

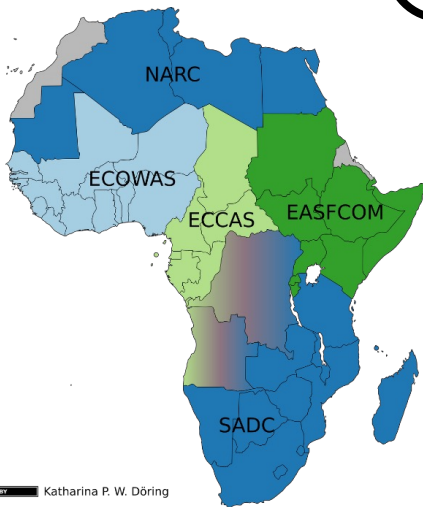
AFRICAN ROAD MAINTENANCE FUNDS ASSOCIATION

“QUEST FOR SUSTAINABLE ROAD SECTOR FUNDING ON THE AFRICAN CONTINENT”

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Presentation Outline



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- 1: INTRODUCTION
- 2: ARMFA
- 3: Roads and Development
- 4: Africa and Electric Vehicles
5. Alternative Funding Streams
- 6: Case for Namibia

Introduction: Why roads?



- **Road Asset provide a catalyst for social & economic growth of a country and translates into better quality of life for the people.**

Development in the quest of sustainable road maintenance on continent

Reduced funds for road maintenance leading to accelerated deterioration of road network on continent

Introduction: Global Strategy for Roads

- The number and extent of roads will expand dramatically this century
- Globally, at least **25 million kilometres** of new roads are anticipated by **2050**
- Representing a **60% increase** in the total length of roads over that of **2010**
- **Nine-tenths** of all road construction is expected to occur in developing nations

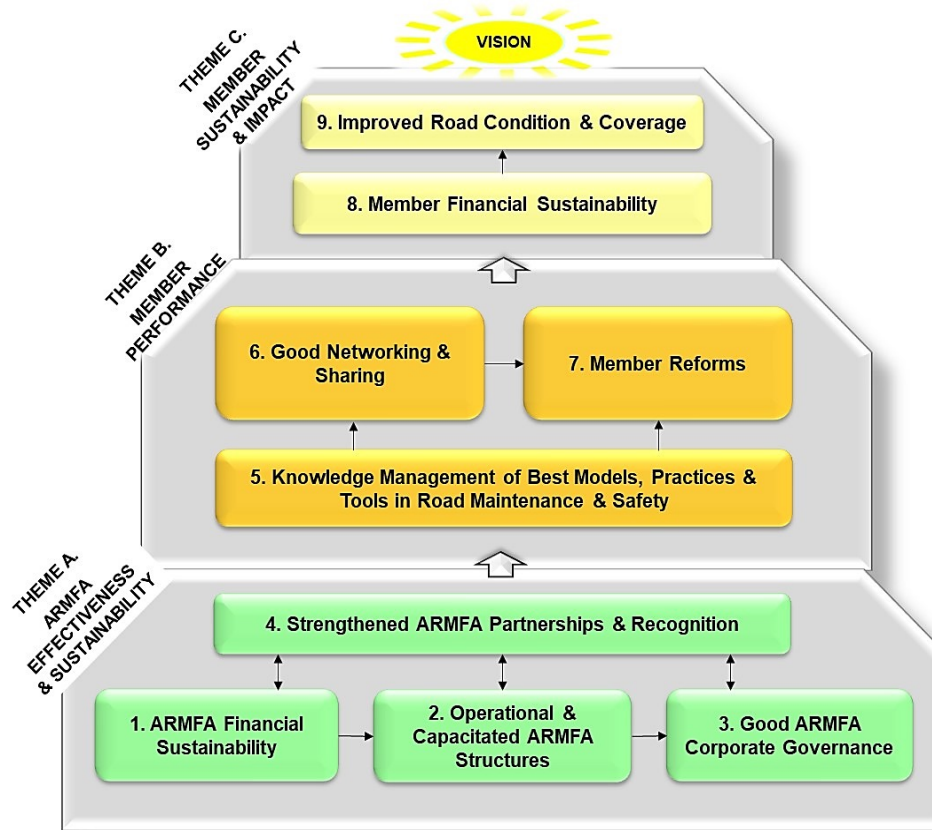
*The **Global Strategy** seeks to limit the **environmental costs** of road expansion while maximizing its benefits for **human development***

ARMFA

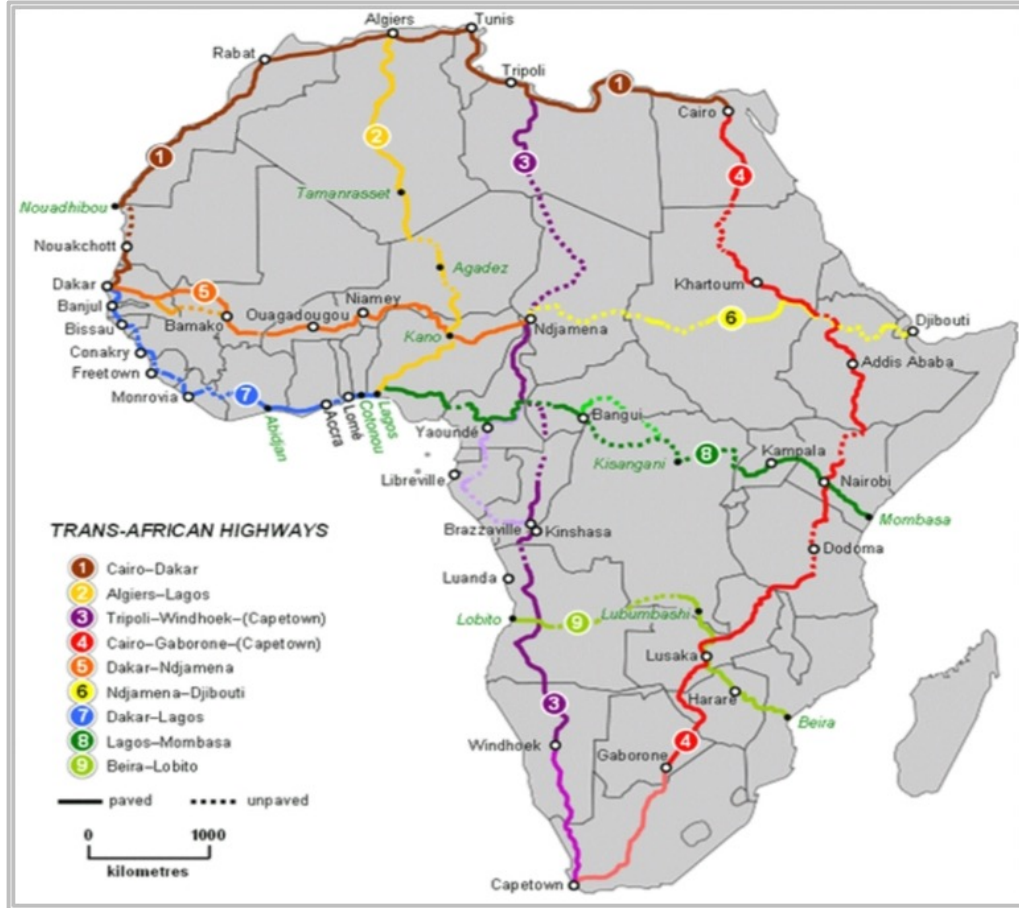


- **Association of African Roads Maintenance Funds.**
- **36-members, non-political & non-profit continental body: Sub-Saharan.**
- **Founded 18 Dec 2003 in Libreville, Gabon.**
- **ARMFA's main objective: form a platform and a network for experience and information sharing on best road maintenance practices in Africa; to ensure that the African roads are efficiently funded and well maintained; to promote and strengthen links between members of African RFs, so that RFs achieve sustainability in funding and functions.**

ARMFA Strategy Map



Trans-African Road Network

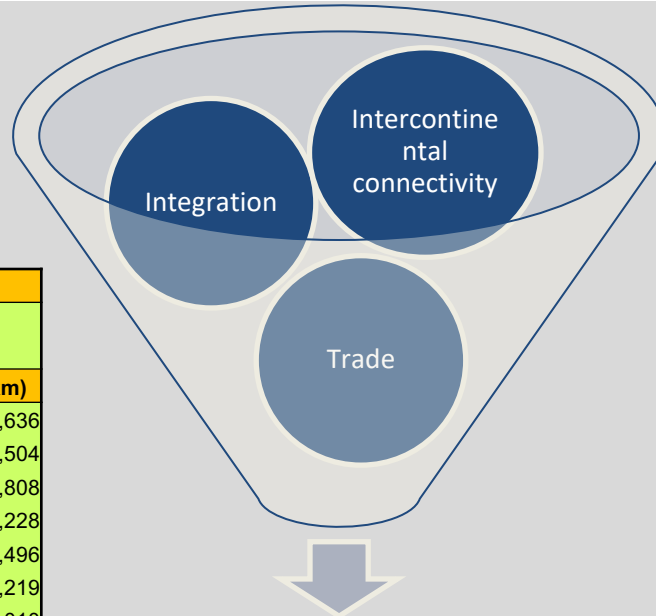


African Context

- Surface Area: 30.37 million km²
- Land mass: 20% total earth surface area
- Population: 1.275 billion (2018)
16% of world human population
- Population density: 36.4/km²
- Countries/States: 54
- GDP (nominal): USD 2.49 trillion
(2021 est.)
- GDP per capita: USD1,860 (2021 est.)
- Road network: 2.832 mil km (2017 est.)
- Vehicles: over 21.6 million passenger vehicles
- Most registered vehicles: South Africa

Current Status (cont'd...)

Trans-African Highway network		
Length	56,683 km (35,221 mi)	
Formed	2007	
Highway names	Length (km)	
TAH 1	Cairo-Dakar Highway	8,636
TAH 2	Algiers-Lagos Highway	4,504
TAH 3	Tripoli-Cape Town Highway	10,808
TAH 4	Cairo-Cape Town Highway	10,228
TAH 5	Dakar-Ndjamena Highway	4,496
TAH 6	Ndjamena-Djibouti Highway	4,219
TAH 7	Dakar-Lagos Highway	4,010
TAH 8	Lagos-Mombasa Highway	10,269
TAH 9	Beira-Lobito Highway	3,523



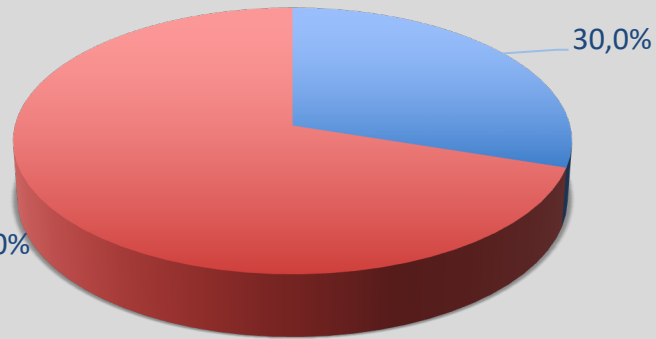
Africa Continental Free Trade Area (AfCFTA) 2021

Trans-Africa Highway (TAH)-
56,683km

Distribution of Roads in Africa

Africa Road Network

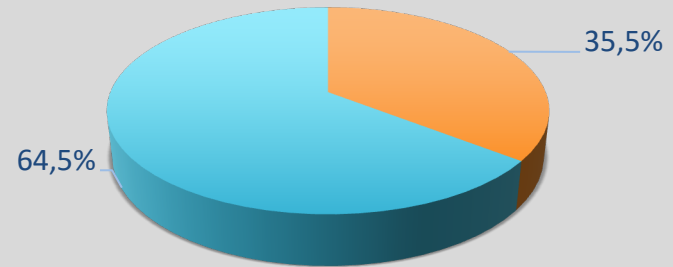
* 2,832,100 km



■ Paved network ■ Unpaved network

Road Network Regional Distribution *

2,832,100km



■ SADC ■ Other regions

* Source: Export-Import Bank of India, 2018

Roads and Sustainable Development

Call for a coordinated approach to global warming

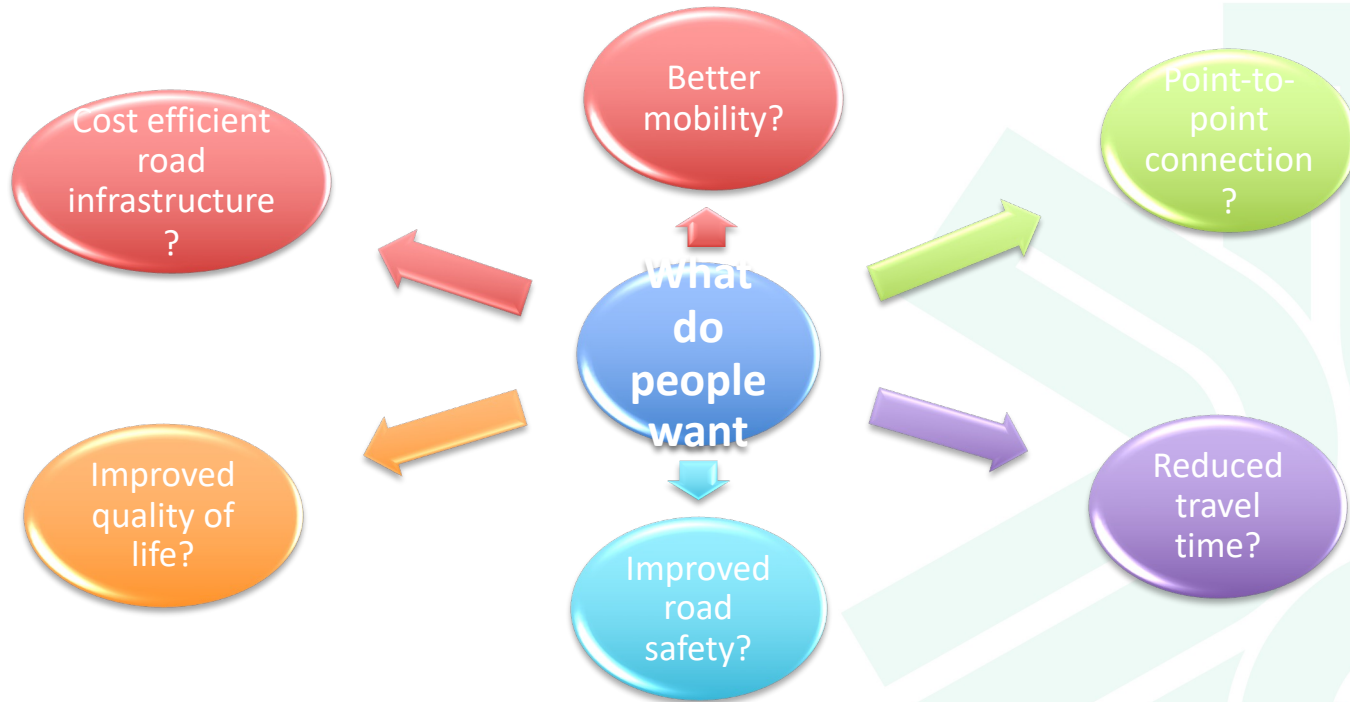
Roads and noise reduction programmes

Role of Intelligent Transport Systems

Road investment

Response to socio-economic issues

Efficient road infrastructure



Decarbonise Roads



Paris Agreement - UN 2015

Ratified by 99% of nations



Roads contributing
30% of air pollutants

Hybrids
(fuel & electric)
– use of alternative fuels to
gasoline & diesel such as
electric & hydrogen

Impact of EVs & Fuel Efficient Vehicles



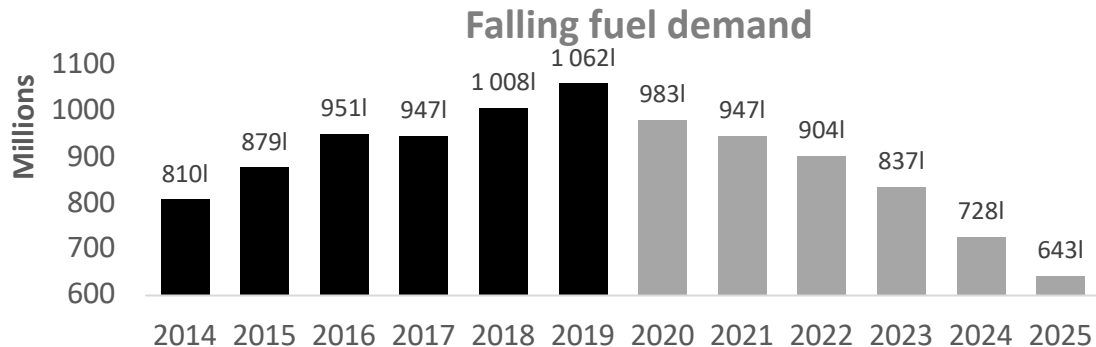
- Emergence of fuel efficient vehicles: less fuel consumed, hence less fuel levy collected
- Introduction of electric vehicles: less fuel levy revenue to be raised from road user charges
- Paris Agreement: emissions containment to be within the allowable limit(s)
- Diversification of the revenue streams from traditional sources of funding for road maintenance & rehab
- Technological challenges in the introduction of EVs in Africa

Current Perspective: Global



- **Total annual EVs sold (2021): est. 6.5 million, up 109% from 3.24 million EVs sold in 2020.**
- **EV sales represent 9% of global vehicle sales in 2021.**
- **85% of EVs sold were sold in China (3.2 mil = 15% of all new cars) and Europe (2.3 mil = 19%).**
- **In China the number of EVs more than doubled compared to 2020, presenting huge opportunity for future growth.**
- **Norway still leads the European market with about 75% of EU EV market share.**
- **Demand for EVs continues to be strong in Europe.**

Change Drivers: Case for Namibia



Fuel demand is falling and eventually fuel demand will phase out and thus makes the current funding model obsolete, wiping out 60% of the Namibia RFA's revenue base

Impact on funding: Reduced funds for road maintenance leading to accelerated deterioration of road network on continent

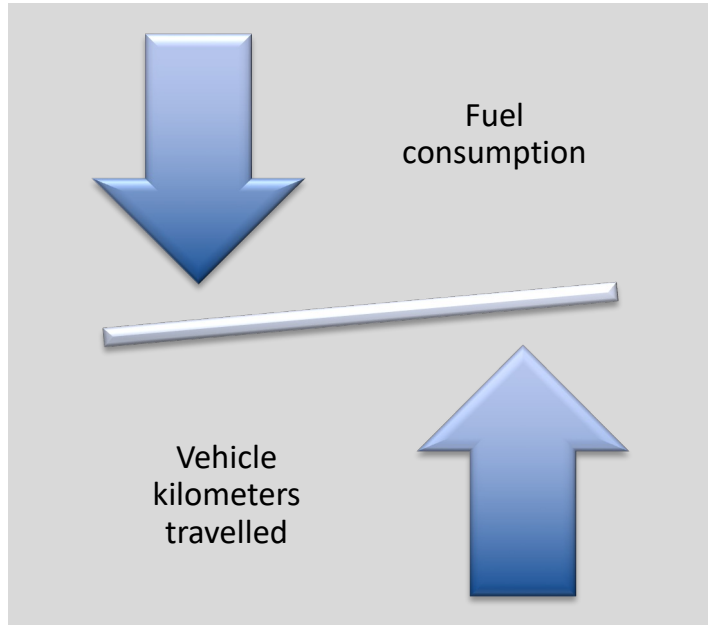
Implication

- ✓ **Increasing fuel efficiency**
Modern vehicles travel further, using less fuel, thereby eroding revenue from fuel levies.
- ✓ **Electric vehicles**
Electric vehicles use zero fuel
- ✓ **Social trends**
 - Carpooling
 - Work from home
- ✓ **eHailing**
 - Uber
 - Taxify
 - Lefa

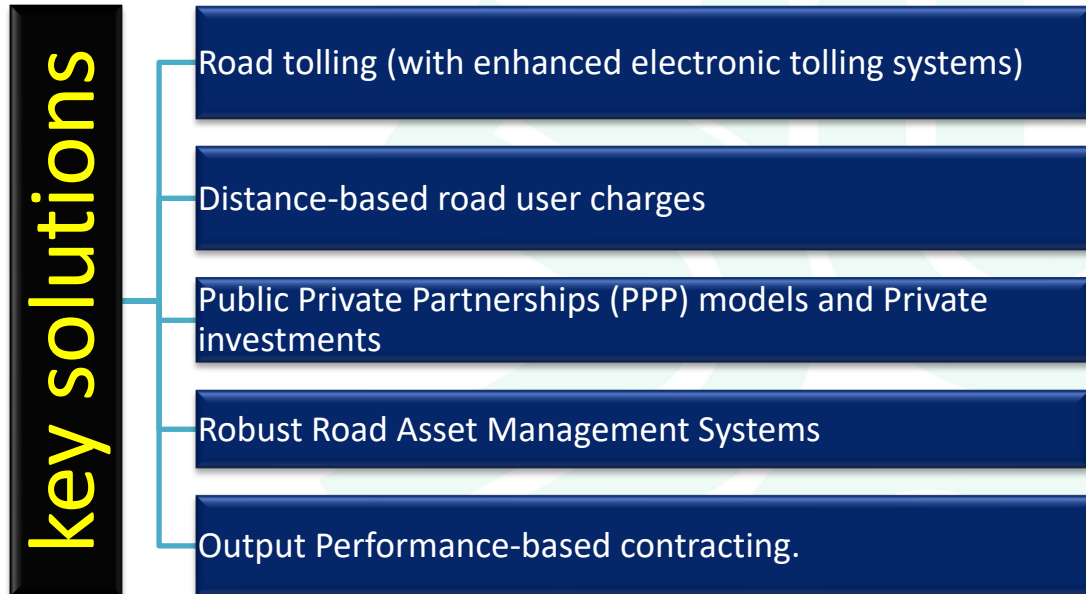
Reduced Fuel Levy = Innovation

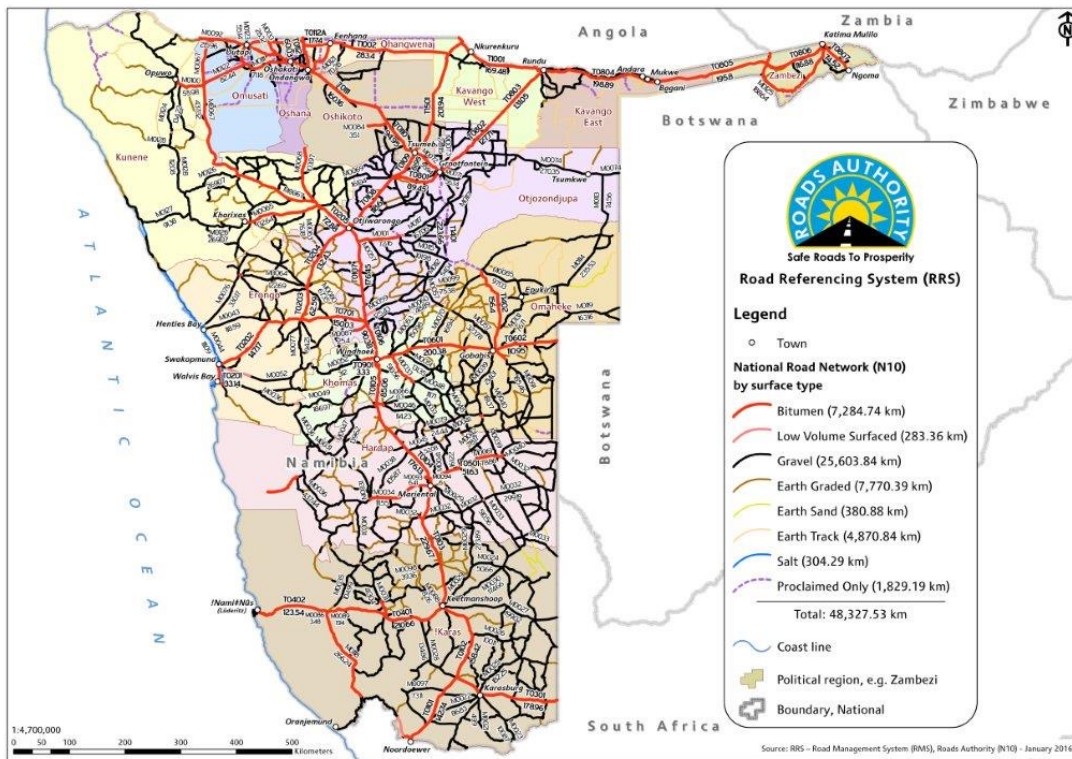


Impact on road funding



Innovative road funding strategies





Namibia Case

- Road Sector Reform of 1999 – creation of independent institutions
- Creation Road Fund Administration – Regulator & Funder
- Creation of Roads Authority – Design, Manage & Maintain the national road network (49,000 km)
- RFA – RUCS revenue +/-USD200m P.A – ringfenced for road maintenance and rehabilitation
- Broad based RUCS – Fuel Levies, Vehicle Licensing, Cross Border Charges, Mass Distance Charges, Abnormal Loads
- GRN budget allocation +/-USD200m P.A. for new Roads
- Invested heavily in Road Asset Management System
- Performance-based Contract Management System
- **Results – ranked 1st in Africa over past 5 years in terms of access and quality of roads infrastructure & 23 in the world in 2021**

Innovation & Sustainable Funding

Case of Automation of Mass Distance Charges (MDC) in Namibia

Mass Distance Charges (MDC) principles:

- Directly related to amount of road use;
- Not related to fuel consumed;
- Requires capturing of distance travelled (tracking technology fitted onto vehicles with identifiers, readers, on-board units etc.);

Benefits:

- Increased MDC revenue;
- Enhance collection and billing from the automated technologies;
- Increasing the effectiveness of traffic law enforcement;
- Interface and integration with other systems in the road revenue collection.



Change Management



- **Enabling legislation: Policy, laws and regulations**
- **Dealing with energy charges, licensing and rebates: Electricity Control Board and Ministry of Mines and Energy**
- **Provision & maintenance of e-charging infrastructure**
- **Costs of e-vehicles and components**
- **Change management and stakeholder buy-in**



Way Forward

Introduce distance-based travel charges:

- Most equitable and sustainable road user charge
- Allows road user to the choice and decision on the need for the trip, and usage of the road asset provided.

Implement Climate Change Adaptation Framework in road sector / transport sector:

- Adopt new policy framework and regulations
- Invest in key infrastructure such as charging stations across rural Africa.

It is incumbent upon Africa to follow suit and position itself accordingly, in anticipation of technological advancement in generating revenue for our roads.

