



PEDESTRIANIZATION AND NON-MOTORIZED TRANSPORT ISSUE 1: USERS

Pedestrians on a Kenyan street. © Billy Miron, Shutterstock.

Why give walking so much prominence? Nairobi is already a walking city with almost 47% of all daily trips made on foot. **This results in 2.27 million trips made daily by walking.**

Pedestrianization is the process of making a street or part of a town into an area that is only for people who are walking, not for vehicles or any other form of motorized transport, such as *bodabodas*. Our Pedestrianization Newsletter Series will be a three-part series covering **users, safety, and infrastructure** and seeks to support decision-making geared towards improving the non-motorized transport (NMT) experience in Nairobi. In this issue on 'users' we examine the demography of pedestrians in some of Nairobi's busiest walking corridors to gain a better perspective of their needs. Naturally, when half of the city walks daily, one would be curious to find out the following information from pedestrians:

- 1. Where are they coming from and where are they walking towards?**
- 2. What services do they seek to access?**

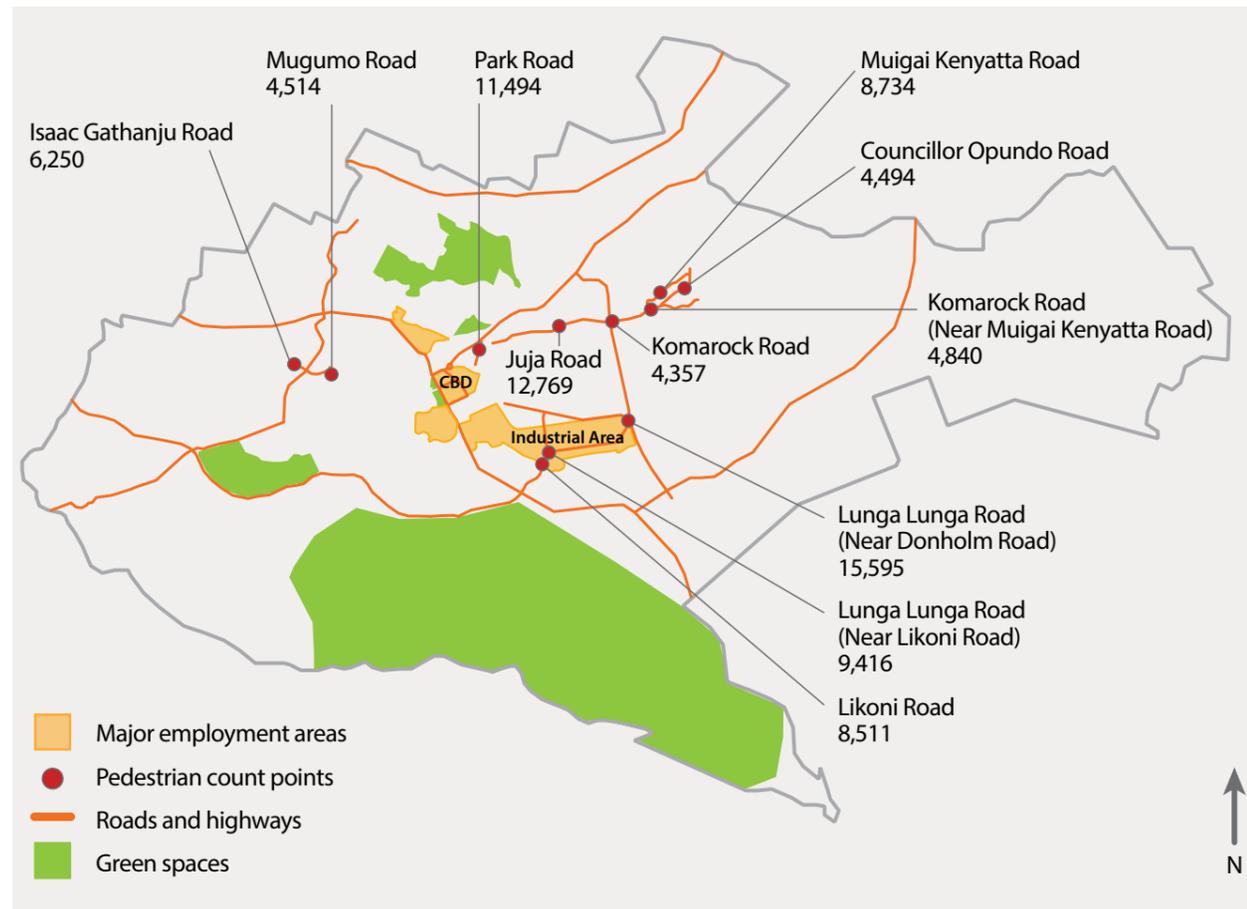
- 3. What is the average duration of their trips?**
- 4. Do they enjoy walking?**
- 5. What challenges do they face while walking?**

NMT surveys commissioned by the Ministry of Lands, Housing and Urban Development (now, Ministry of Lands and Physical Planning) and Nairobi City County Government were conducted by Sai Consulting International Ltd and CAS Consulting Engineers in 2016. These surveys were updated by Nairobi Metropolitan Services (NMS) in partnership with the Climate and Development Knowledge Network in December 2020 to shed more light on the questions posed. With a sample size of 4,671 NMT users randomly distributed across the busiest walking corridors, survey respondents were profiled and interviewed about their trip's purpose, the ease of walking and any safety concerns, among other issues. Observation and photographs were also used as data collection methods.

AN OVERVIEW OF NAIROBI'S MAJOR PEDESTRIAN CORRIDORS

Let's first get an overview of where most of the walking happens in Nairobi.

Figure 1: Nairobi's major pedestrian corridors showing number of pedestrians per day



The selection of the key corridors was based on a number of factors, which include:

- Urban centers with high-volume commercial activity.
- Public transport stations (bus terminus and railway stations).
- Neighborhood markets.
- Slum area environs and access routes; These areas were selected given the importance of improving the mobility of vast populations to and from densely-populated estates, low-income estates and informal settlements..
- Primary schools, secondary schools colleges and universities.
- Public service facilities (hospitals, markets, public offices, city hall).
- Recreational hubs like parks and green corridors.
- Completing missing transport links to provide connectivity between different road corridors for continuous flow.

Survey findings

- **Eight out of the 10** major pedestrian corridors are located in the east of the city, with close proximity to the Industrial Area: a major employment zone in Nairobi.
- The surveys revealed that **dust, vehicular emissions, roadside garbage, open sewage and industrial smoke are major pollutants.** Our June 2020 newsletter on 'Air Quality' revealed that the east of the city is more polluted than the west owing to heavy industry and congestion. Since 80% of the busy corridors are in the east, many pedestrians are exposed to poor air quality – compromising their health and well-being. For this reason, it is important to prioritize the improvement of air quality, particularly in congested areas that serve as socio-economic hubs for thousands of city residents.
- **Pedestrian corridors have limited access to green spaces.** A businessman interviewed along Lungalunga Road emphasized the need for shade and street furniture. He relayed that pedestrians tend to shelter under his business

when it gets too sunny, which affects his ability to trade. Unnecessary cutting down of trees to accommodate road expansion has become rampant in Nairobi. A good example of countering this trend is the preservation of the iconic fig tree,² which was earmarked for cutting along Waiyaki Way owing to ongoing construction of the Nairobi Expressway. This demonstrates that many trees can be preserved without interfering with the construction of transport projects.

A recent audit³ of public spaces in Nairobi conducted by UN Habitat highlights the gaps in the distribution, accessibility and quality of public open spaces and seeks to restore Nairobi as the "Green City in the Sun." Such initiatives, if implemented by the respective government entities, will contribute to greening efforts and improve the pedestrian experience, while creating a more sustainable and inclusive city.

FINDINGS FROM A JOURNEY MAPPING EXERCISE

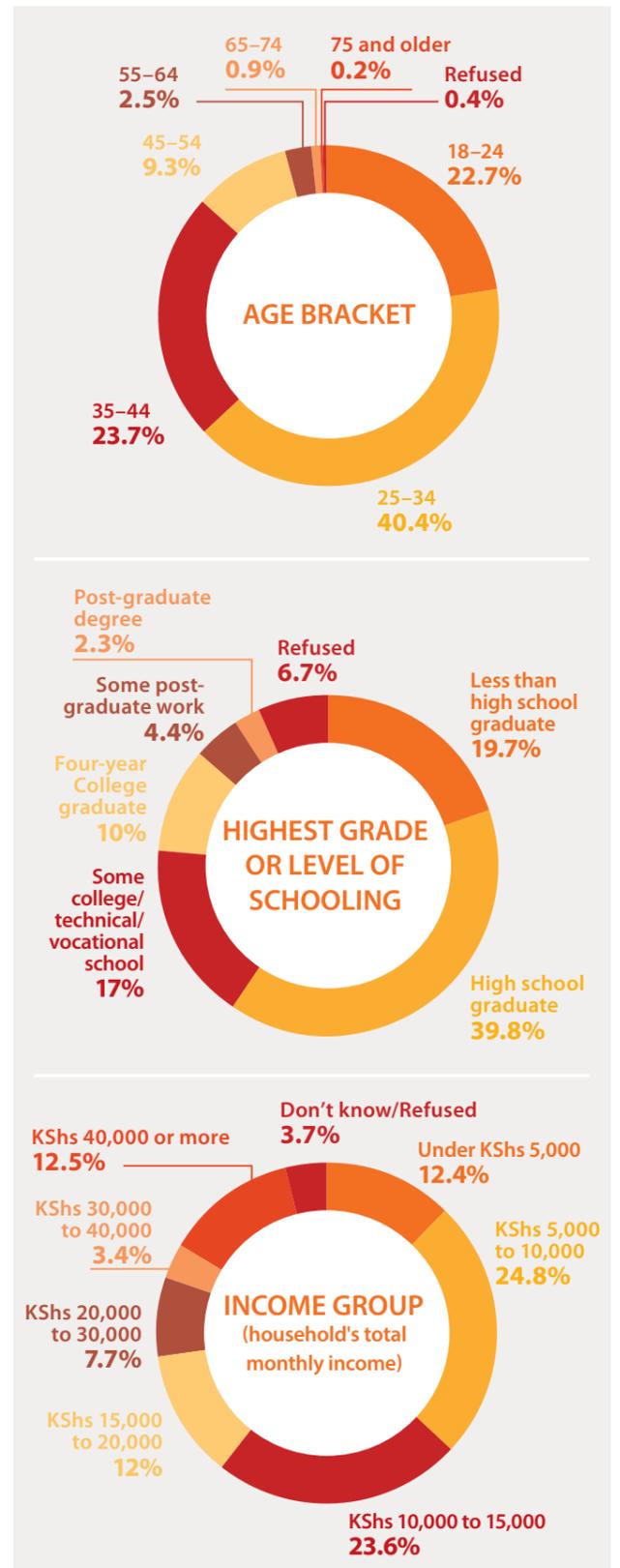
Survey respondents were asked to map their walking journeys to shed light on how and where their journeys begin and end. This is also known as first and last mile connectivity, which is important across all modes of transport. The trends revealed that:

- **Most journeys begin on foot**, including for those who have to walk to access public transport and *bodabodas*, and those who make their whole journey using NMT.
- Most NMT journeys in Nairobi **originate at dense residential areas and terminate at major employment areas.** For example, NMT journeys go from Kangemi to Westlands, Kibera to Industrial Area, Pipeline to Kayole and Industrial Area, Kawangware to Kilimani and Kileleshwa. All these journeys tend to cover **long distances exceeding five kilometers.** This implies that those from poorer, high-density neighborhoods travel very long journeys to access major employment centers. This makes them 'time poor' compared to those who have other mobility choices.
- **Short NMT journeys are predominantly within high-density neighborhoods.** For example, all journey mapping done in Dandora showed that origin and destination was within the neighborhood.
- Pedestrians will also **seek shorter routes wherever possible**, even in the event of a longer route having better NMT infrastructure.

These trends should assist authorities as they roll out a network of NMT infrastructure which caters for first and last mile connectivity. Additionally, the trends are useful for creating an integrated transport system where users have seamless connectivity and choice of mode of transport.

PROFILING NAIROBI PEDESTRIANS ACROSS AGE, EDUCATION, INCOME AND GENDER

So, what is the profile of the average pedestrian in Nairobi?



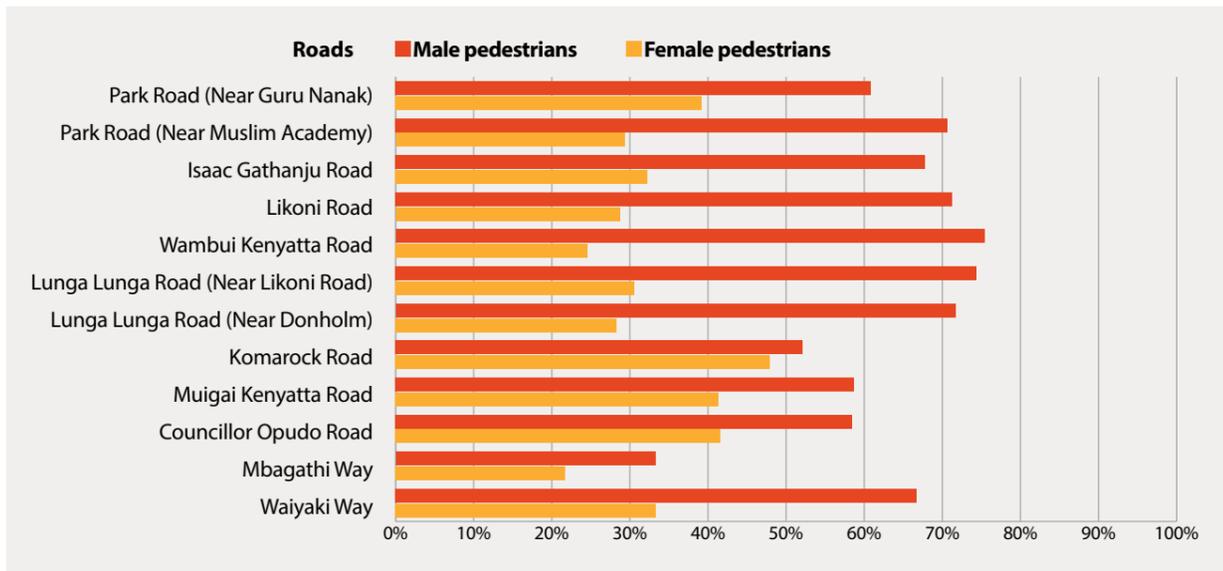
Survey findings

Age brackets: The 25-34 year age bracket is the most common at 40.4%. 86.8% of pedestrians fall between the age bracket of 18-44, corresponding to the youthful population in Nairobi city. As age increases, pedestrian numbers decrease. In our next Newsletters on safety and infrastructure, we will examine whether the NMT experience caters to diverse user needs, such as those of children, persons with disabilities and the elderly. This is an important facet of an inclusive transport system.

Income levels: The majority of pedestrians earn between KShs 5,000-15,000 (48.4%). This indicates that most pedestrians are low-income earners often walking out of no choice. Further, more effort is needed to shift behavioural attitudes from viewing walking as being reserved for the poor, to viewing walking as a healthy and environmentally-friendly mode of transport for all.

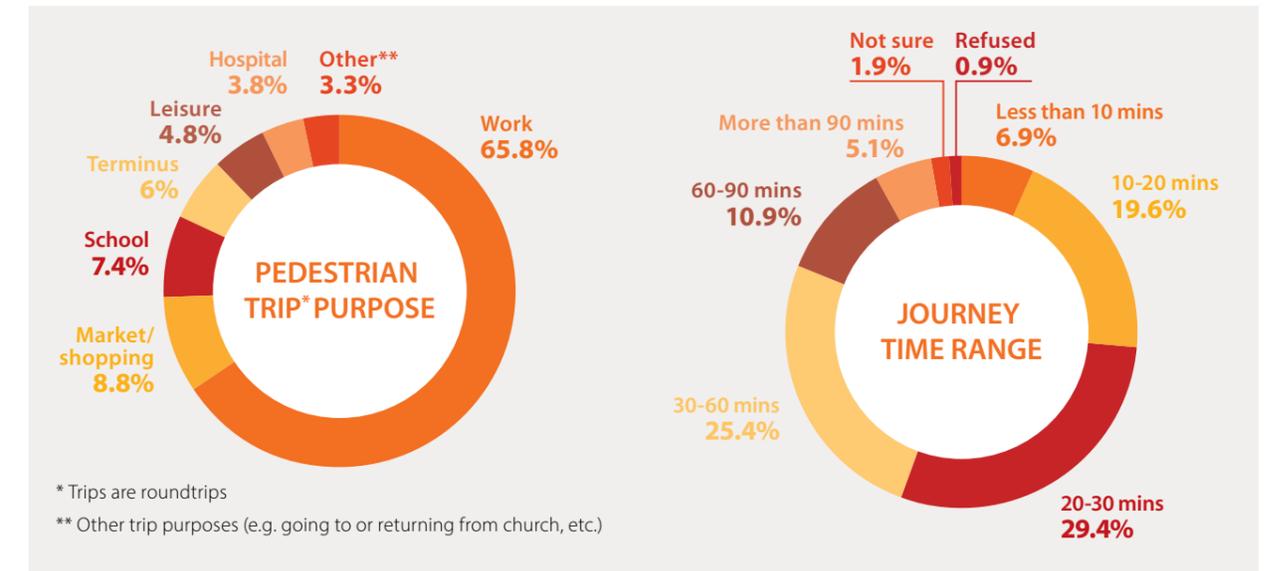
Education levels: 73.6% of pedestrians range from high school graduates to holders of post-graduate degrees, indicating high literacy levels. This can be useful in guiding the design of communication strategies and public awareness campaigns on NMT. It is interesting to note that as levels of education increase, the pedestrian volumes decrease. Those with post-graduate degrees recorded the lowest number of pedestrians (2%) compared to those with high school certificates (39%). Does this confirm the aspiration to motorization that many have in society?

Gender: All 10 corridors examined had more male pedestrians than to female pedestrians. This could be one of the reasons contributing to high male fatalities recorded on Nairobi roads, details of which will feature prominently in the next issue on safety.



SERVICES ACCESSED BY PEDESTRIANS

What services are pedestrians accessing and at what time?



Survey findings

- The **majority of walking trips are made to and from work** at 65.8%, followed by shopping at 8.8%.
- Most walking trips (54.8%) range from **20 minutes to 60 minutes**.
- Morning peak hours range from **6:30am-8:30am**, while evening peak hours range from **5:00pm-6:45pm**, when most pedestrians are commuting for work. Trends regarding peak times can be useful in informing traffic-calming measures to increase pedestrian safety and decrease motorised congestion and pollution. This calls for inter-agency collaboration with NMS, the National Transport and

- Safety Authority and the Kenya Police. These trends can also support "car free day" initiatives by providing evidence-based information on which days and areas are most suitable to kick off these initiatives.
- A small random sample of 40 survey respondents showed that 63.2% of **women made more shopping trips** versus 36.8% of men.
- Corridors located in **middle-income neighborhoods** **observed more leisure walkers and joggers** compared to those in low-income neighborhoods where very few leisure walkers and no joggers were spotted.



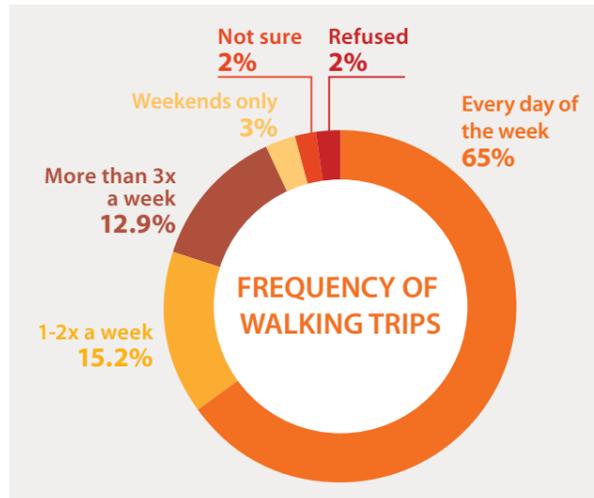
Ongoing road works on footpath, Kangundo Road. © CDKN.

Have you heard of the 20-minute city?

The 20-minute city⁴ is about giving people the ability to meet most of their everyday needs within a 20-minute walk, cycle or local public transport trip from their home. The goal is that this combination of modes would offer a reasonable size catchment area in which people, jobs and services, including recreational opportunities and nature, are accessible. Cities designed in this way bring wide-ranging benefits. These include: less time in traffic, fewer road accidents, lower greenhouse gas emissions, reduction in noise pollution, better health from a more active lifestyle, more choices about how to travel, and more connectivity within your locality which translates into spending more money in local businesses. Originating in Portland, Oregon, the concept is gaining traction as cities across the world, such as Melbourne and Singapore, are implementing it.



FREQUENCY OF WALKING TRIPS



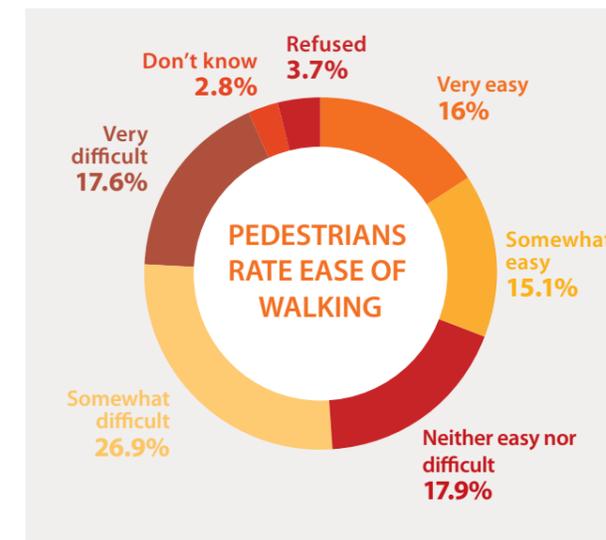
Survey findings

- The majority of pedestrians (65%) walk every day of the week with the least pedestrian volumes recorded during the weekends. This is expected considering most walking trips are to commute to and from work.
- Out of a random sample of 295 respondents, **39.2% reported walking because they cannot afford public transport** and 10.3% because public transport does not exist from their homes to their destination. This calls for the need to examine strategies that can subsidize the **cost of public transport**, as well establishing an integrated transport system that seamlessly incorporates different modes of transport and provides users with a choice on how to travel.



Open drainage and garbage strewn on footpath, Landhies Road. © CDKN.

PEDESTRIANS RATE EASE OF WALKING



Survey findings

- More pedestrians rated their journey as difficult or very difficult (44.5%), versus those who said it was easy or somewhat easy (31.1%).
- Congestion attributed to motorized traffic is the most pressing challenge for pedestrians at 40.9%, followed by lack of sidewalks at 26.7%.
- Many pedestrians struggle with encroachment of their spaces by *bodaboda* riders, cars parked on sidewalks and street vendors. Commendably, NMS is addressing the encroachment of NMT spaces. NMS has issued a notice to motorists, riders, florists and public service vehicle operators to desist from encroaching on NMT facilities, and failure to comply will result in hefty penalties.
- Other concerns such as traffic accidents, muggings, open drainage and lack of streetlights were mentioned and will be addressed in the safety and infrastructure newsletters to be published soon.

CONCLUSION

A glimpse into the life of your average pedestrian in Nairobi reveals that many walk to work, generally owing to low-income levels and a lack of available alternatives. Pedestrians are faced with several challenges in their walking journey: from a lack of green spaces, pollution, muggings, and congestion, to a lack of walking paths, encroachment and traffic accidents, among others. The majority of these challenges are either safety related or infrastructure focused. Our next two issues addressing safety and infrastructure will explore these challenges more deeply and recommend possible actions for respective NMT stakeholders.

What makes it difficult to walk along your journey route?

- Roads too busy/too much traffic **40.9%**
- No sidewalks **26.2%**
- Health issues **6.5%**
- Don't know **5.8%**
- No street lights/lighting is bad **5.4%**
- Refused to answer **5.4%**
- Unsafe neighborhood/safety **4.5%**
- Too many hills/big hills on walking route **4.3%**



Hilly terrain on Kangemi, Waiyaki Way. © CDKN.

MEET YOUR CITY CHAMPIONS



Mercy Wanjohi

Acting Assistant Director Gender Affairs, Nairobi City County

“My vision is to see gender mainstreaming in all county’s plans, programs and policies”



Moses Kuyiki

Transport Engineer, Nairobi Metropolitan Services

“My vision for the city is a Nairobi where everyone can get to their destination in a safe and timely manner while using reliable means.”



Roadside dust along Likoni Road. © CDKN.

ENDNOTES

- 1 Climate and Development Knowledge Network (June 2020) ‘Nairobi NMT Newsletter on Air Quality.’ <https://cdkn.org/wp-content/uploads/2020/06/NMT-Newsletter-June-2020.pdf>
- 2 Standard Newspaper (December 25, 2020) ‘Iconic fig tree on Waiyaki Way adopted by NMS for preservation.’ <https://www.standardmedia.co.ke/nairobi/article/2001398294/iconic-fig-tree-on-waiyaki-way-adopted-by-nms-for-preservation>
- 3 UN Habitat (2020) ‘Nairobi City County: Public Space Inventory and Assessment.’ <https://unhabitat.org/nairobi-city-county-public-space-inventory-and-assessment?fbclid=IwAR38vXx83fgTmhMPTyAlhntbq-XwuPCzKRA18YRkqIjXJ8QMRNWq4-jzTRQ>
- 4 Better Futures Forum (2020) ‘The 20-Minute City: The city of the future?’ <https://bff.org.nz/2020/08/08/the-20-minute-city-the-city-of-the-future/>

ABOUT CDKN

CDKN works to enhance the quality of life for the poorest and most vulnerable to climate change. We support decision-makers in designing and delivering climate compatible development.

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