



# Sustainable Urban Mobility Challenges and Innovations in Africa: Reengineering mobility for People

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SSATP AGM and Workshop

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# Outline

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- 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



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# THE MESSAGE

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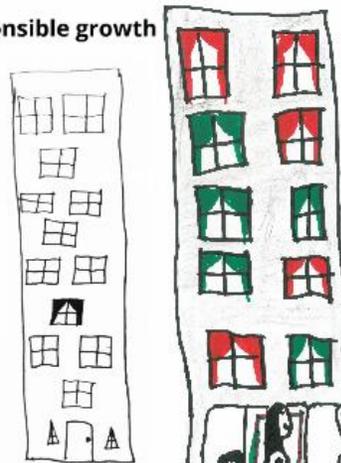
The World exist for  
people, so are cities,  
not for cars



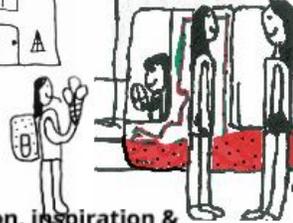
# A Good City

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

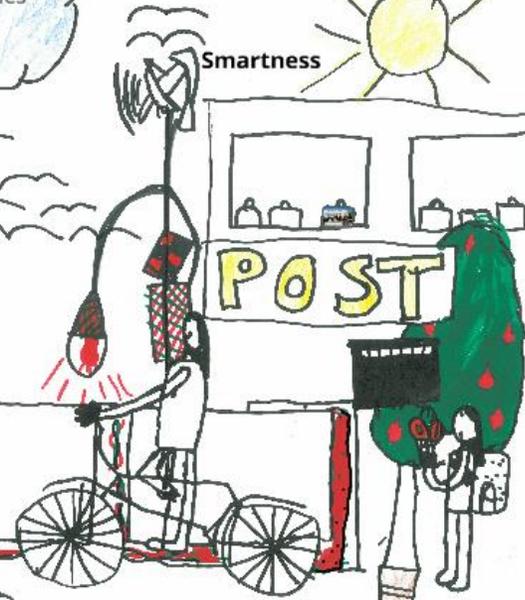
Responsible growth



Interaction, inspiration & participation



Seamless & intermodal mobility



A place for young & old



Affordable housing



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)**



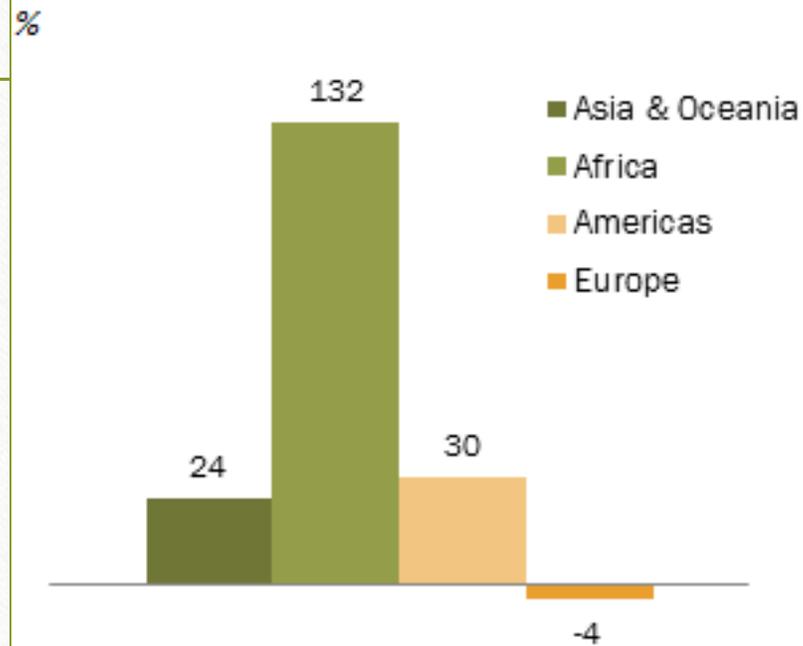
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# The Problem with Current Mobility Practices

# Population Growth & Urbanization



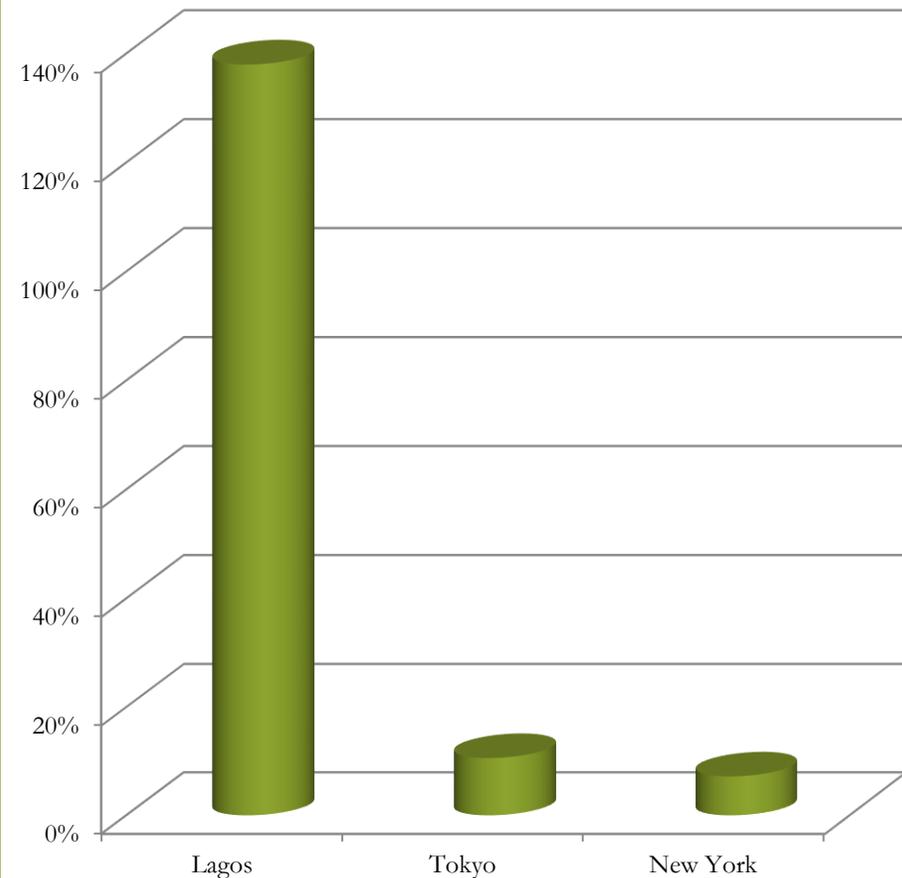
### Estimated Change in Population, by Region, 2010 to 2050



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

Asia North America Europe Latin America Africa

1950

2.5 Global population, bn

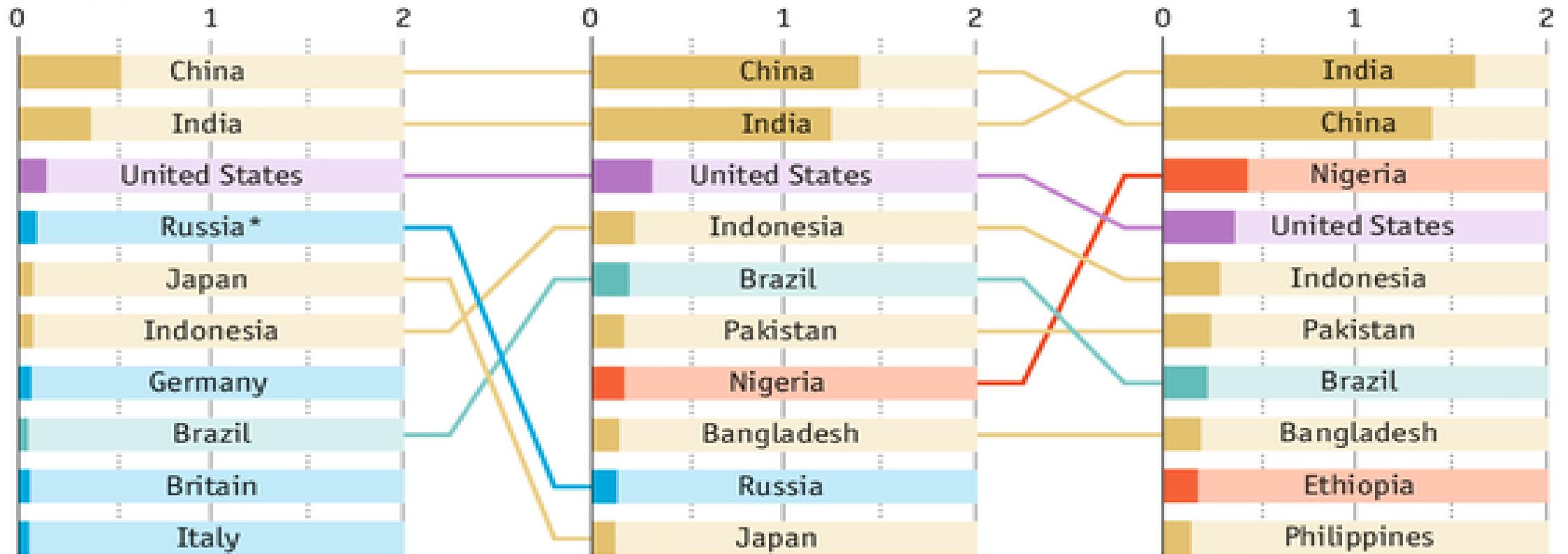
2013

7.2

2050 forecast

9.6

Most populous countries, bn

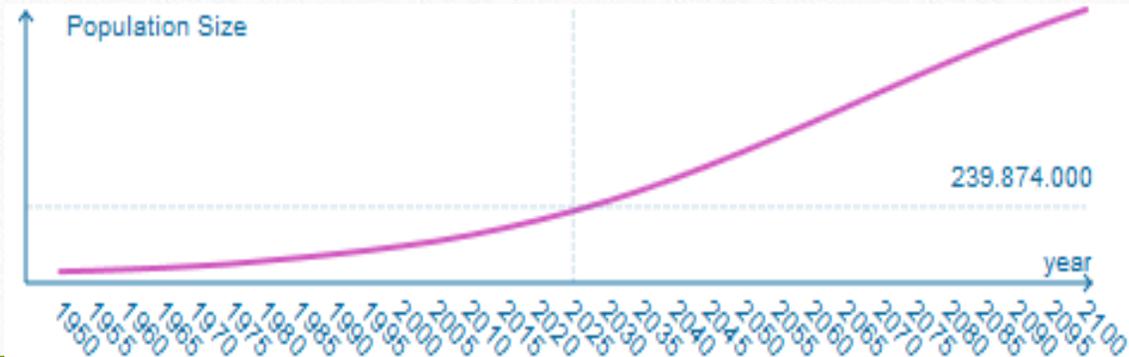


Source: UN

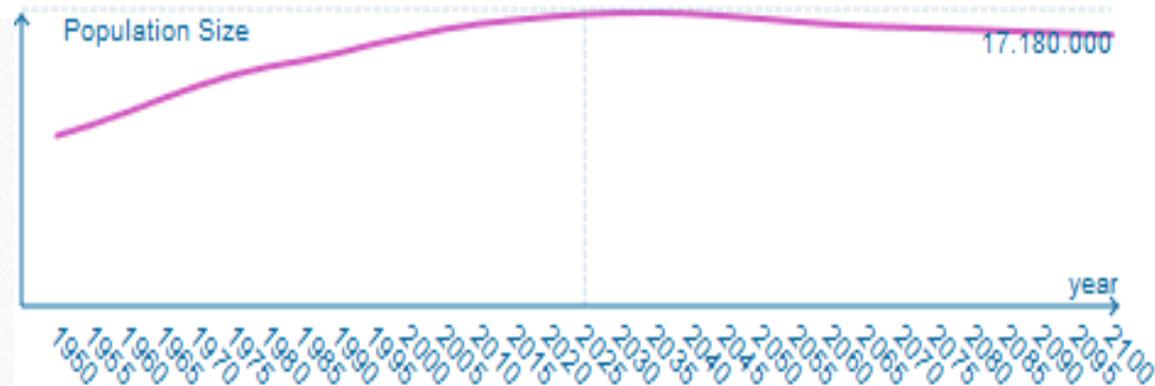
\*Then part of Soviet Union (Russian Socialist Federative Soviet Republic)



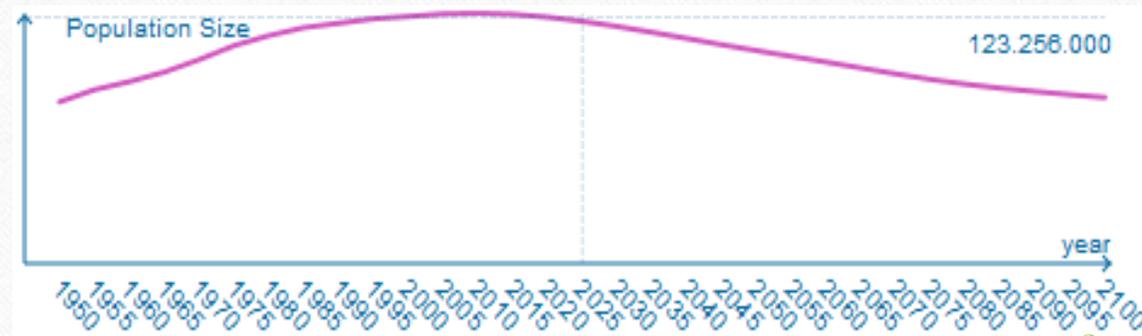
## Nigeria



## The Netherlands



## Japan



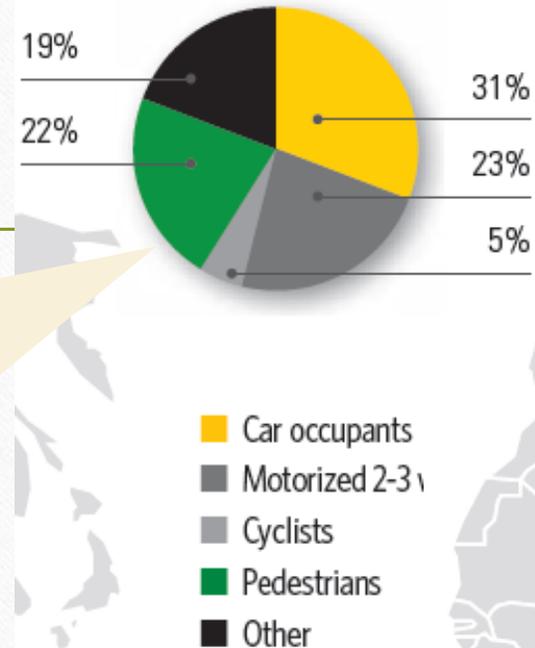
Source: <http://populationpyramid.net/>

# Road Crashes

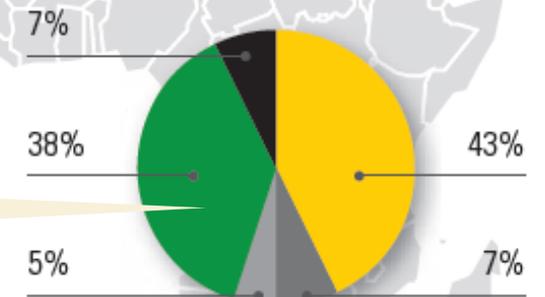
Half of the world's road traffic deaths occur among Motorcyclists (23%), Pedestrians (22%), Cyclists (5%), 31% of deaths among Car occupants and the remaining 19% among unspecified road users.

38% of all African road traffic deaths occur among pedestrians

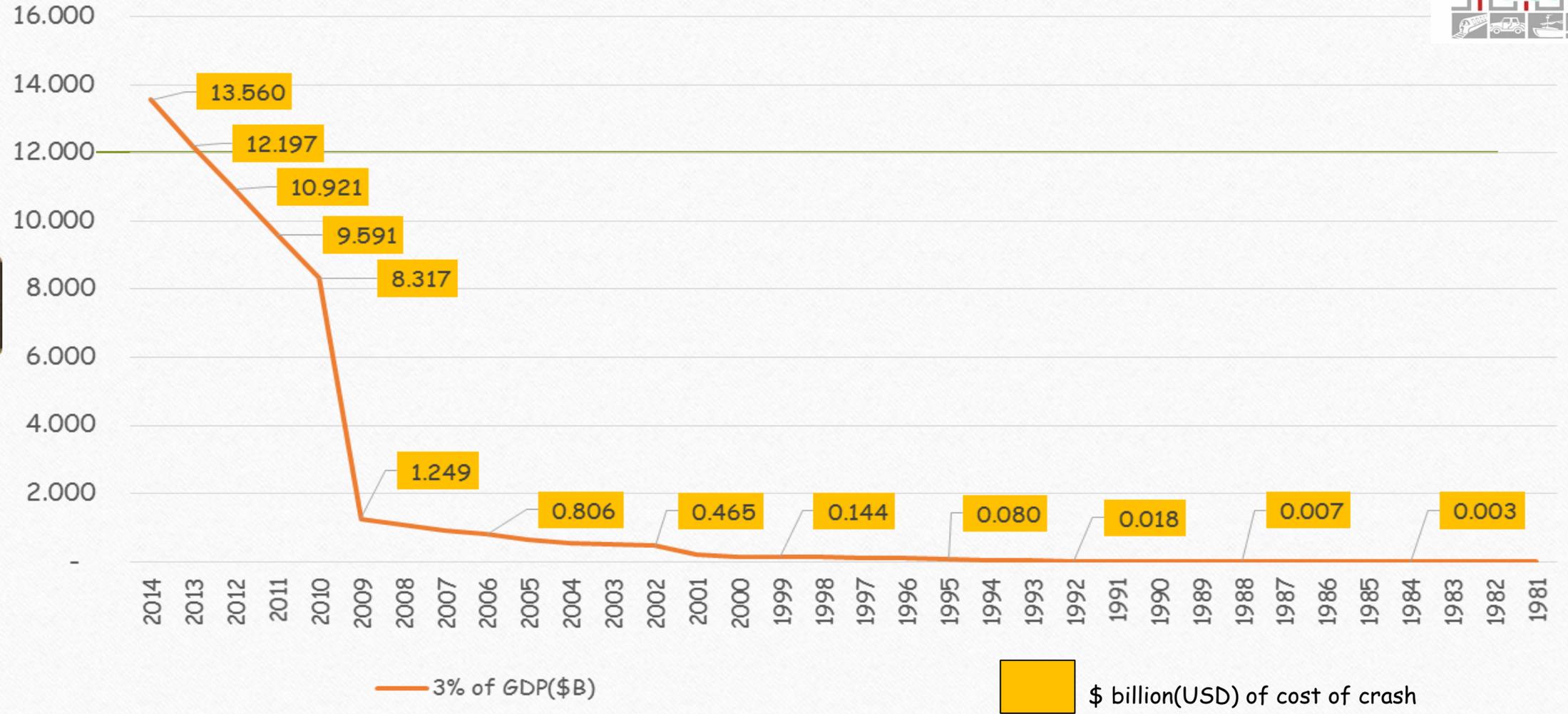
WORLD



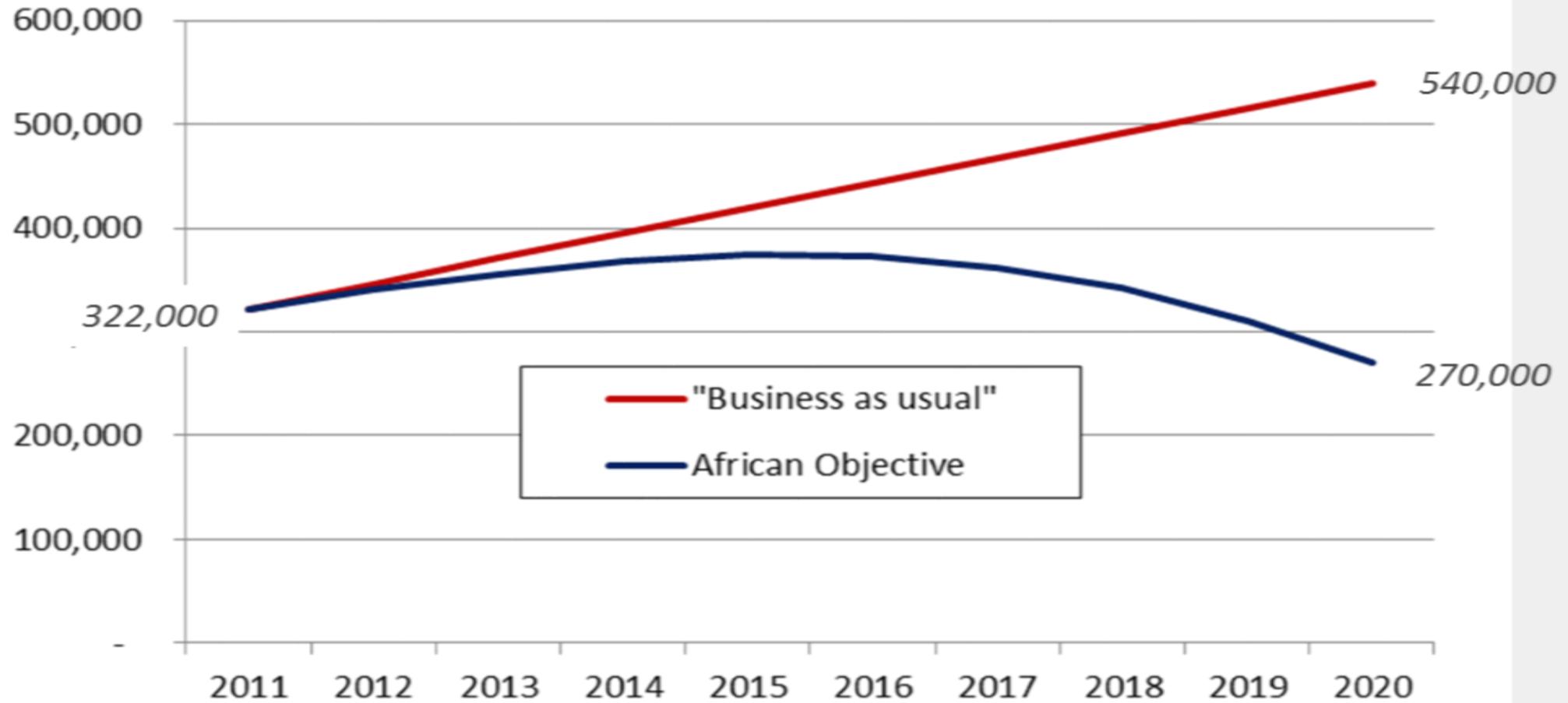
Africa



# Nigeria loses about 3% of GDP from Road Traffic Crashes



### Road fatalities and severe injuries in Africa / Year





# Governance Issues

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- There is difference in Governance patterns affecting adoption of initiatives
- A number of decision makers does not see mobility as a fundamental factor 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

# Data

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- Inadequacy
- Some times unreliable
- For cities as Lagos or Abuja you will get some data but secondary cities ?
- Every development: policy, investment, plans is predicated on something
-



# 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
- We cannot say this doesn't matter,



# 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 19670



Broad Street Lagos Circa 1980



What Will Happen By 2050



The Way out:

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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

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- “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, 12<sup>TH</sup> 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 rife 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



CO<sub>2</sub> Emissions by 2050 = 500 megatonnes of CO<sub>2</sub>





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# The Reforms: Current Efforts

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



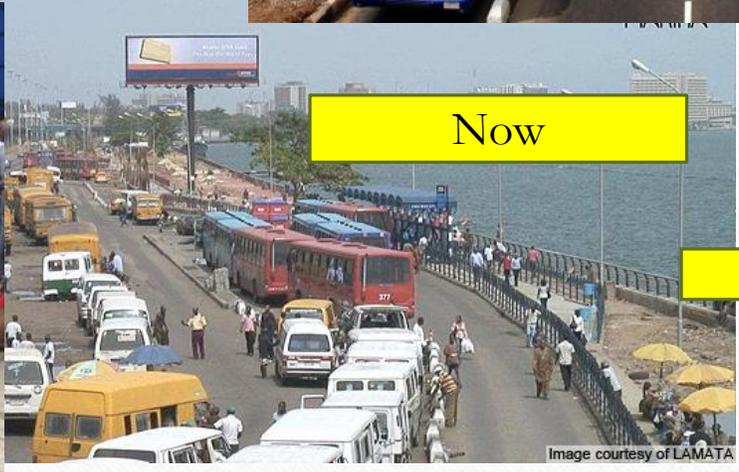
Buses 2001



BRT now



Stranded commuters



Now



Integration ongoing



MARINA

Image courtesy of LAMATA

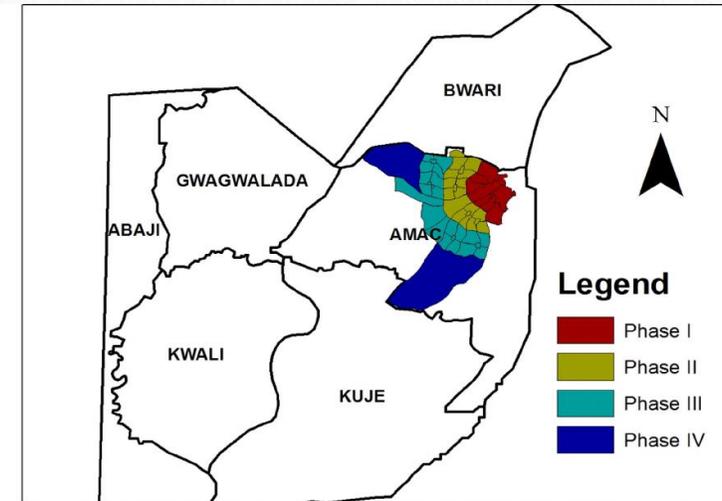
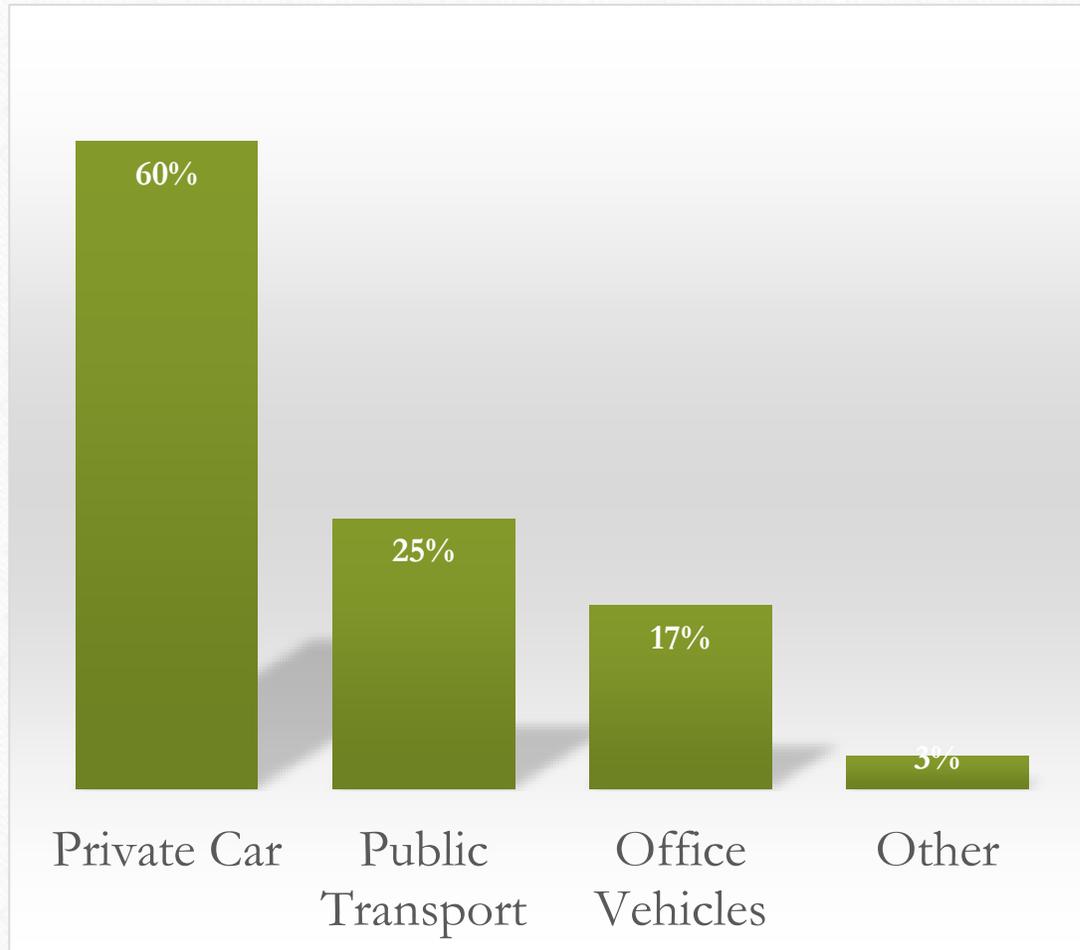
The city was building  
for cars



Abuja



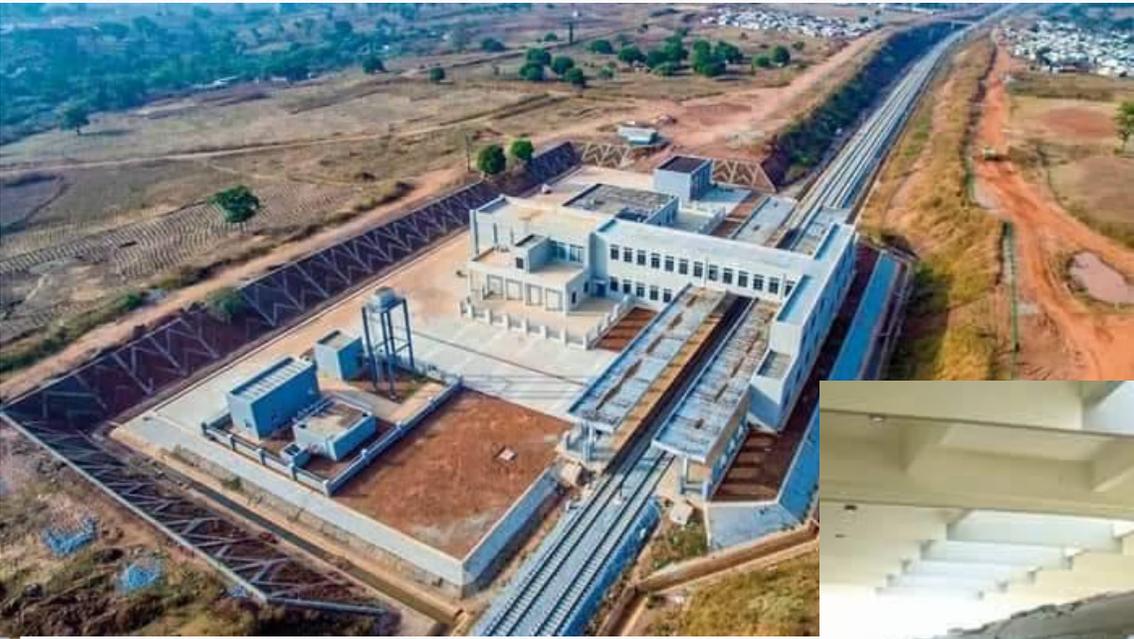
## Where do people live in Abuja



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







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

The completed 1st Phase will convey 350,000 commuters daily



## 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 with a BRT component 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 owners: **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 too much**
- 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



How we usually plan streets

Shrink the car by  
magnifying public  
transport and  
NMT

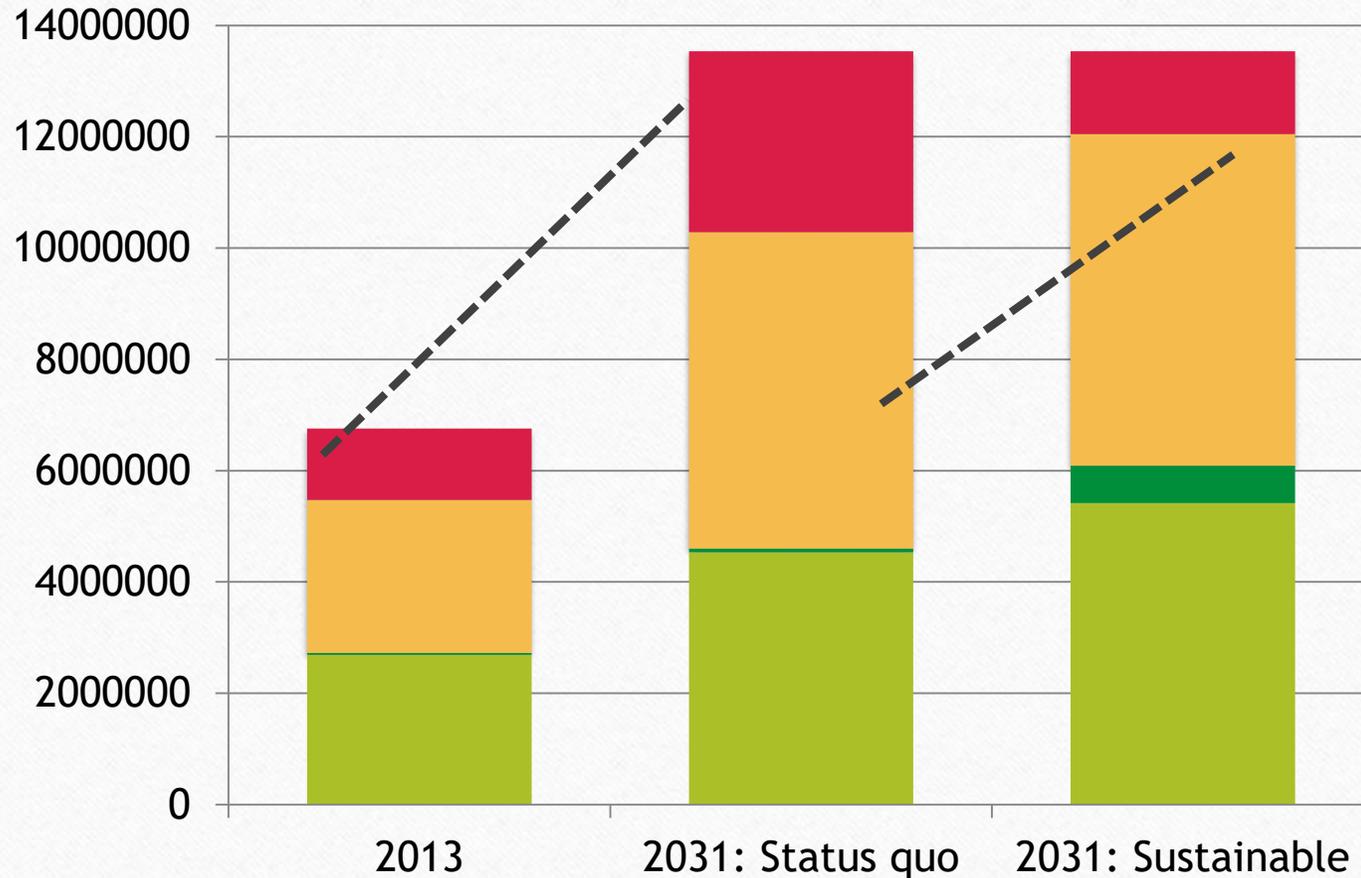


A more equitable approach

# A typical city: Status quo



Trips per day

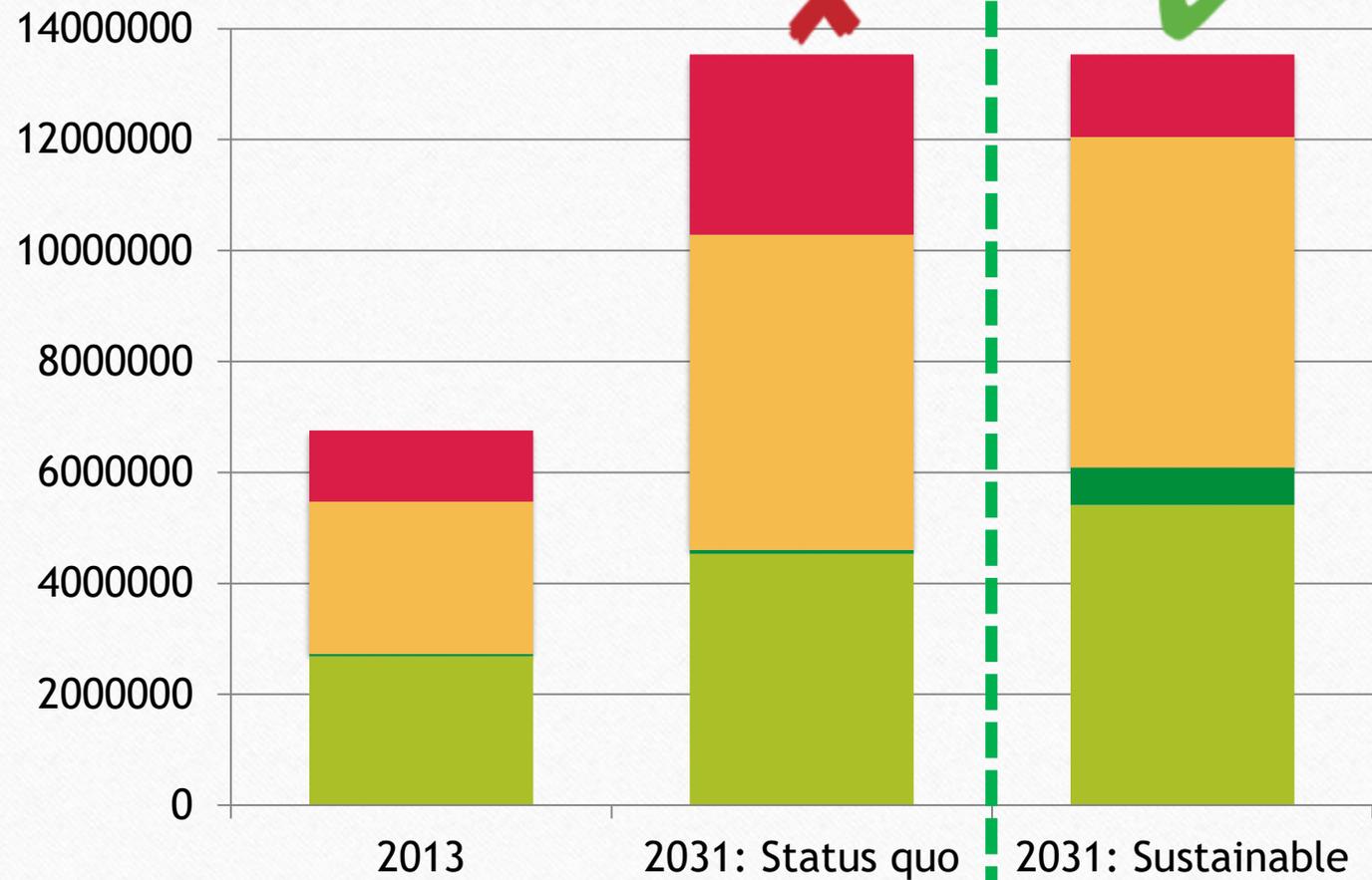


At the current growth rate, trips by cars and 2Ws will double or triple by 2030

# 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



# There is a huge Knowledge Gap



- Too few schools offer undergraduate courses on transportation
- Whereas countries of Europe especially have universities that offer direct courses on Urban mobility
- Knowing transportation does not actually mean knowing urban mobility
- Beyond post graduate programs we need undergraduate transportation courses and with specialties in urban mobility
- We have a number of workshops like this hosted by UNDP, SSATP, UN-HABITAT, etc, but that are limited in outreach
- But more importantly, we need existing policy makers at all levels to understand urban mobility otherwise its waste of energy

  
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Partners are needed to actualize some of the initiatives  
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*Ochemuel*  
*Bike Share*

# 1<sup>st</sup> United Nation's World Bicycle Day 2018

**"Dad don't drop  
me off, buy me  
a bicycle**

*...it makes me happier  
and healthier"*



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# We are leading campaigns on urban cycling

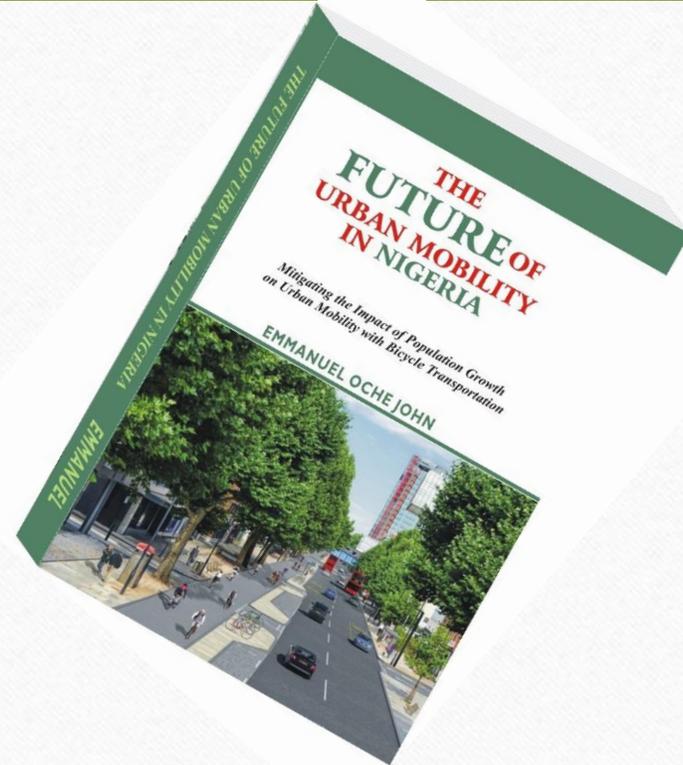
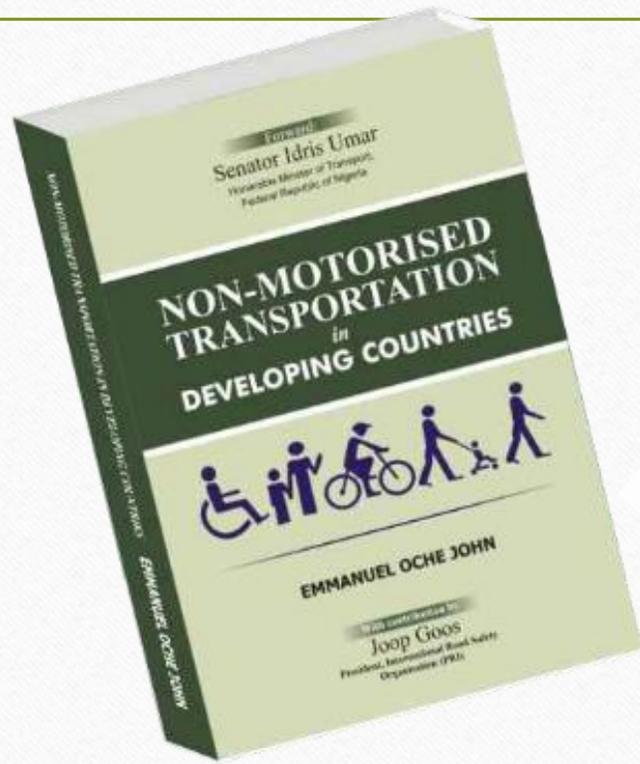


## What is a Street Meant for?

Thus saith the Lord of  
Host: there shall yet old  
men and old women dwell  
in the streets of  
Jerusalem... And the  
streets of the city shall be  
full of boys and girls  
playing in the streets  
thereof  
- Zachariah 8:4-5



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





*Theme:* **THE ROLE OF TRANSPORTATION IN THE SUSTAINABLE DEVELOPMENT GOALS**

**Venue: International Conference Center, Central Business District, Abuja Nigeria**

Transportation plays a cardinal role directly in 5 of the 17 Sustainable Development Goals (SDGs) and indirectly in 7 other goals. Over the years Nigeria's development has been impeded by a wide range of challenges limiting its ability to meet the growing demands to provide mobility systems that are adequate, reliable, safe, sustainable and affordable, and more importantly, support other critical sectors of its socio-economic development. It is for this reason that Transportation Growth Initiative will be leveraging on the SDGs, Nigeria National targets and other global indicators to answer the many questions in our transportation system in Nigeria and

Africa. The Conference will come out with a blue print that will provide a platform for awareness, generate public interest and outline roles of stakeholders to improving transportation efficiency.

You will meet with decision makers, captains of industry, academics, operators, researchers and other interests who will present highly inspiring technical and operational papers in 6 consolidated plenary sessions. There will be exclusive case studies, round table sessions and interactive assembly.

**CONFERENCE SUB-TEAM**

- |  |  |
|--|--|
| 1. Clement change and mobility                           | 4. Good governance and policy administration in urban mobility |
| 2. The role transportation in Poverty Reduction          | 5. Healthy living, resilience and social well being.           |
| 3. Agricultural Value Chain: The role of transportation. | 6. Mobility, Urban space and land use                          |

**IMPORTANT DATES**

Abstract submission	30th June, 2018 to 15 <sup>th</sup> August, 2018
Announcement of Speakers	30 <sup>th</sup> August, 2018
Registration	30 <sup>th</sup> August 2018
Early Bird	30 <sup>th</sup> August to 1 <sup>st</sup> October, 2018 - \$100
Main registration	2 <sup>nd</sup> October to 22 <sup>nd</sup> October - \$150
Welcome cocktail	22 <sup>nd</sup> October, 2018 at 6pm

**ABSTRACTS SUBMISSION**

Abstracts must be between 250 and 350 words, font size 12, Times New Roman, double line spacing. All papers will be peer reviewed and published in the TGI Journal. Make abstract submission to [conference@tgi.org.ng](mailto:conference@tgi.org.ng). Check the conference segment of the TGI website for further details and download format for full paper.

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