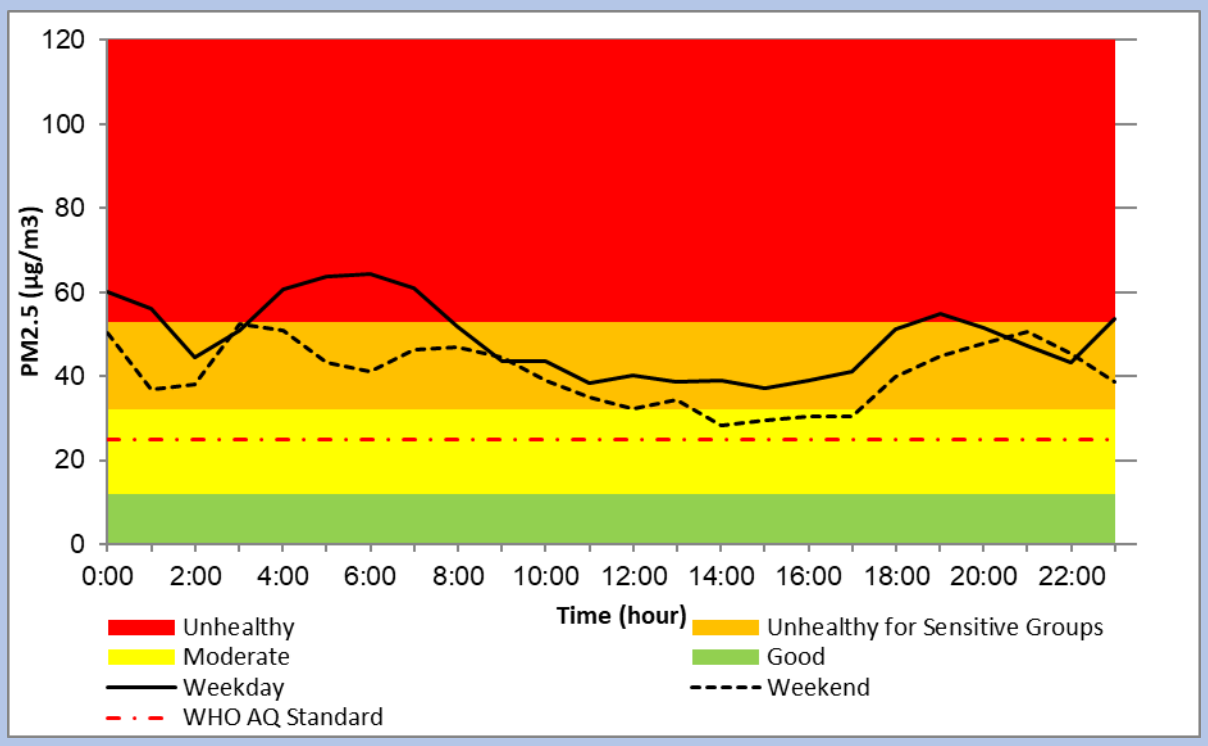


Figure 2: Dandora Dumpsite (Average hourly concentrations 6 Oct - 26 Oct 2018)

The first graph shows very significant pollution levels at Moi Avenue Primary School, with peaks of 80µg/m³ in 24 hours. These high levels of pollution are attributed to the fact that the site is in the middle of the city where the concentration of vehicle fumes is highest. These pose a hazard to the primary school children who attend school there every day. Indeed, the exposure at Moi Avenue Primary School is slightly higher than that at the Dandora dumpsite. On the face of it, it would appear that the dumpsite would be much more exposed given that it hosts almost all the city waste. This is however not the case since the biggest source of air pollution in the city is vehicle emissions. This denotes the need to put context into consideration when thinking about city resilience building, the response to COVID-19, and other disaster risks.

Using the data for Nairobi at those two specific sites and other data, projections show that a business-as-usual scenario without regulation could lead to dire consequences, ending up with a situation like that in Hanoi[11]. Currently, pollution levels in Hanoi are well above 120µg/m³, which is about 5 times over the WHO recommended levels.

11 https://www.iqair.com/us/vietnam/hanoi#:~:text=Hanoi%20ranked%20as%20the%20second,of%2045.8%20%C2%B5g%2Fm3.

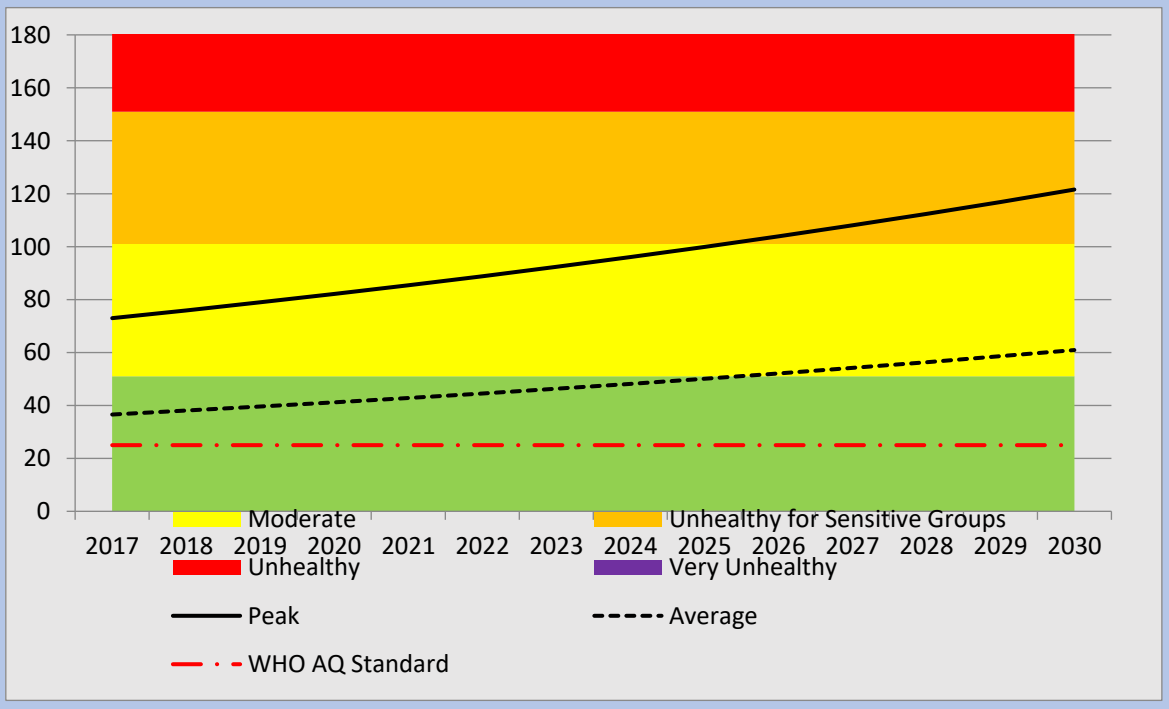


Figure 3: Hanoi Scenario - BAU (peak at 122 µg/m3 by 2030 with daily averages of 61 µg/m3)

There is still hope, however, if proper measures are taken to control vehicle emissions. One way would be through properly managed public transport as most of the emissions are attributed to vehicles. The Santiago scenario is a best-case point with only peaks of 95 µg/m³ and a daily average of 45 µg/m³. It is projected that if Nairobi puts in place measures to control vehicle emissions and clear monitoring, then it will be possible to bring down the emission levels to manageable levels. Indeed, experiences of lockdowns and limited movements during the pandemic have shown enhanced air quality levels across cities in the World.

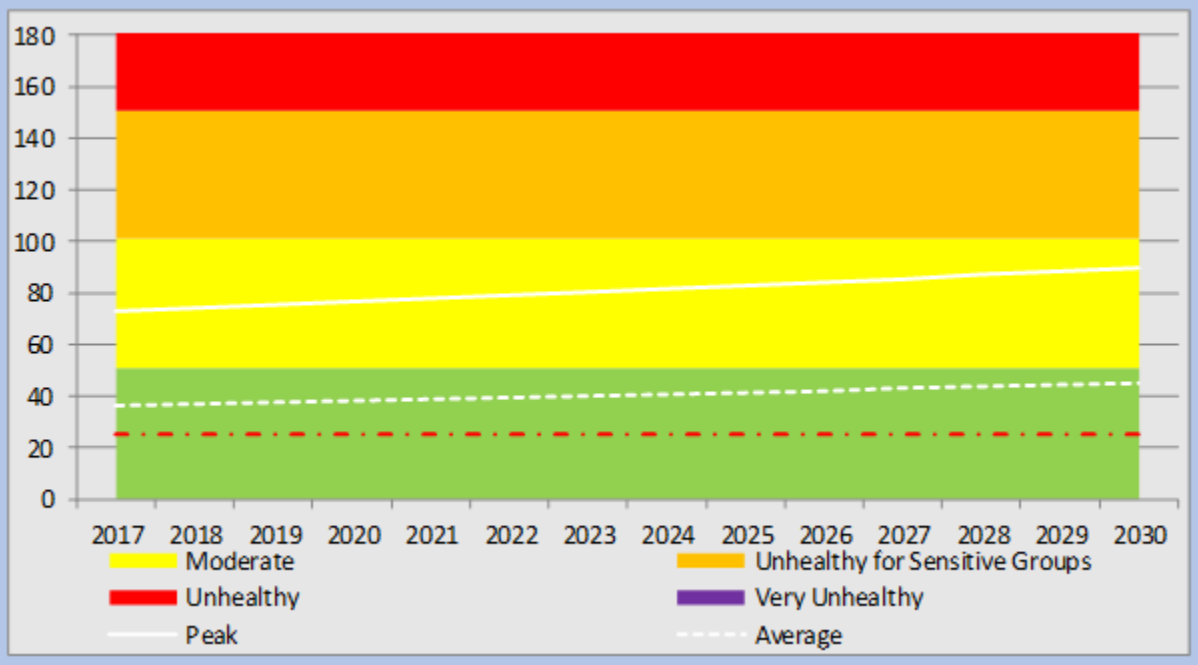


Figure 4: Santiago Scenario (peak at 95 µg/m3 by 2030 with daily averages of 45 µg/m3)

3.3 Understanding Risks for Building Future Resilient African Cities

The preceding evidence denotes that building city resilience post-COVID-19 requires addressing not only the impacts of the pandemic but other hazards as well. Thus, understanding the dynamics of risks is important for building future resilient African Cities. This will require city-specific efforts towards understanding the particular risks in each city and formulating and updating policy frameworks to support the building of future resilient cities. Similarly, it would be critical for African city governments to engage with researchers, practitioners, and local communities towards a basic understanding of the disaster risk facing the cities, as well as generate some policy evidence.

Experiences from the Tomorrow's Cities Nairobi Risk Hub, which has been working with the city of Nairobi for the past year to address disaster risk reinforces the need for a clear and shared understanding of local risks that is integrated into policy and practice. Despite the understanding of some of the global, regional, and national disaster and risk policy frameworks by the key city stakeholders and experts, there is very limited evidence to support incorporating these frameworks into the local development practice.

4.0 Key Insights from the Discussions and Deliberations

This section presents the highlights emerging from the discussions and deliberations. Various experts are drawn from government, academia, research, civil society, and private sector provided personal reflections on the COVID-19 experiences across different city contexts in terms of response, lessons for policy and research as well as potential pathways to building resilient cities that can withstand similar incidents like the pandemic.

4.1 Underdevelopment as Key to Disaster Vulnerabilities in African Cities

According to the development experts in the seminar, vulnerability to shocks such as COVID-19 and other disasters in African cities is in part tied to colonial legacies, bad policies, and development choices. Most African cities have primarily remained as colonial cities, as there have not been efforts to refocus them towards independence stages. As a result, cities in Africa remain vulnerable due to underdevelopment. These underdevelopment-fueled vulnerabilities go far beyond overt climate change and COVID-19 to include extremely fragile systems, informal economies, informal settlements, and underdeveloped systems of governance. These vulnerabilities in turn predispose urban residents to serious stresses, shocks, and even potential huge collapses of these cities. Aspects such as COVID-19 and climate change only serve to expose these underlying vulnerabilities.

> "***We must begin rethinking the future of African Cities from the point of view of developing them into economic entities that can serve the countries that these cities belong to. We must begin to design an African System of the future that delivers not just on the economy, but also the new way of life in Africa. What is the current policy context? The traditional approach to policy has always been to deal with this underdevelopment. An attempt has always been made to deal with infrastructure, housing, sanitation, and a whole range of urban areas that remain underdeveloped. Besides, there are emerging issues; there are concerns around climate change, high population growth, informality, and so on."*** [Patrick Adolwa, Urban Development Specialist]

Further, there was a consensus that building city resilience will involve a comprehensive approach towards city development. This may involve city governments reviewing their methodologies and approaches to urban policies and deploying new tools and technologies that can foster efficiency and development such as the Smart City technologies. It will also include enhancing the capacity of municipalities and institutions to address development demands and to deal with the changing number of shocks and uncertainties. These changes are particularly important now that the continent is looking at ways to respond to unintended or unforeseen environmental issues of public health, and how to plan a new future for cities.

> "***In the context of hugely underdeveloped systems, sometimes it is a huge challenge to think about smart cities yet the future is about smart resilient cities that are globally competitive. The dilemma of policymakers is how to transform an underdeveloped system into a technologically globally competitive system. In terms of municipal systems, there is a need for practitioners to factor in shocks such as floods, tsunamis, earthquakes, and pandemics such as COVID-19. COVID-19 is a good example of how municipal systems can collapse. The pandemic has deconstructed the traditional municipality systems; people could not go to workplaces, public transport was paralyzed, and schools were closed in many countries. In Uganda for example, the public transport was virtually closed".*** [Patrick Adolwa, Urban Development Specialist].

In essence, the future African city beyond COVID-19 is a much more complex proposition. City governments must address underdevelopment, restructure their economies, redefine themselves in terms of transformation from post-colonial cities and think about policies at a very local level. Even though the national level policies exist, every city must think about developing detailed specific policies beyond national urban policies. City governments must also think about technology and the economy. This could include adopting appropriate technologies, developing local economic nodes, and making a strong case for revamping economic policies and programs at the municipal level to build resilient cities that create opportunities rather than leaving this entirely to the national governments.

4.2 Exposed Historical Vulnerabilities in African Cities

As previously highlighted, the COVID-19 pandemic has exposed how cities have historically neglected existing vulnerabilities in the context of underdevelopment. This is evidenced by the insufficient primary healthcare systems, education systems, secure livelihoods, and social security across all dynamics of gender, age, and so on. Risk reduction involves addressing vulnerability and resilience building. Building resilience is not a replacement for those underlying concerns. Rather, reducing vulnerabilities requires facing some of the ongoing persistent difficult challenges in our societies such as the socioeconomic injustices and inequalities manifested in most African cities in form of slums and informalities.

According to the participants, this will involve not just the superficial expressions of overcoming injustice and inequality but rather a closer look at the real causes, which are historical and linked to power relations that reach into political systems and decision-making processes. Social justice ought therefore to be a central part of building resilience post the pandemic. This will in part involve adopting and fulfilling global and national obligations towards resilience by, for instance, adopting the 'build back better' mantra enshrined into the Sendai Framework, in which most African nations are a signatory.

4.3 Mismatch between COVID-19 responses and the needs of city residents

Discussions pointed to the evident mismatch between the supply and demand of the pandemic response utilities. Surveys show the need for governments to include a consideration of a wide array of economic, livelihood, and social aspects in response plans, especially for city residents. Most governments focused on acquiring personal protective equipment, testing kits, masks, and sanitizers to protect their citizens, while within the first few months into the pandemic, development partners, the private sector, and the civil society directed focus to realign the existing policies to combat the pandemic as a health issue. A survey carried out within the informal settlements in Nairobi revealed that what the majority of the slum dwellers needed most was an improvement of the economic environment, restoration of income, businesses, and their sources of livelihood, as well as relief food. The residents did not

consider the pandemic as a health issue, the angle from which most government interventions focused. Other social issues that emerged strongly include mental health, domestic violence, and teenage pregnancies.

4.4 COVID-19 presents opportunities for Sustainable City Development and Building Back Better

The pandemic has presented a number of challenges and opportunities that can be exploited towards building better, more resilient, and sustainable cities moving forward. For instance, despite the immobilization of the conventional models of transportation, sustainable transport models have picked up in the wake of the COVID-19 pandemic. Cycling and walking have become the main mode of transport for most people around the world, with governments directing investments into NMT facilities. In Paris, for instance, over 50 KMs of the existing roads have been converted into cycling tracks, to ensure more people still exercise social distancing as they cycle. The city of Nairobi has also converted some lanes and parking spaces in the CBD into cycling and walking lanes to allow for social distancing, a move that would have been nearly impossible under normal circumstances. The public transport in Kenya upon which most low-income populations depend on has also experienced some innovations with public service vehicles (*Matatus*) reducing the number of seats to enable social distancing. Air quality has also improved across the world as more people work from home, with a reduced need to travel. If sustained, these gains can transform the way of living and planning in cities that in turn could result in enhanced resilience and sustainability in cities.

> "***The questions we need to ask ourselves moving forward is how to maintain such momentum and preserve the gains. For instance, how can we maintain sustainable transport as an essential service and as a main mode of transport? We have not seen that prioritized before, because if you look at how roads are designed, priority is given to motorists. Most investments are on very wide carriageways and you can tell by the number of accidents reported. In 2019 there were almost 4,000 deaths associated with road fatalities."*** *[Peninah Ndegwa, Transport Expert, ITDP]*

Sustainable and resilient city building post-COVID-19 will therefore require the need to think about how to move people at the least environmental, economic, and social cost. This can be done by, firstly, prioritizing public transport and

Non-Motorized Transport (NMT) (walking and cycling). Further, it will be critical to ensure that efficient mass public transits that limit reliance on private vehicles are deployed. The use of Bus Rapid Transit (BRT) that has already been implemented with success in several African cities and planned for others such as Nairobi can be used to achieve this and significantly reduce the traffic emissions coming from vehicles.

4.5 COVID-19 spurred Innovations and Self-reliance in African Countries and Cities

A number of opportunities to innovate have been presented by the pandemic. For instance, in the wake of restricted movements and joblessness, some people and companies have leveraged IT and emerging technologies to stay afloat and to create jobs. Among other opportunities created by COVID-19 include the boosting of local innovations and the realization that countries can largely depend on themselves. The high demand for locally produced health products required such as masks and PPEs created room for innovation within African cities and sub-national governments, as countries could not import products.

Nations are also incorporating recovery strategies into policy. Experiences in Kenya, show that cities and local governments have started serious policy discussions and are preparing "Counties and Cities Socio-economic Recovery Strategies" to address vulnerabilities. These strategies are long-term and will include a review of the national-level policies to ensure that cities can adapt to some of the shocks facing cities such as COVID-19, climate change risks, and many other risks. Further, the country has adopted innovative ways to finance local level authorities to carry out their mandate.

"COVID-19 has sensitized the need to critically look at the existing planning and development tools and how effective they are in meeting citizen needs. For instance, the law mandates all cities in Kenya to develop urban development plans. However, it needs to be established if the plans are responsive, or if they are incorporating disaster and vulnerability and the measures to control or to manage these disasters. It is very critical for the different practitioners and different interest groups to look at how these particular plans can respond to the disasters." *[Nicodemus Mbwika, Council of Governors (CoG), Kenya]*

4.6 Recovery and Resilience Building Processes Ought to be City Specific

City planning remains a critical step towards building resilience post the pandemic. How we plan our cities will however require an understanding that how different elements of cities function are varied across all different cities. Therefore, there is no particular solution for resilience. It will be important to fundamentally understand each city and the transitions that they experience, and how these can be modified to fit into the specific problems towards building their resilience.

Having a clear understanding of each city's context as well as harnessing the potential of cities as spaces of opportunity owing to the huge concentration of people and potential for innovation is one way to build resilience. A critical look at many African cities reveals that many features that urban planners and municipal administrators would principally be able to design and execute are generally absent or inadequate. COVID-19 presents a challenge to city makers to make the necessary provisions based on each city's pressing needs and demands.

> ***"As much as COVID-19 seems to have presented heavy challenges, it should be seen as an opportunity that is inviting urban planners, individuals, urban dwellers, government practitioners, and all-round, to think how they can organize, plan the cities, both in a spatial dimension and social dimension. In a human dimension, who gets prioritized in the cities, remembering that citizens make the cities and must be at the forefront of planning for resilient cities and not only the buildings but also the systems that are put in place. How do these systems work to improve the livelihood of the people living in the cities? The conditions present have to produce certain outcomes, and these outcomes will be as a result of how governance takes shape in our cities."*** *[Dorcas Nthoki, Urban Development Researcher, TU Dortmund]*

Besides, resilience building is a process as much as cities remain to be dynamic spaces. For example, issues of migration into cities continue to shape the norm of cities, and with all the prognosis of urban concentration in cities, and with the future of cities being more complex than the capacity at present, it is expected that cities will continue to evolve and expand. Consequently, cities and municipalities must remain dynamic and able to function under changing conditions and uncertainties.

4.7 Redesigning and Adapting Policy and Practice across sectors for Urban Resilience

Resilience is essentially about adaptation in all dimensions whether environmental, social, political, physical, economic and others. Building urban resilience will therefore require responding to questions such: How can we build future cities that can weather the storms and adapt to the shocks and stresses that are occasioned by anthropogenic and natural disasters such as climate change, tsunamis, landslides, rise in sea level, flooding, among others? How can we design, manage and plan cities that can weather economic downturns? How can we come up with political processes that for instance limit air pollution?

Discussions pointed the answer to adopting a multiple dimensions approach of resilience.

> ***"Many of the policies that we have had in the past have tended to be monolithic. We need diversity and pluralism when we talk about urban resilience and adaptations. We need to think beyond the monolithic entities when talking about housing provisions, public transport, solid waste management, and water service provision."*** *[Dr. Emmanuel Midheme, Research, and Urban Development Specialist]*

In terms of policies and research, this may require innovations that address the geometric designs for cities as well as the political, economic, and social dimensions of things with a focus on adaptation. For instance, in terms of housing, there is a need to design homes, moving forward, that can facilitate home-based care and isolation, as seen in the recent past when home-based care became a need. For this to happen, future designs in terms of policy and urban practice will need to create spaces that allow for this kind of eventuality.

5. Conclusion and Recommendations

Despite the many challenges, COVID-19 has presented useful lessons for policy, research, and practice in relation to city building and resilience in the African continent. First, COVID-19 has exposed "intrinsic vulnerabilities" especially for the urban poor. Some of these vulnerabilities have not been well understood for a long time even though a lot of research, discussions, and planning have been invested to understand urban resilience. The COVID-19 experience underscores the need to bring these vulnerabilities to the surface for policy action and research.

Given the pervasive underdevelopment in the continent and the need for global competitiveness, the pandemic highlights the need for multiple broad-based approaches when thinking about the future of African Cities. Based on the seminar outcomes, one approach is to adopt a people-centered, inclusive action agenda. In this approach, there must be a very strong argument that addresses some of the historical vulnerabilities beyond the surface, as well as the underlying injustices that have mainly been facing the urban poor. The other approach would be to adopt global competitiveness by ensuring cities are smart, tech-enabled, and most importantly, capable of addressing some of the economic concerns that the continent has. In that sense, this will require harnessing technology, opportunities, and markets that will enable Africa cities to be very competitive.

Recommendations

i. Policy dilemmas need to be understood in the context of building African resilient cities. It is important to pinpoint areas of contestations and manage conflicts to shape a shared policy vision.
ii. There is a need to create platforms that can mediate the different and competing narratives around city development. This will ensure that a consensus is reached, where the proposed actions and solutions for the future of the continent are collectively owned, but most importantly bridges the gap between social injustices and the broader developmental ambition.
iii. Sectoral coherences in policy would be fundamental in supporting the city, subnational, national, and continental 'build back better' options
iv. It is critical to not only build resilience in urban communities but also in urban institutions that will allow them to adequately address the needs

of urban communities. In the process, it is important to consider the unique identity of each city and resident.

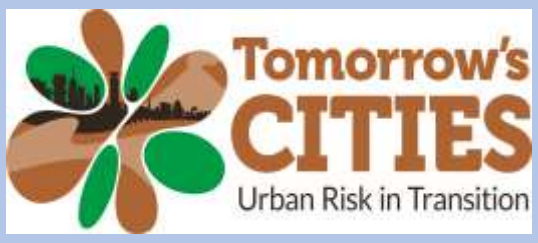
v. There is an urgent need to nurture good governance even as urban communities proliferate the cities and demand inclusion in city government processes.

vi. Urban processes and communities remain complex and dynamic and this should be captured in both policy and practice towards city resilience. Post COVID-19, there is a need to design cities of the future that can adapt to pandemics and other shocks and stresses that are likely to emerge in the urban world.

5. Annexes

Annex 1: Concept Note

Partners



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