



Sustainable Urban Mobility Challenges and Innovations in Africa: **Abuja and Lagos Nigeria as Case Studies**

Engr. Emmanuel John, *FCAI, MNSE, MCILT*

Director of Administration & Strategy
Transportation Growth Initiative, Abuja Nigeria

9th International Congress of Cities for
Mobility Congress Stuttgart, Germany

June 17 - 19, 2018



Outline

- About Transportation Growth Initiative
- The Core Message of this Presentation
- Some Definitions
- The Problems of Urban Mobility in Africa
- The Reforms: Current Efforts and Visions
- Global Indicators and demand for competitiveness
- Ongoing projects
- Way forward

About Transportation Growth Initiative (TGI)

An NGO with membership cutting across transportation organizations and individuals from the private sector, relevant Government Ministries and Agencies, Academics, Civil Society and other professionals with Corporate HQ in Abuja Nigeria



W: www.tgi.org.ng E: info@tgi.org.ng Or tgi.secretariat@gmail.com

M: +234 8035994482, 8058298679



THE MESSAGE

The World exist for
people, so are cities,
not for cars



A Good City

A place where
people want to live,
especially families
with children.

Responsible growth



Interaction, inspiration &
participation

Smartness



Seamless & intermodal mobility

Affordable housing

A place for young & old

Culled from Velocity2012 presentation by Maria Vassilakou, Vice Mayor for the City of Vienna, Austria

Definitions

- ❑ It is important that we define 3 key words that are critical to this topic: Transportation, Equity, Sustainability & Mobility



Transportation: Movement of people and goods from one destination to the other. It is concerned with **Movement** and reaching **destinations**

Equity: the quality of being fair to all concerned; **impartial** access to public facility by **residents** irrespective of class

Sustainable Development: Developments that meets the needs of the present without compromising the ability of future generations to meet their own needs.

Mobility: Ability to move and be moved freely and easily. It is concerned with **People** their **Freedom & Ease (Accessibility)**

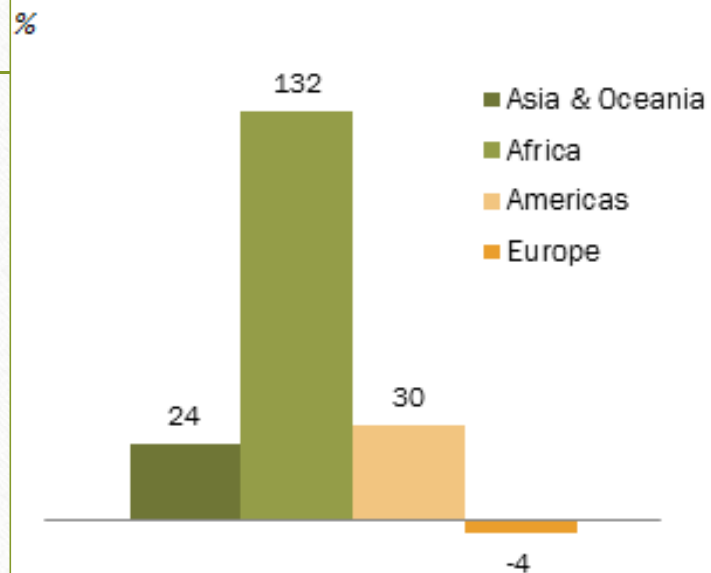


The Problem with Current Mobility Practices

Population Growth & Urbanization



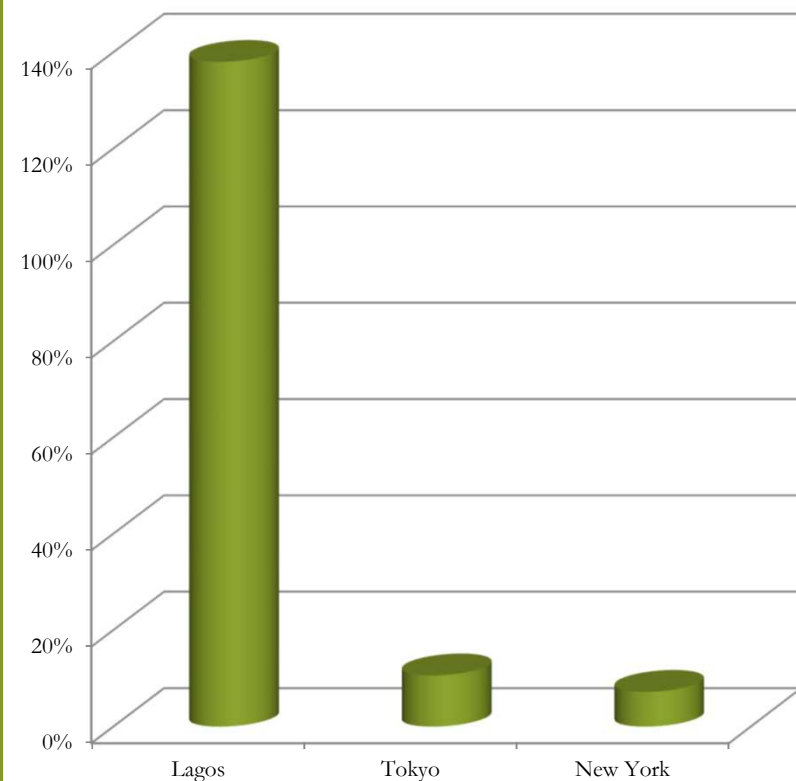
Estimated Change in Population, by Region, 2010 to 2050



Source: United Nations, Department of Economic and Social Affairs, *World Population Prospects: 2012 Revision*, June 2013, <http://esa.un.org/unpd/wpp/index.htm>

PEW RESEARCH CENTER

% Growth Between 1990 -2010



New world order



1950

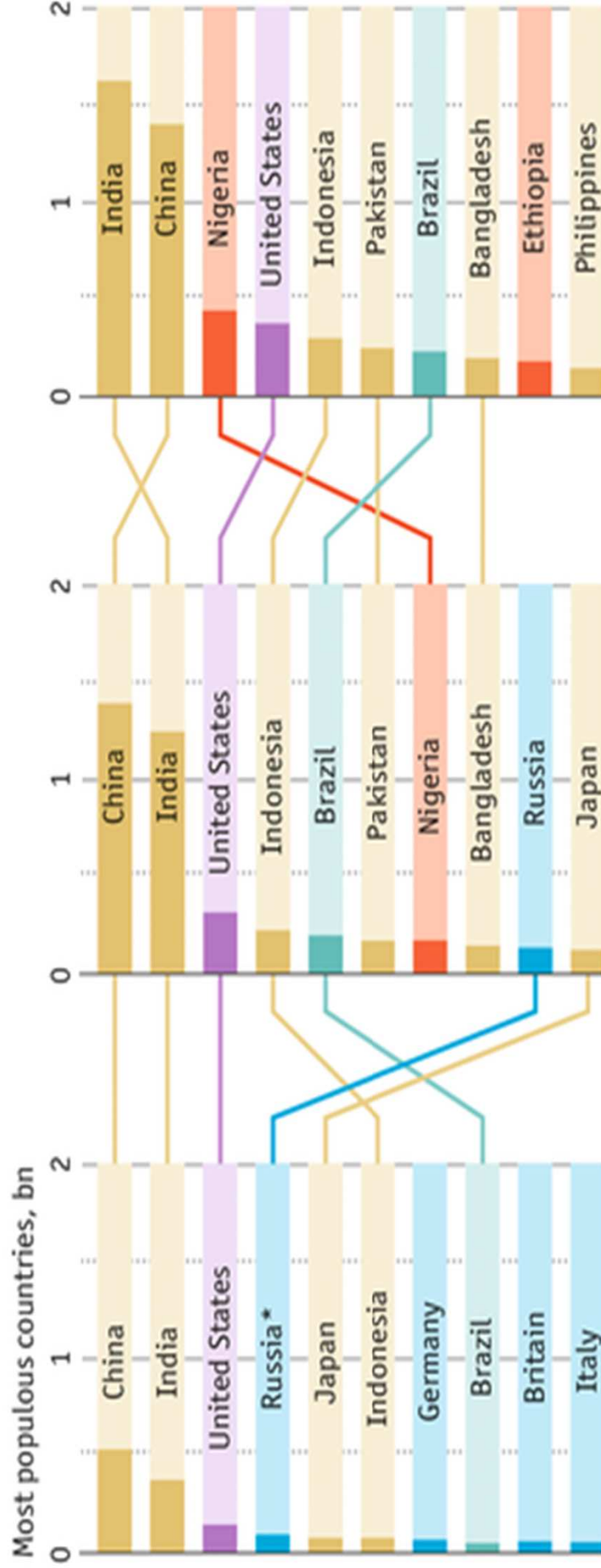
2.5 Global population, bn

2013

7.2

2050 forecast

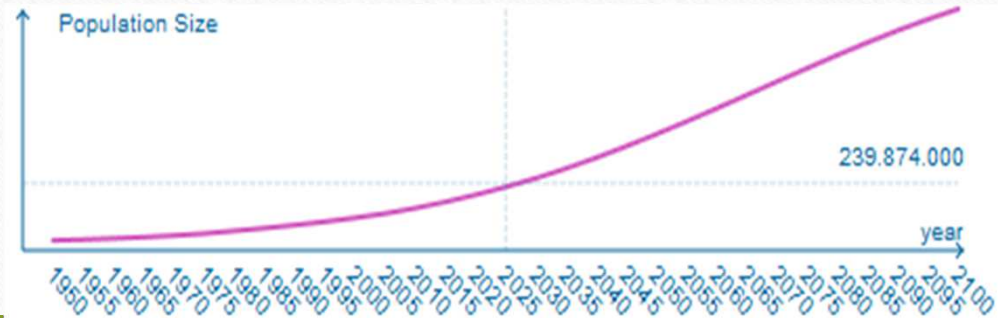
9.6



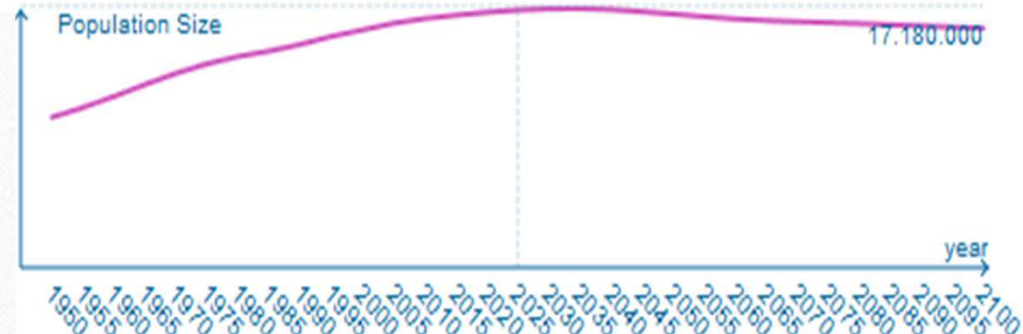
Source: UN

*Then part of Soviet Union (Russian Socialist Federative Soviet Republic)

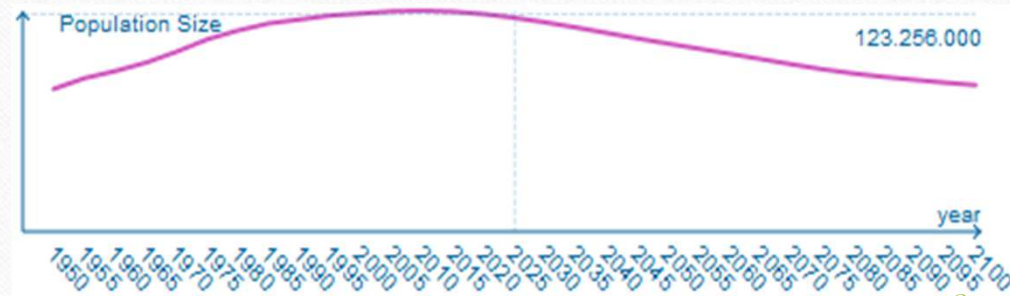
Nigeria



The Netherlands



Japan

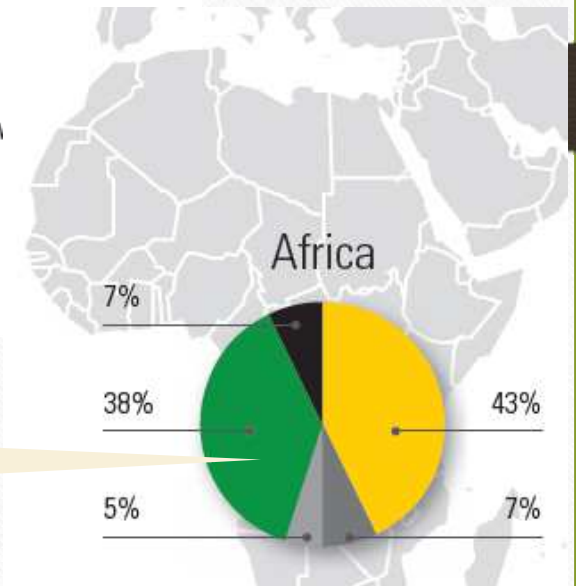
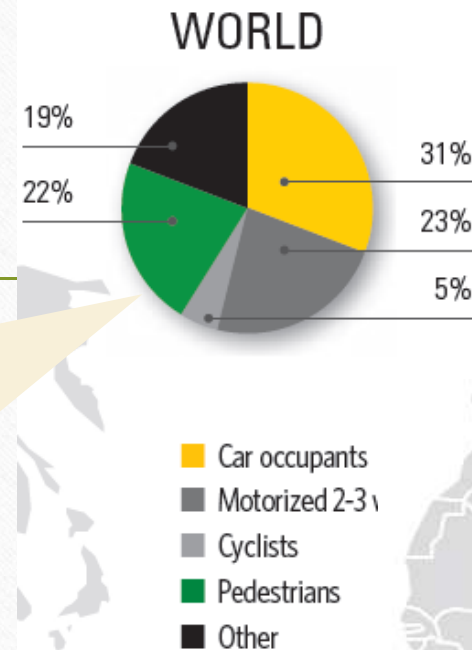


Source: <http://populationpyramid.net/>

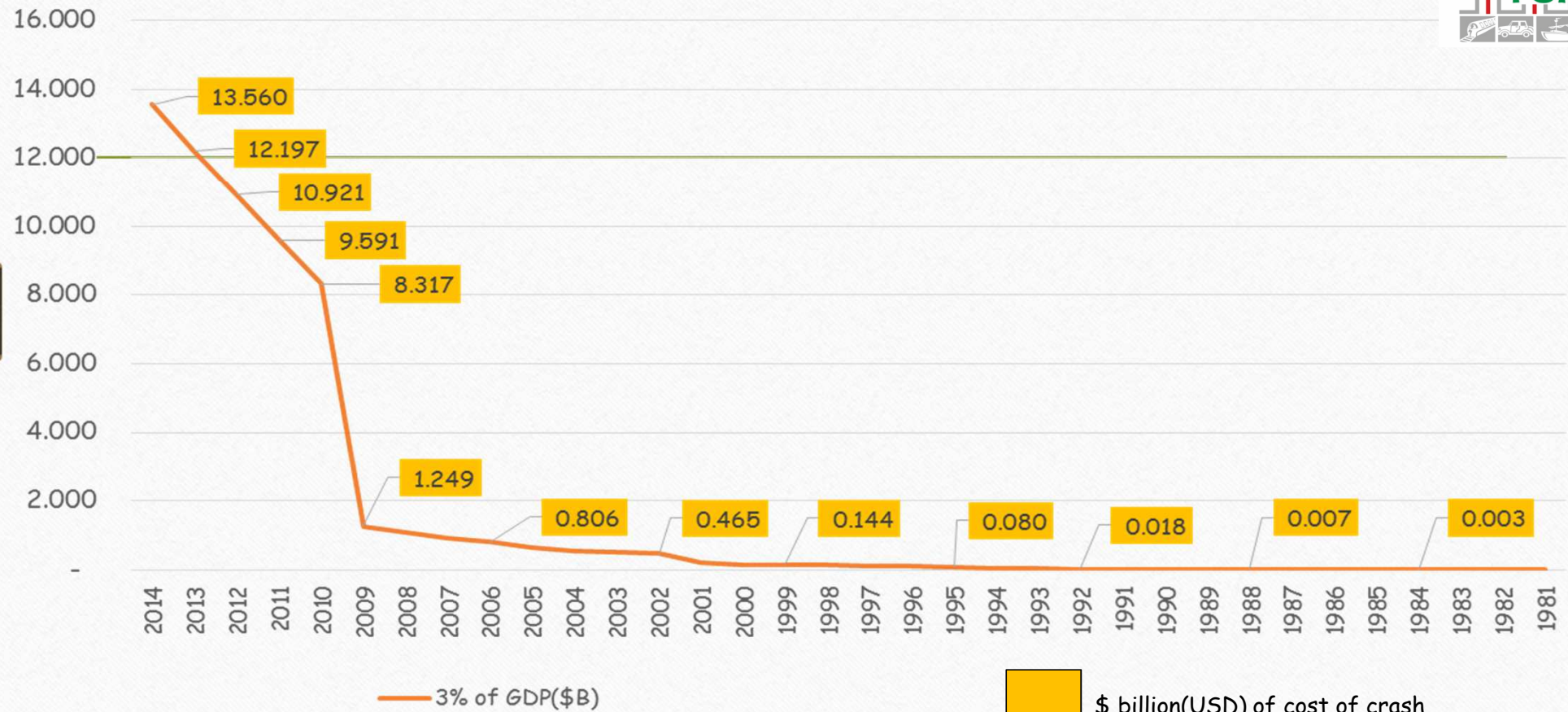
Road Crashes

Half of the world's road traffic deaths occur among Motorcyclists (23%), **Pedestrians (22%)**, **Cyclists (5%)**, 31% of deaths among Car occupants and the remaining 19% among unspecified road users.

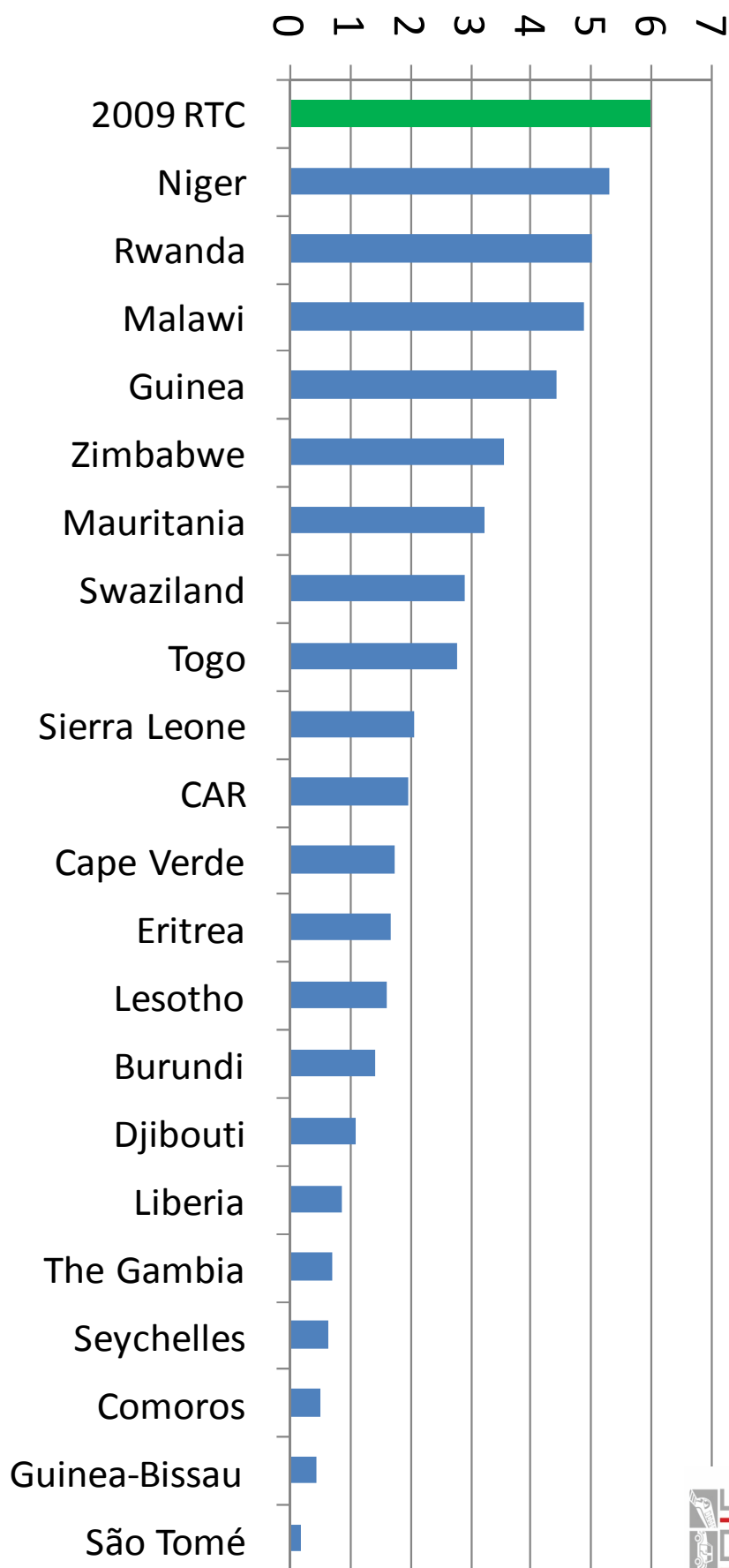
38% of all African road traffic deaths occur among pedestrians



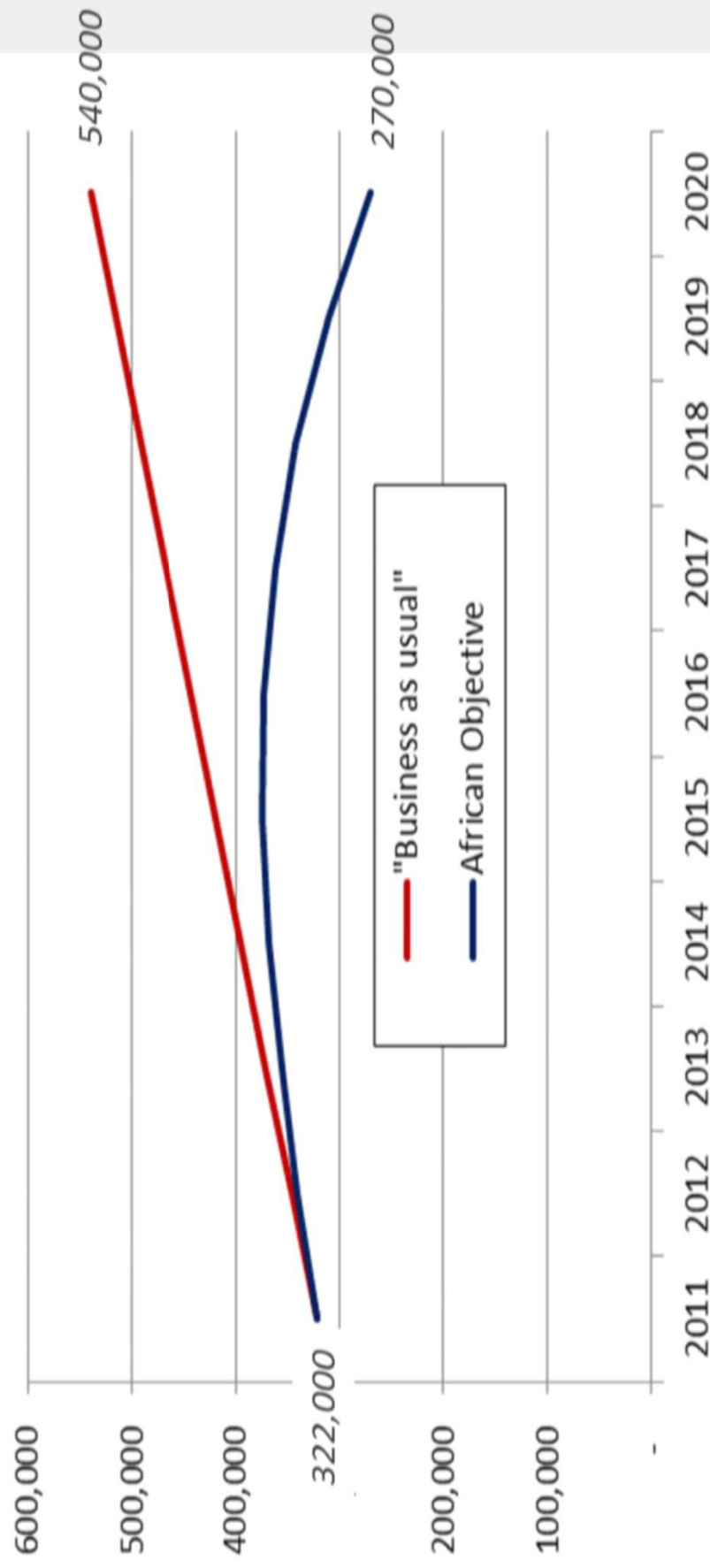
Nigeria loses about 3% of GDP from Road Traffic Crashes



Nigerian income loss for 2009 vs. 2009 GDP select African Countries



Road fatalities and severe injuries in Africa / Year





Governance Issues

- There is difference in Governance patterns affecting adoption of initiatives
- A number of decision makers does not see mobility as a cardinal necessity for socio-economic development
- We have limited resources to meet the growing demands, unfortunately, this slim resources is depleted by corruption, and ineffective governance
- Mobility developments focus more on the big things neglecting the little things that really matter
- For instance a greater majority of residents cant afford beyond an NMT for daily commute yet NMT is not factored into most mobility developments

Out of School Children

- About 10 million children are out of school in Nigeria, the Story is the same across Africa. There are four major reasons for this; one of it is the distance between schools and homes which are most times not walkable especially for the girl child
- Create efficient, affordable and convenient mobility and a quarter of these children will be back to school
- If we say this doesn't matter, some of them will turn out to become miscreants to the society, **some will migrate to Europe**



More challenges



- ❑ Traffic Congestion that consume 3% of GDP, (OECD Report)
- ❑ Increased urban noise that causes exhaustion, tiredness among other health implications
 - ❑ Pollution that kills 7m people per year according to WHO 2012 report
 - ❑ Global warming that is threatening humanity
- ❑ Tear and wear on vehicle and road & overstretch enforcement agencies



How Did we Get Here: The Journey to “Affluence”



Affluence



Big boy;
Bye to NMT



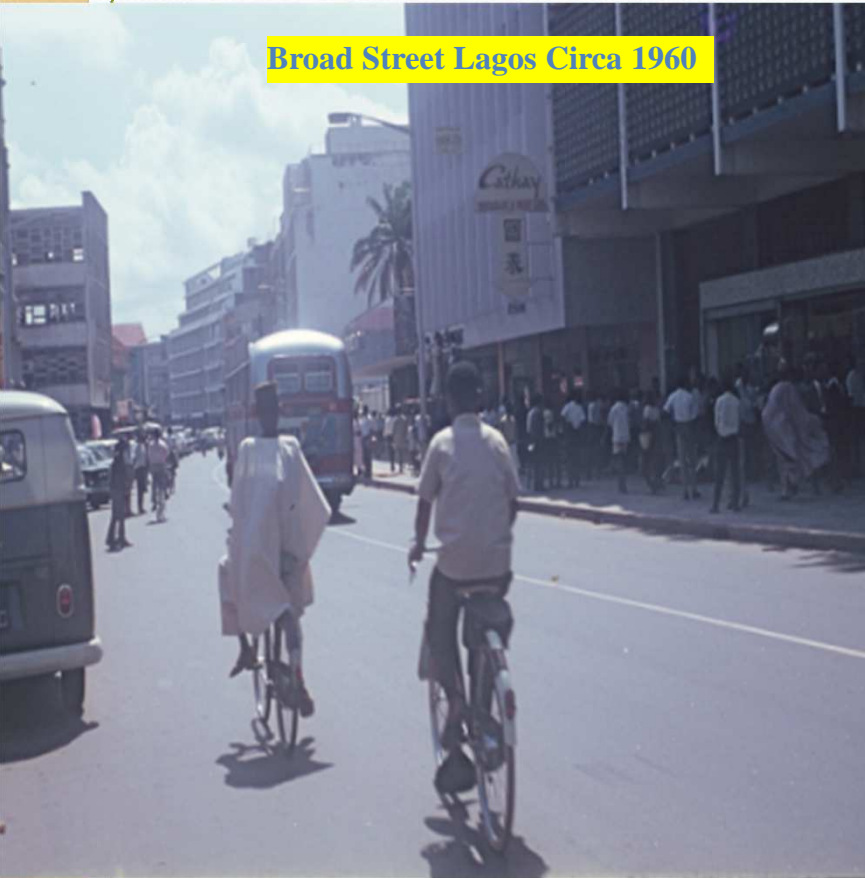
He is feeling funky



This is where most people started from,
they aim higher



Broad Street Lagos Circa 1960



Broad Street Lagos Circa 1967



Broad Street Lagos Circa 1980



What Will Happen By 2050



The Way out:

Sustainable Equity in Mobility:
Public Transport Combined with
Cycling and Walking is the
Answer



I did not Say it: The Entire World Say So

- Check the Different UN Resolutions
- “The New Urban Agenda” 2016
- 12 Targets of the 17 Sustainable Development Goals (SDGs), 2016
- “The Future we want”: Transport as a fundamental element in human development, 2012
- “Global Sustainable Transport Outlook Report” 2014 by the UN High Level Committee on Sustainable Transport
- The World Bicycle Day, 12TH April, 2018
- The UN Decade of Action on Road Safety 2020, etc
- All of these point to one thing: that the car has become much of an enemy to humanity and the time is ripe to diversify to sustainable modes of transport



Between now and 2050, there will be a massive drift from the use of gasoline fuel vehicles to electric & autonomous vehicles

Three Revolutions in Urban Transportation

Business-as-Usual Scenario

20th Century Technology

Through 2050, we continue to use vehicles with internal combustion engines at an increased rate, and use transit and shared vehicles at the current rate, as population and income grow over time.



2 Revolutions (2R) Scenario

Electrification + Automation

We embrace more technology. Electric vehicles become common by 2030, and automated electric vehicles become dominant by 2040. However, we continue our current embrace of single-occupancy vehicles, with even more car travel than in the BAU.



3 Revolutions (3R) Scenario

Electrification + Automation + Sharing

We take the embrace of technology in the 2R scenario and then maximize the use of shared vehicle trips. By 2030, there is widespread ride sharing, increased transit performance—with on-demand availability—and strengthened infrastructure for walking and cycling, allowing maximum energy efficiency.



Number of Vehicles on the Road by 2050 = 250 million vehicles

2.1 billion

2.1 billion

0.5 billion

CO₂ Emissions by 2050 = 500 megatonnes of CO₂

4,600 megatonnes

1,700 megatonnes

700 megatonnes

www.itdp.org

ITDP UC DAVIS



The Reforms: Current Efforts

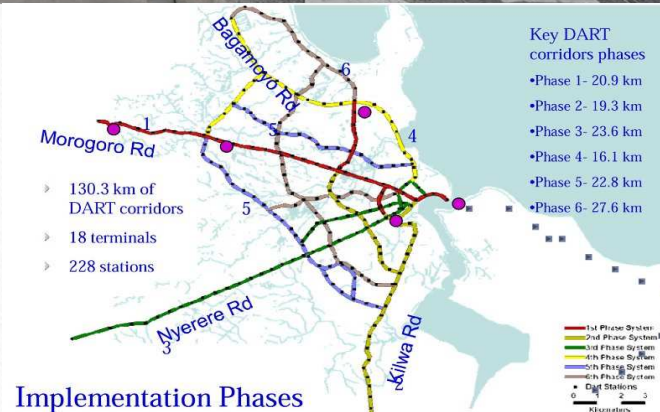
Nairobi Kenya



Dar Salaam



21km BRT started operations in 2016. first phase completed with €134 million funded by ADB and the Government of Tanzania. With 140 bus and a ridership of about 300,000 per day



Casablanca Morocco



Addis Ababa, Ethiopia



31.6km light rail was commissioned in 2015 with 39 stations and 200,000 ridership per day removing nearly 50,000 cars off the corridors they ply. The Project Cost USD\$475m

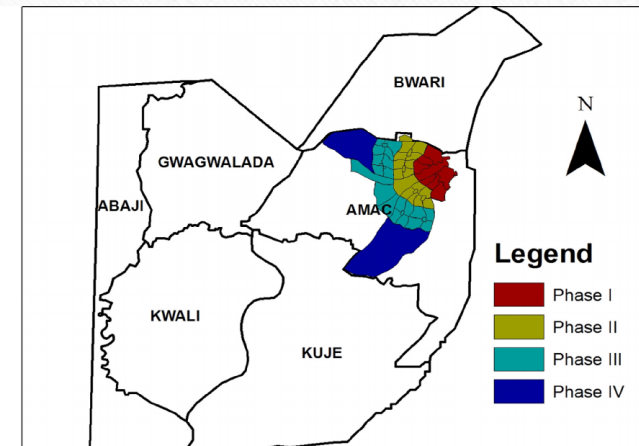
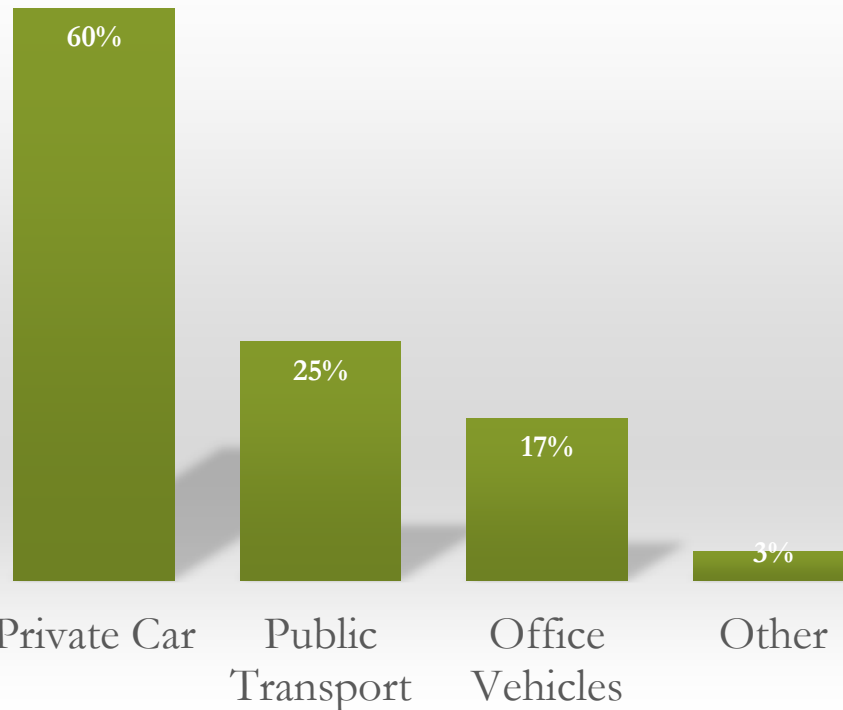


Abuja

The city is building
for cars with people
as an after thought



Where do people live in Abuja



70% of the workforce in Abuja leaves in the suburbs and feed into the city center every work day and return in the evening

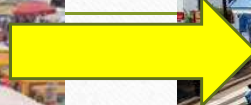
Lagos is making progress with public transport (BRT and Light Rail) but with little efforts on NMT



Buses 2001



BRT now



Stranded commuters



Now

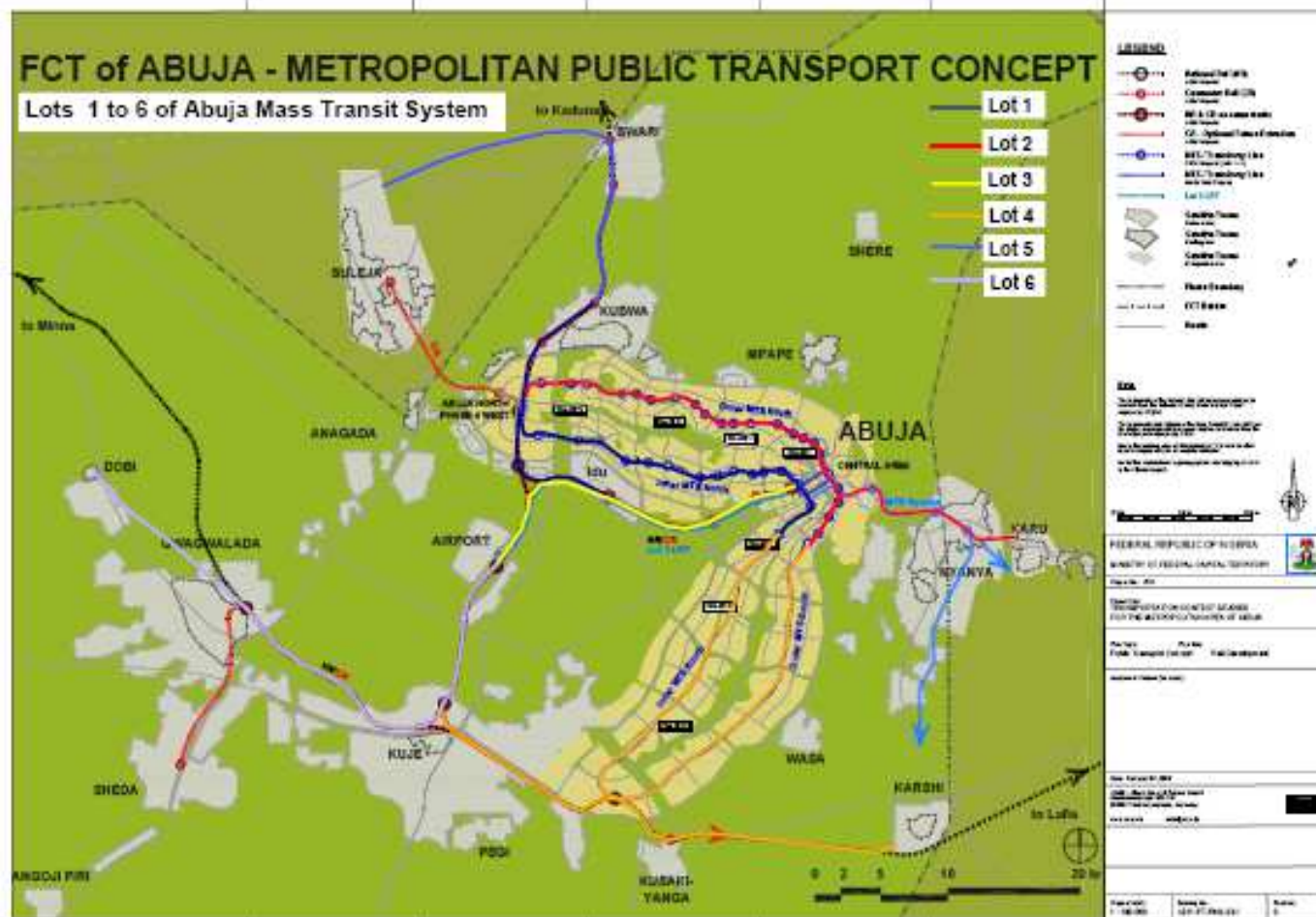


Integration ongoing

MARINA

Image courtesy of LAMATA

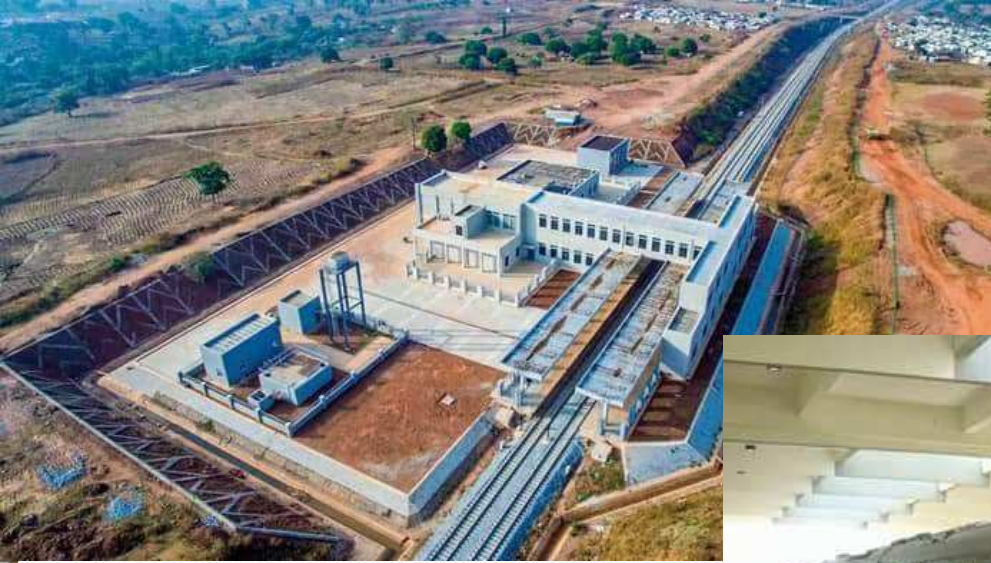
Abuja Light Rail



Lot 1a & 3 nearly
completed and ready for
commissioning (yellow
and deep blue lines)

A contractual agreement for the second phase (Lot 1b and 2) of Abuja Rail Mass Transit was signed between the FCT Administration and Messers CCECC Nigeria Limited in March, 2017

Lots 4, 5 & 6 of the
Abuja light rail are
available for interested
investors



It's a \$792m China Exim bank funded project, expanded to cover the 2nd phase to \$1.79b

The completed 1st Phase covers 350,000 commuters daily on one of the 3 major corridors



BRT



Vision for seamless intermodalism

Current Mass Transit Buses



- Abuja is in partnership with the Federal Ministry of Environment \$73m Green Bond has just been raised with European partners for a BRT on a second corridor
- The third corridor is available for concession





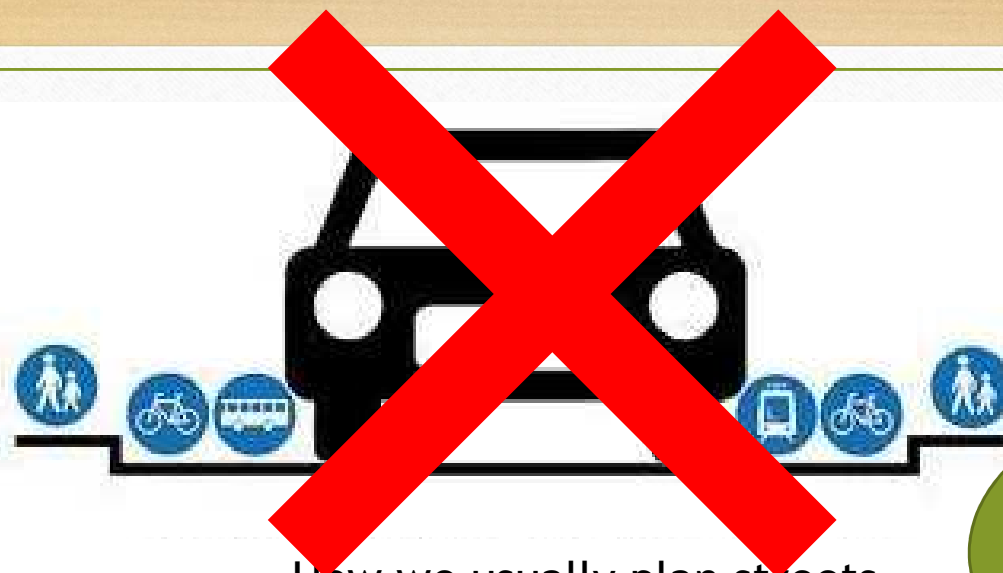
We Must Take Strategic Steps to Reach the Future

- We need to return from building cities for cars and start rebuilding cities for people; Lets return the city to the original owner: **THE PEOPLE**
- We need a revolutionary reform in the lands use and housing sectors to address the inequality; **Let low and middle income live in the city center while the high income earners live at the outskirts**
- We need to develop policies on population growth and address urbanization; **4 children is enough**
- We need to equitably provide transport facilities that cater for **people with disability, women, elderly and other vulnerable members of society**
- Doing these will require that we reorder our investments in infrastructure provision

PARADIGM SHIFT TOWARDS ACTIVE MOBILITY



Active mobility: **Active** Travel, **Active** Transport or **Active** Transportation, is a form of transport of people and sometimes goods, that only uses the physical activity of the human being for the locomotion



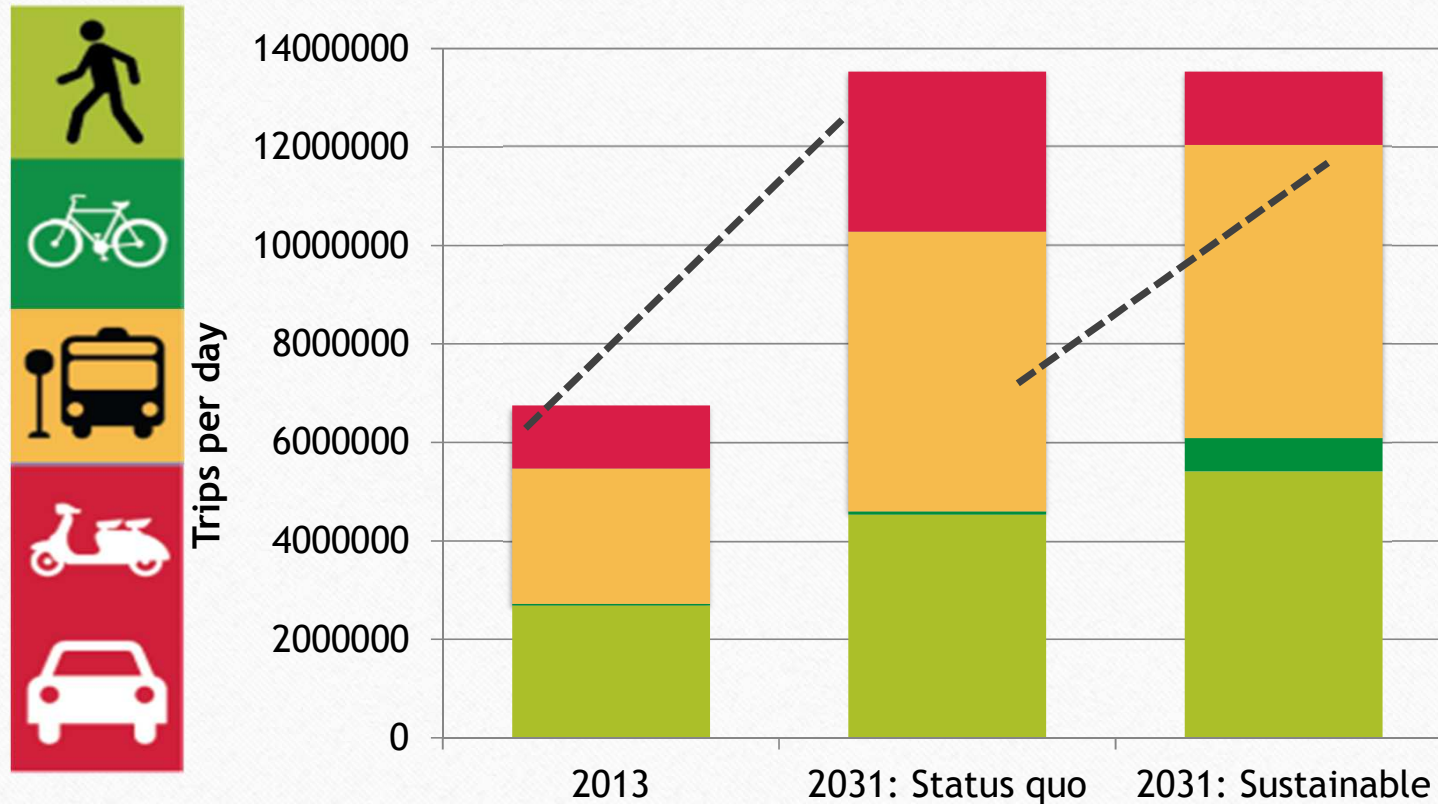
How we usually plan streets

Shrink the car by
magnifying public
transport and
NMT



A more equitable approach

A typical city: Status quo

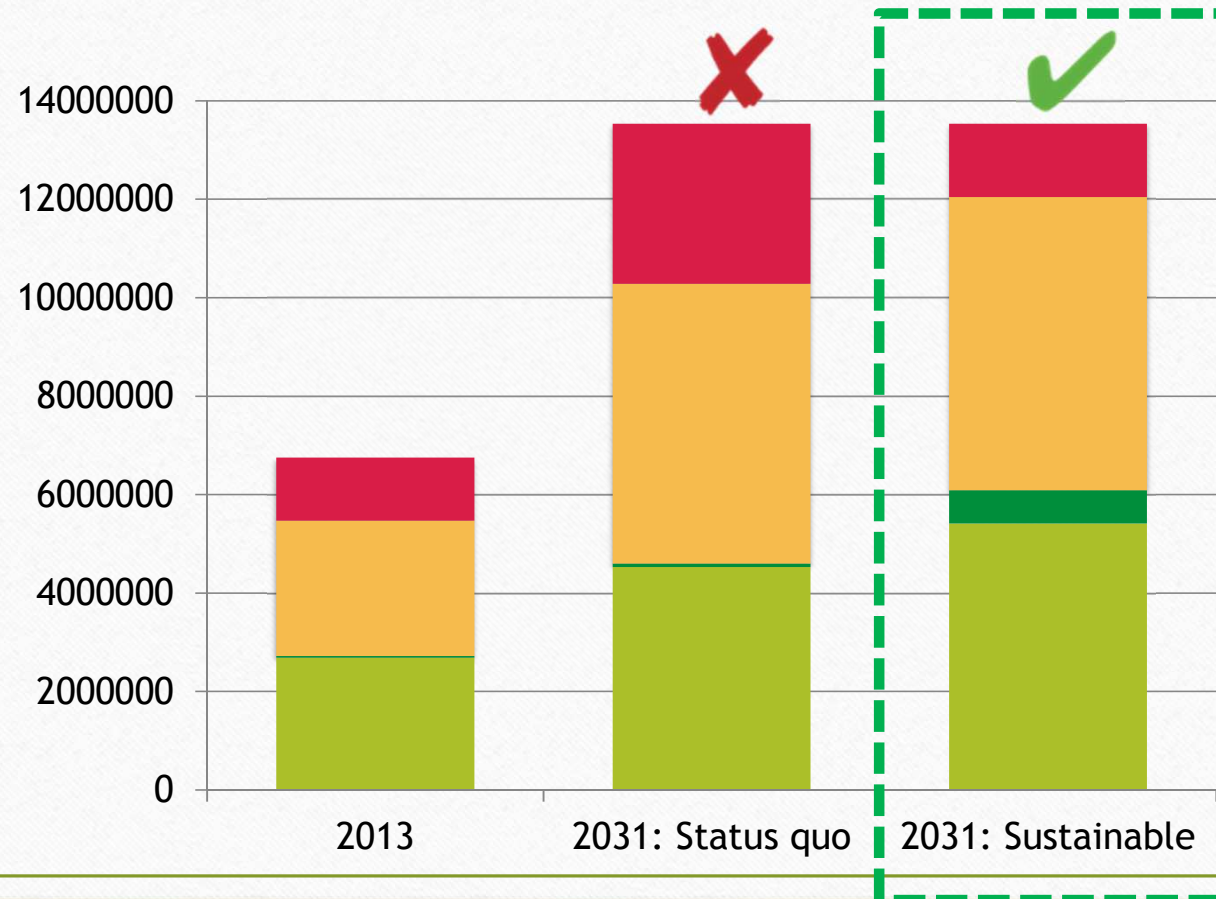


At the current growth rate, trips by cars and 2Ws will double or triple by 2030

A typical city: Sustainable scenario



Trips per day



How do we get there?



For every million residents:



80 km of complete streets



2,000-4,000 shared cycles



400-600 city buses



20-30 km of rapid transit

Investment needs by city size



	City population category		
	< 1 million	1-5 million	> 5 million
NMT	✓	✓	✓
Minibuses	✓	✓	✓
Buses	✓	✓	✓
BRT	-	✓	✓
Metro/Tram	-	-	✓

Investment needs in Nigeria's largest cities



2030 requirement:

**2,000 km of
complete streets**

15,000 city buses

**670 km of rapid
transit**

Ongoing Projects



- 62% of Nigeria's population are 24yrs and below; most of this people are in the schools
- Culturing these young people to ride bicycle as a way of life is reshaping the future of mobility
- As a pilot, Ochenuel Limited, TGI working with 3 other companies have developed a comprehensive bike share program for Nigerian Universities
- A Sustainable Urban Mobility Course in being started in November 2018 to bridge the knowledge gap





UCHENUEL
mobility

 **Ochenuel**
Bike Share


**Ochenuel Sustainable
Urban Mobility Course**

Partners are needed to actualize some of the initiatives

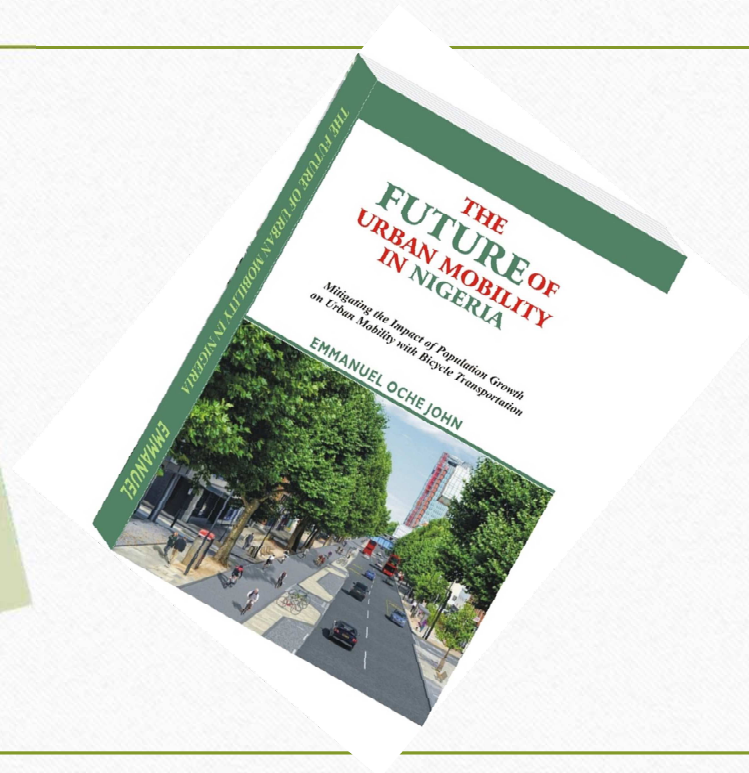
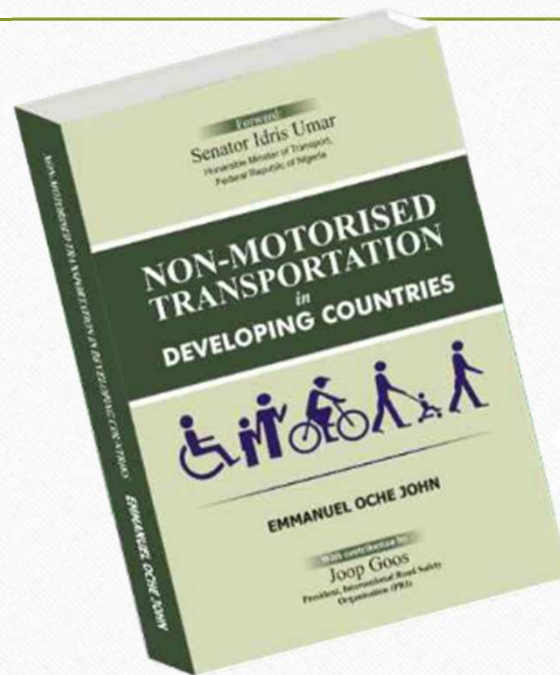
E: info@Ochenuel.com.ng W: www.ochenuel.com M: +2348035994482



We are leading campaigns on urban cycling



Would may like copies of books I am privileged to author for more on these.



Be our Guest in Abuja Nigeria
October 22-24th 2018



3rd Transportation Growth Initiative
International Conference

Theme: The Role of Transportation in the
Sustainable Development Goals

City: Abuja Nigeria



THANK YOU FOR LISTENING



Website: www.tgi.org.ng

Email: tgi.secretariat@gmail.com

Facebook: www.facebook.com/Emma.John24

Twitter: [@emmanuel_john24](https://twitter.com/emmanuel_john24)

Linked inn:
<https://www.linkedin.com/in/emmanueljohn/>

Skype: [emmanuel.john243](https://www.skype.com/people/emmanuel.john243)

Phone: +2348035994482

