



Urban Pathways

Nairobi

Urban Pathways has been supporting Nairobi since 2017 in the implementation of sustainable mobility & placemaking projects. Moreover the Urban Pathways team is working on waste related activities (SDG Data Assessment, identifying intervention options) with the city as well as on energy efficient housing solutions.

Pilot and Demonstration Action Placemaking, pedestrianization and impact on public health – Luthuli Avenue Transformation

The city embarked on a journey towards transforming Luthuli Avenue, one of the most vibrant commercial streets in downtown Nairobi. The street is part of a larger pedestrian desire-line that connects downtown Nairobi with its Central Business District. The street is home to wholesale and retail shops for various merchandise, particularly electronics. Over the last few years, the street has deteriorated into a congested area, where different transport users are fighting for space and high levels of noise and air pollution are the reality.



Under Urban Pathways, UN-Habitat supported Nairobi in the transformation of Luthuli Avenue by providing technical advice on placemaking and re-design, as well as support for the urban furniture. In 2018 it started with a placemaking week, that was repeated in 2019 and extended to a re-design of existing infrastructure.

Similar efforts have been conducted in Addis Ababa, Ethiopia, where the Urban Pathways project (UN Environment) set up 7 air pollution monitoring sensors to collect and analyze data. This data resulted in the city banning medium sized trucks to lower the peak of pollution levels in rush hour.

Budget: 135,800 EUR

Urban Pathways (through UN-Habitat) contribution: 8,800 EUR (co-financing by other development partners)
UNEP (Nairobi and Addis Ababa): 35,000 EUR (air pollution sensors for Nairobi and Addis Ababa)
Co-Financing for physical infrastructure by Nairobi City County Government for Luthuli Avenue: 92,000 EUR

Estimated direct GHG emissions reduction: 1,400 tCO₂/year

Cycling promotion and advocacy

Complementary to the technical advice on placemaking and physical implementation of pedestrian zone (Luthuli Avenue), the Urban Pathways project supported various cycling and advocacy events including high level participation.

Greater awareness and acceptance of cycling as a sustainable mode of transport by government officials in Kenya is necessary to integrate cycling as an essential part of transport plans and investment decisions. Many public officials have not cycled for many years and have lost the feeling and enthusiasm for cycling, which they might have experienced during their childhood days. There is limited understanding of cycling among the government officials, particularly with a view to the cyclists' vulnerability on the roads and at intersections.

Therefore, a high-level bicycle ride with public officials in Kenya was organized to revive the interest for cycling, direct policies and to create an understanding of the opportunities and challenges of cycling in Nairobi. Nairobi Governor, Mike Sonko, participated in addition to other high level government officials.



In addition, in March 2019, UN-Habitat in collaboration with partners launched Nairobi's first Bike Train, where a group of people commute using bicycles to cycle to their offices. The event brought together diplomats, government officials, the cyclist community, people who may not have cycled for a while and media to promote the concept of "Bike Trains" among the Nairobi working class, as a way of safely commuting together. Since then, there has been monthly bike trains being organised by the United Nations – and the concept is currently being rolled out to different neighborhoods in Nairobi, in collaboration with the Critical Mass Bicycle Movement.

Budget: EUR 1,000

Inclusive Mobility

The Urban Pathways team, together with partners, supported the production of a film on accessible and low carbon public transport in Dar es Salaam and Nairobi. This film presents the contrast between the capitals of Tanzania and Kenya, in respect to implementation of an inclusive, low carbon transport system. Whereas the Bus Rapid Transit system in Dar es Salaam caters for specific needs of vulnerable groups, public transport in Nairobi exhibits significant challenges to persons with limited mobility. Run by commercial entities with limited public infrastructure, the Kenyan 'matatu' (minibus) system does not yet sufficiently account for people confronted with mobility difficulties, resulting frequently in long waiting times, physical discomfort and excessive pricing for such commuters. This is aggravated by the lack of strong policy frameworks or incentives for the creation of inclusive public transport infrastructure.

The project has sensitized the governmental actors in Nairobi, who have committed to adjust some of the transport and road features and services to facilitate persons with limited mobility to enjoy movement in the city. To showcase possible adjustments to the existing transport system, UN-Habitat has designed a pilot matatu that is accessible to a wheelchair user. The matatu is equipped with a ramp as well as 4 foldable seats that make space for a passenger in a wheelchair on board.

Estimated budget: 2,000 EUR

Air Quality Sensing powered by Citizen Science

Pollution in the Kenyan capital Nairobi is on the rise - and there is no escape from it. With Nairobi's predicted rise in population – and a constant inflow of cars due to the high motorization rate – an urban health crisis is anticipated if no action to lower pollution levels is taken. In an effort to measure air pollution, the Urban Pathways project spearheaded by UN-Habitat has joined hands with the University of Nairobi's Maker Space Lab in a project called “Open Seneca Nairobi – Air Quality Monitoring powered by citizen science”.

In a collaboration between the University of Nairobi Science and Technology Park - Maker Space Lab, Open Seneca, the University of Cambridge and UN-Habitat, a pilot project has started in Nairobi to build low cost mobile sensors in order to map out air pollution in Kenya's capital city.

During the workshop, participants did not only learn how to build sensors with open-source hardware and software, but also how to interpret the air quality data that will be collected over the next 30 days. A total of 10



devices were mounted on different transport modes: 3 on Uber taxis, 2 on matatus (Nairobi's minibuses), 2 on BodaBodas (motorcycle taxis) and 3 on bicycles. The drivers/ riders were flagged off in the afternoon – and the mapping of the air quality levels around Nairobi at different times of the day has started.

Building on the initial efforts, another round of devices was mounted with support from Urban Pathways, this time on BodaBodas only to extend the data collection outreach and period. Data collection is currently ongoing and the results are analyzed by the students' team at Cambridge University.

Budget: UN-Habitat contribution EUR 3,000

Municipal solid waste collection in Nairobi and Mombasa

With support from the Urban Pathways project, UN-Habitat supported Nairobi and Mombasa in their efforts to collect data on their solid waste generation and collection. The results revealed that household's in Nairobi generate 2,290 t/ day in total municipal solid waste, out of which 1,820 t/day would be recyclable. This data was used as the basis to start discussions with the local governments on the most appropriate and feasible SWM improvement options. UN-Habitat organised various workshops in Nairobi and Mombasa to discuss technical and governance strategies to realistically and gradually improve the current situation.



In order to sensitize the public and to create awareness around how much plastic we are in contact with every day and explore ways to avoid it, Urban Pathways with partners organized a Plogging Challenge in October 2019 in Nairobi's CBD. Plogging is a combination of jogging with picking up litter (Swedish: plocka upp). At the end of the collection process, through the help of UN-Habitat's waste management experts, Association of Kenyan Recyclers and an experienced recycler at Dandora Dumpsite, the public was educated on waste categories and went through a waste separation exercise.

Budget: 6,000 EUR

COVID-19 related interventions (I): Using creative methods to spread key messages on COVID-19 and low carbon services

All regions of the world are now facing the COVID-19 pandemic. People in cities, crowded public spaces and streets, or in public transport are particularly at risk of being infected due to the reduced social distance among individuals.

Communities need to be supported in accessing full information about the impacts of COVID-19 – also the ones that are less digitally connected. Creative methods such as graffiti, painting and photography can be used to raise awareness of low carbon basic services. Under the Urban Pathways project, in June 2020, UN-Habitat started working with local youth and artists on the development of key messages that help to educate the public – and at the same time empower local communities by providing youth / artists with an opportunity in a time where many might have lost their jobs due to COVID-19. The project is enhancing community awareness, mitigates health risks and adverse socio-economic impacts of the pandemic, while at the same time informs longer-term low carbon strategies in Nairobi. In collaboration with the Matatu Welfare Association, the National Transport and Safety Authority (NTSA), and the Kenya Urban Roads Authority (KURA), the matatus were launched in a small event and send off to the roads to serve their customers.

In addition to the minibuses, murals were painted on walls in informal settlements of Kibera and Mathare in collaboration with local artists to reach slum dwellers that otherwise might not have regular access to any form of digital media.

Budget: 5,750 EUR



COVID-19 (II): Supporting Start ups – Urban Tech Innovations as emergency response for COVID-19

The Africa Urban Tech Summit digital edition took place from 26-29 May 2020 with more than 2000 viewers online. It was co-organised between Pangea Accelerator and UN-Habitat through the Urban Pathways project and other partners. The summit brought together Tech Entrepreneurs, Corporates, Investors, NGO's, Government Agencies and other organizations working towards livable, inclusive and environmentally sustainable cities across Africa to have vibrant and engaging conversations including cutting edge technologies in Urban Tech in the sectors of mobility, energy, waste management and housing. The digital summit aired on Youtube Live via the Pangea Accelerator platform with follow up Facebook Live sessions happening on the UN-Habitat Facebook page on the topics of "Urban Mobility" and "Emergency Response for Covid-19".

Budget: 6,200 EUR

Outlook: Planned and/or Possible Future Action

Mainstreaming green housing in an incremental and self-build context

With support from Urban Pathways, UN-Habitat has unveiled a house prototype for affordable green building aimed at addressing housing shortage in densely populated urban areas – showcased during the UN-Habitat Assembly in May 2019. Dubbed Tiny House, the model is expected to address the problem of affordable housing in Kenya and tackle climate change.

The proposed project builds up on the pilot concept of the UN-Habitat's Tiny House and explores its adjustability in the context of incremental construction in low-income neighbourhoods in Kenya (with living-lab possible within a slum upgrading intervention in Nairobi). The Tiny House includes various design solutions minimising direct solar radiation, ensuring natural ventilation, use of sustainable local materials, promoting rainwater harvesting, vertical greenery and similar. The whole costs of a housing unit incorporating these elements sums up to \$18,500. While in the long run these costs should be covered thanks to savings on energy usage, not many low-income households are able to make this kind of up-front investment. In order to mainstream the approach it is necessary to develop, document and demonstrate green building solutions, which can be applied in conditions of extreme precariousness, over an extended period of time characteristic for incremental and self-build construction. The project involves testing of possible design components proposed within Tiny Houses in on-the ground realities of an incremental housing construction. This demonstration activity should go hand in hand with building capacity of local multipliers such as small-scale builders, local administration or NGOs working directly with community groups. Finally, the financially viable model specifying anticipated returns from the investment needs to be developed as a clear guideline and incentive for replication of the demonstrated solutions in the post-project phase.

Estimated budget: 120,000 EUR



Future Outlook

Waste Management: Inter-counties consultation for improved municipal solid waste management in Nairobi Metropolitan Area

With a population of 4 million, Nairobi's municipal solid waste generation is estimated around 2,500 - 3,000 t/day and expected to increase to 4,000 t/day by 2030 with rapid urbanization and population growth to 6 million. Given the peculiarity of Nairobi city, addressing solid waste management issues in a holistic approach, also from a geographical perspective, it is an essential step. Building on the support from Urban Pathways on the solid waste data collection exercise, Nairobi City County is boarding with Kajiado, Kiambu and Machakos County. While the law states that waste generated in one county shall be disposed of in the same county, in reality, because of logistic and costs issues, it does not always occur. Therefore, coordination among neighbouring counties (Nairobi, Kajiado, Kiambu and Machakos) is a necessary step to set up sustainable and legal practices for solid waste management.

Given the fact that waste is already flowing from one county to another, although in an uncontrolled and unregulated manner, and a new waste treatment plant will be built in Kajiado County (recovering resources and energy from waste), this might be the right time for Nairobi City, Machakos, Kiambu and Kajiado Counties to tackle municipal solid waste management with a metropolitan approach. An agreement to share waste management facilities including landfill sites, transfer stations, resource and energy recovery facilities, as well as to regulate waste disposal among these counties is urgently needed. The picture below shows metropolitan approach taken in the transport sector, which includes cities of NCC neighbouring counties, such as Kiambu, Ruiru, Thika, Mavoko and Ngong.

The proposal was submitted in June 2019 to a funding institution, but not yet accepted.

Estimated budget: 276,850 EUR

Implemented by:



In cooperation with:



Supported by:



based on a decision of the German Bundestag