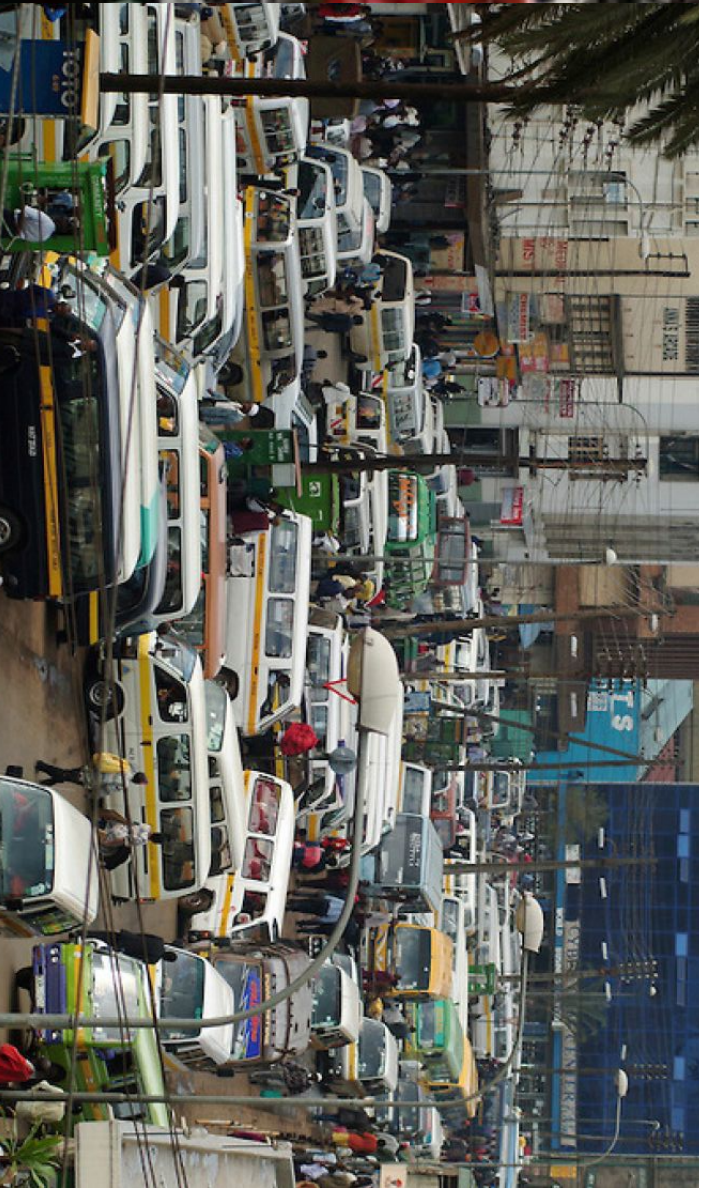


Popular Transport and Digital Commons in an age of Climate Change



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CENTER FOR SUSTAINABLE URBAN DEVELOPMENT

 COLUMBIA CLIMATE SCHOOL
Clean Air Toolbox for Cities



Big Picture on Urbanization: Unprecedented city building in Africa and Asia...

Africa:

1950 27 million urban residents, today 257 million,
2050 ? projected increase 1.3 billion, most in cities



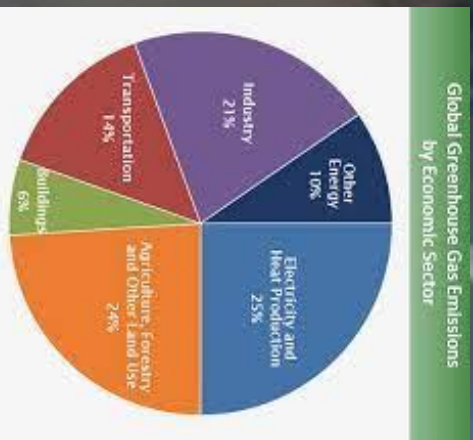
Urbanization in Technological Transition:

Exponential increases in computing power & big data, New sensors, Artificial Intelligence with large impacts on mobility systems... complex mix of transportation and technology shaping cities across the globe



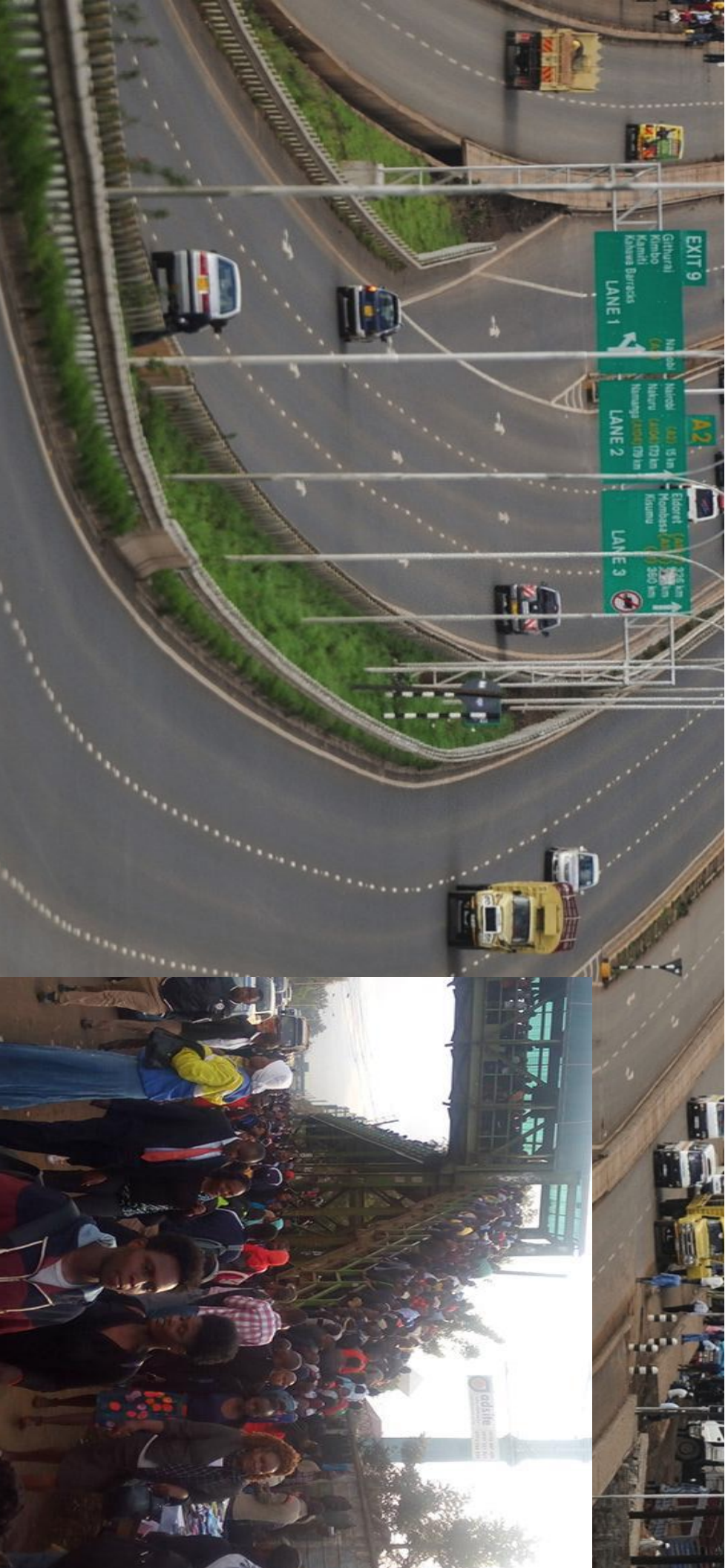
Urbanization within Eco-Climate Crisis:

As cities & consumption grow, emissions grow ... as does need to adapt to extreme heat and flooding..

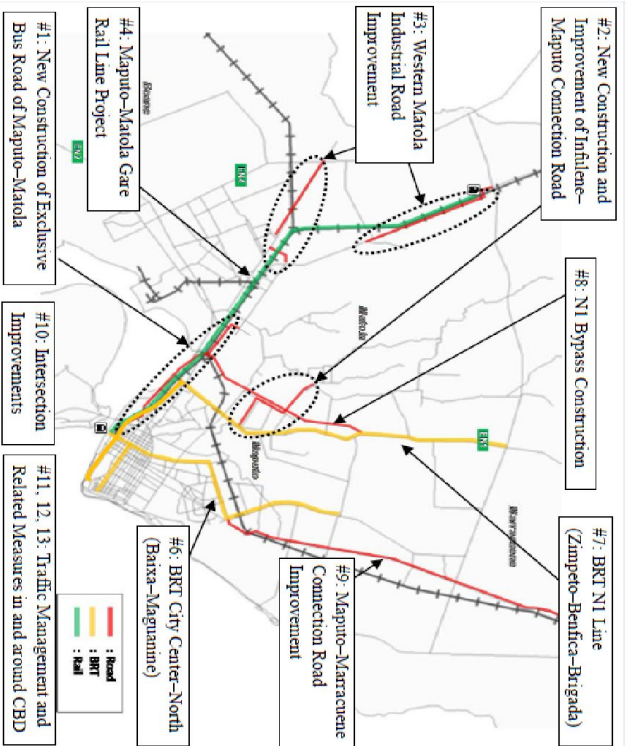


Investment Mismatch: carbon intensive, regressive & dangerous infrastructure with a focus on technology (BRT, cashless payment etc) techno-social imaginary of the “modern”

(Klopp, Harber & Quarshie 2019)



Popular Transport dominates but not been seen as “modern” and has been invisible in policy & investment: The vast majority of urban residents take forms of “popular” transport (minibuses, tuk-tuks, motorcycle taxis) and/or walk in African and Asian cities....



Behrens et al 2016, Klopp 2012, Klopp and Cavoli 2017

Greenhouse gas emissions by sector, World

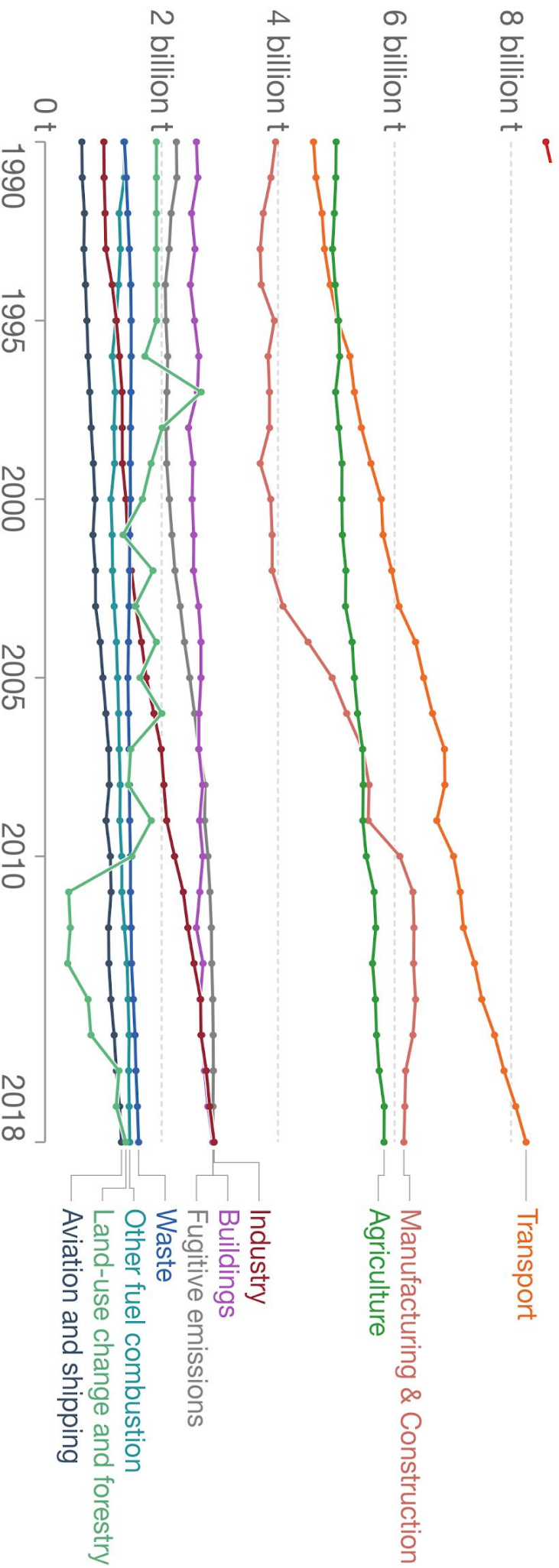
Greenhouse gas emissions are measured in tonnes of carbon dioxide-equivalents (CO₂e).



14 billion t
12 billion t
10 billion t
8 billion t
6 billion t
4 billion t
2 billion t
0 t

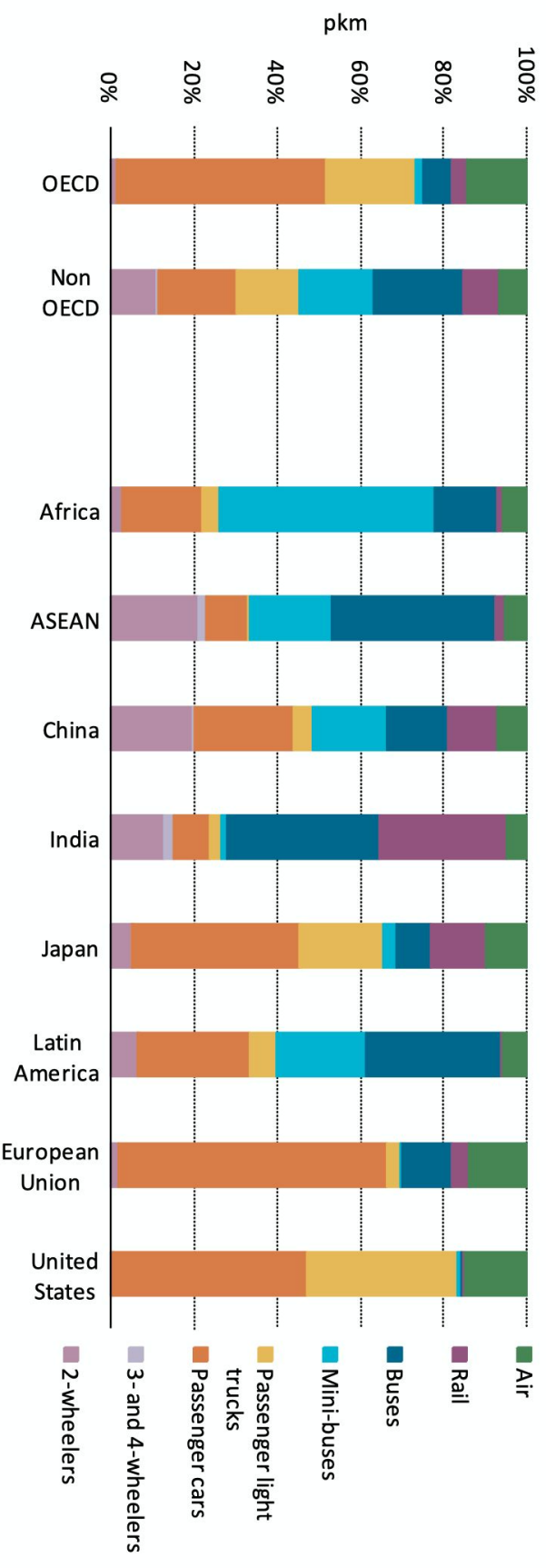
Disruption? Growing concern with climate and transport emissions which must be addressed at a global level

(Boateng and Klopp 2022)



Decarbonization an opportunity to refocus on popular transport as a dominant motorized mode

Passenger mode share estimates (2009)

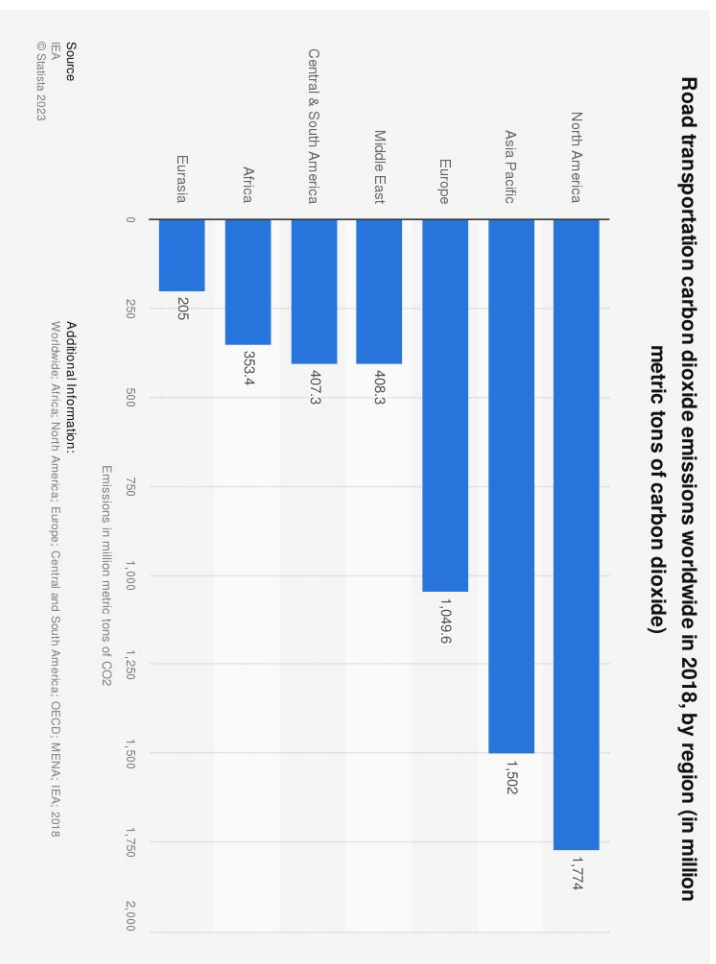


Modal data is limited in most countries but is critical to analysis of transport sector trends and potentials.

Most cities in Asia and Africa are transit dominant despite investment mismatch...

Equity / Justice Issue:

Global South -less responsible for global transport emissions per capita but likely to suffer more from impacts including on transport systems...



Many Decarbonization/Popular Transport improvement pathways

- Improve fuels (UNEP)
- Electrification (infrastructure, retraining)
- Beyond Used-Vehicle Bans to vehicle upgrades (incentives & recapitalization programs)
- Improve operations & networks, less idling and VMT (better integration across modes & with non-motorized transport & mass transit)
- Discourage mode shift to cars by providing high quality, convenient & affordable services (saves a lot of money)



Co-Benefits substantial: public health, livelihoods/income and equity (*exposures greater for those using popular transport, older vehicles, poor safety*)...



“Road injuries are now the biggest killer of children and young adults worldwide, according to the World Health Organization” (WHO)

“The effects on health of transport-related air pollution have become one of the leading concerns about transport.” (WHO)

(Climate) Finance for public transport: need to move from big projects to systems approach (including popular transport)



Capacity building, collaboration & professionalization: growing efforts



Paragem

Mangueiras

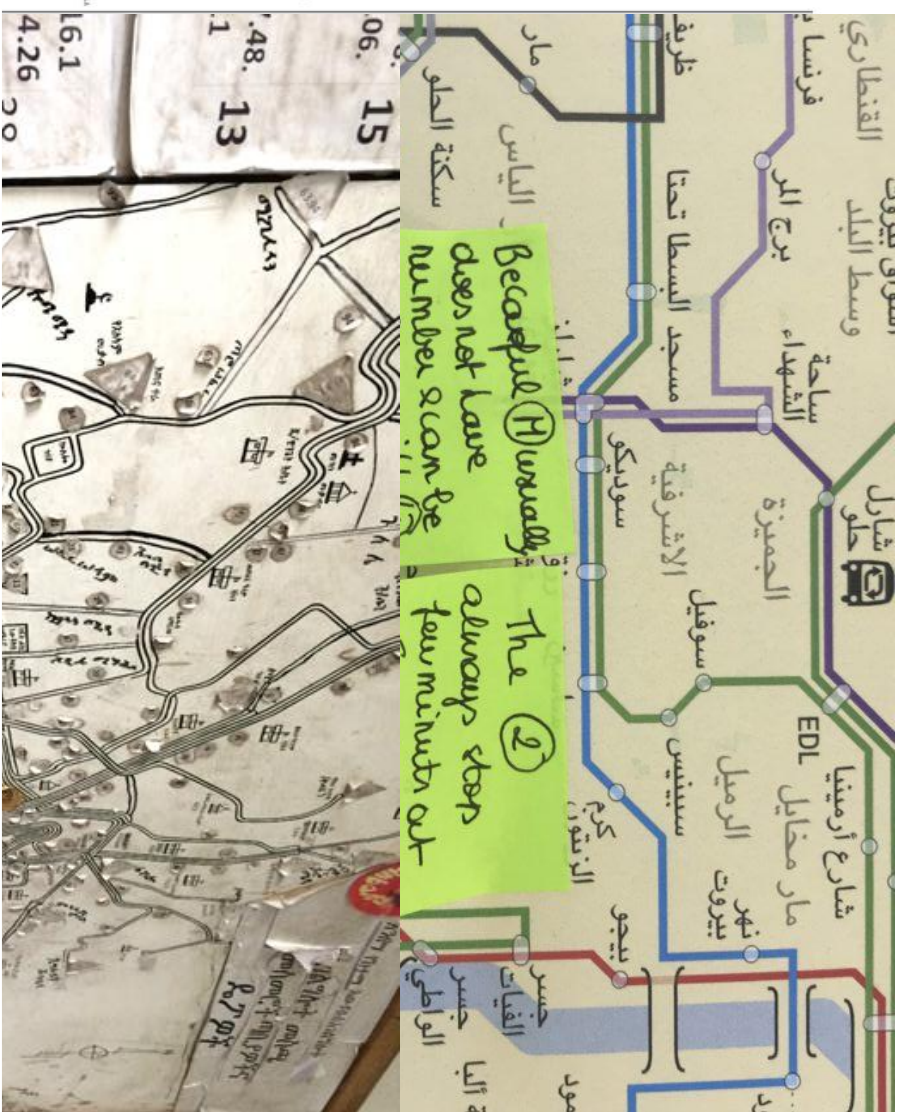
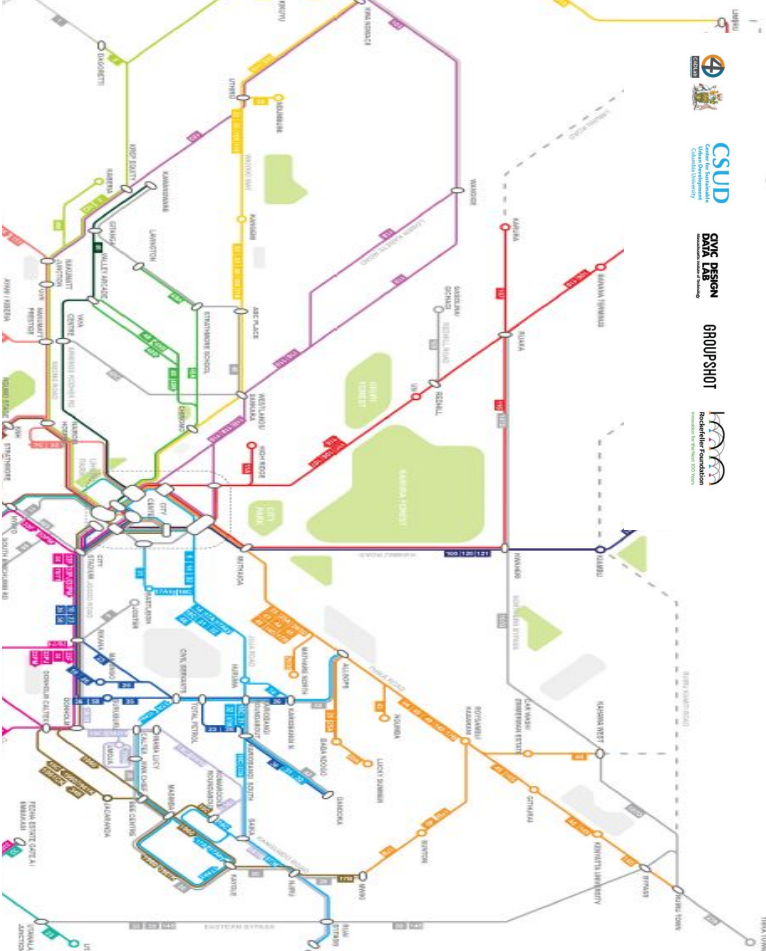
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- X32 MUSEU - MATENDENE



Data for improvements, monitoring for impacts & (carbon) finance

digitalmatatus



Who controls data matters: “A city run on data has to collect that data. Who collects it, analyzes it and owns it then becomes an incredibly powerful player in that city.”

International Transport Worker's Federation 2018

Leveraging New Technologies for collaborative popular transport data collection



To render these systems more visible and to develop bottom up improvements, help reveal injustice and push for alternative more equitable and climate friendly investment strategies for improvements for people...

“Digital Commons, Collaboratives” for public engagement, governance & benefit from data



A Resource Center for All

Africa is in a historic phase of rapid city building. It is creating transport infrastructure and systems that will shape the continent for into the future. Making these **transport systems safe, affordable, accessible and sustainable for all** is fundamental to livable, productive, low carbon and healthy African cities.

Most African cities rely on some form of semi-formal transport, often minibuses, dominated by fragmented private operators. These transport systems provide a much needed service for many, at no cost for the city. But these services also bring a host of challenges to cities, contributing to traffic congestion, pollution and poor road safety.

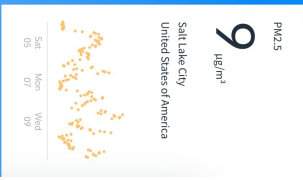
Digital technologies are a tremendous opportunity to address these challenges. Public transport data is currently missing for planning integrated public transport, designing passenger information systems, and working with operators to upgrade transit services. With this, **DigitalTransport4Africa** was born.

We are a collaborative digital commons and global community that scales up and supports urban mobility projects through **open data and peer-to-peer knowledge sharing**. Together, let's -

Learn Create Share

Fighting air inequality
through open data
and community.

OpenAQ is a non-profit organization empowering communities around the globe to clean their air by harmonizing, sharing, and using open air quality data.



Klopp, Ali and Dusabe, 2023

Reshaping the techno-social imaginary & power relations...



Leveraging Climate Change and Technology Disruption to build urban publics & commons, including in the critical transport sector, for more inclusive, equitable, safe and livable cities (SDG11.2).