

9th INTERNATIONAL CONGRESS
ON TRANSPORTATION
RESEARCH



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Thematic Fact Sheets on Road Safety Risk Factors in Africa A Knowledge and Management Tool

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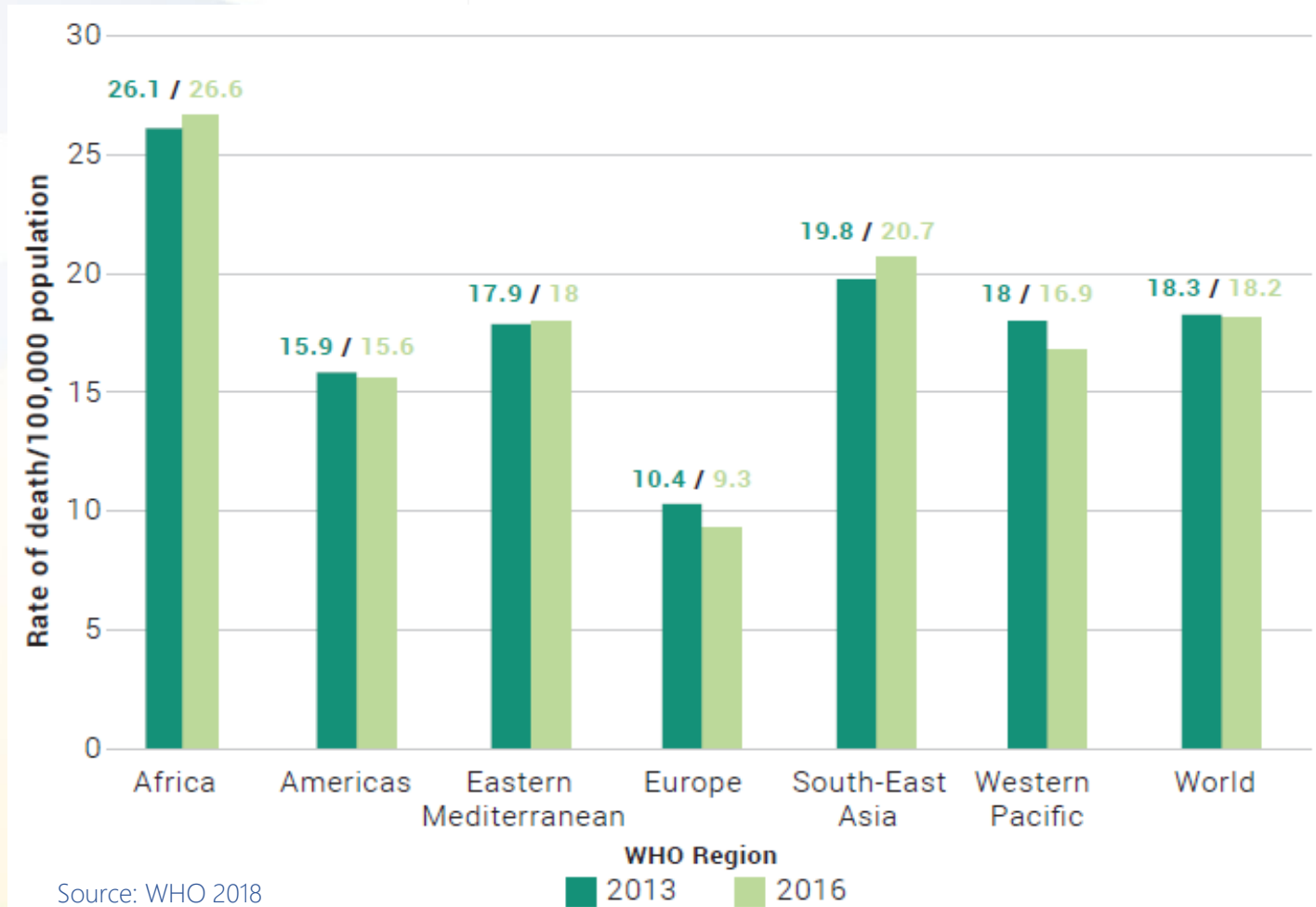
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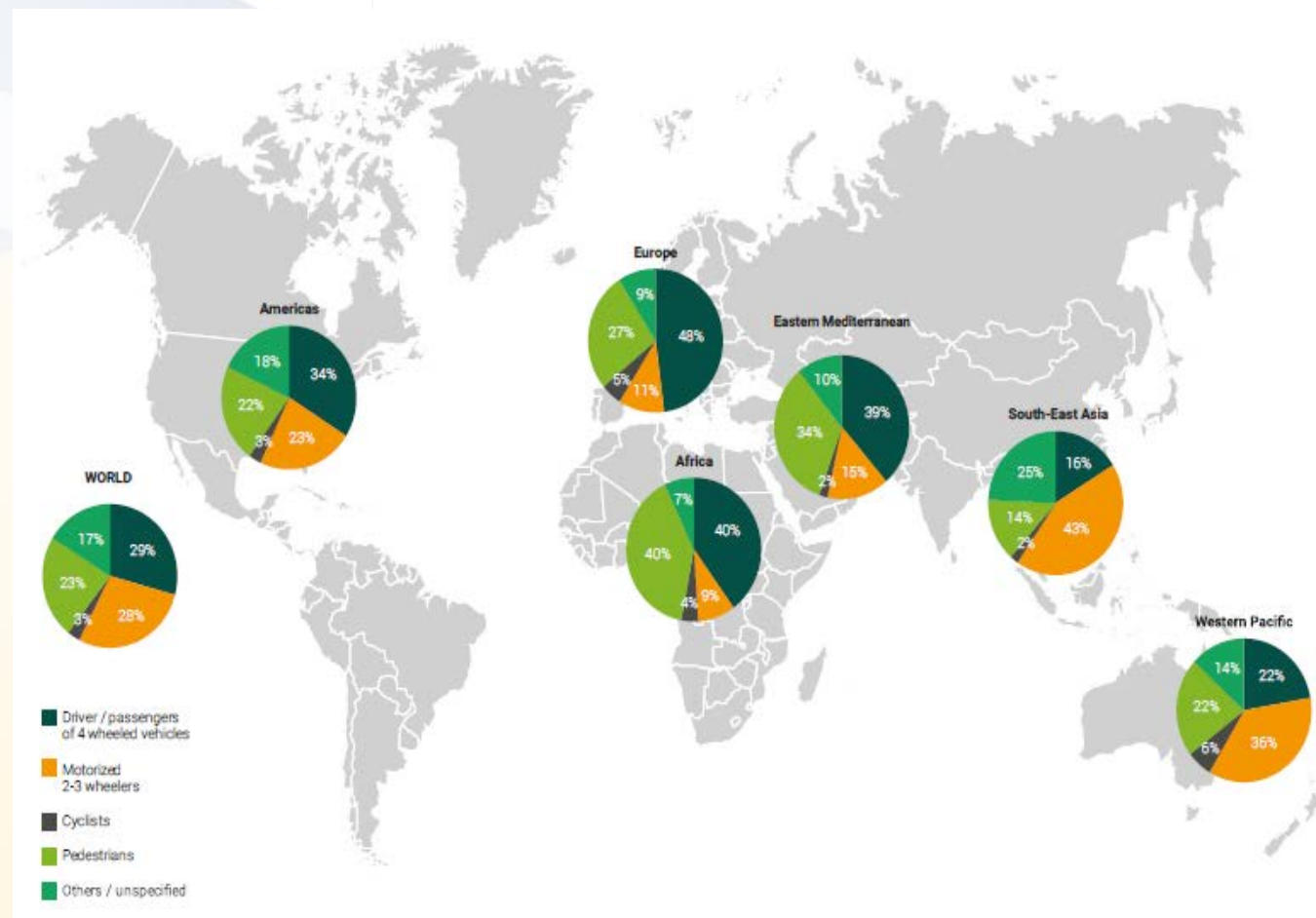
Road Safety in Africa

- Africa presents the highest traffic fatality rates globally, with almost **3x higher** fatality risk than Europe



Road Safety in Africa

- More than half of all fatalities in the world concern **VRUs** (motorcyclists, cyclists, pedestrians)
- The African Region has the **highest proportion of pedestrian and cyclist fatalities** (44%) of all road traffic deaths
- This is partly attributed to the fact that **walking and cycling** are important means of transport in Africa



Source: WHO 2018



Why SaferAfrica?

- 300,000 traffic fatalities and over 5mil. injured per year
- Opportunity to exchange information and experience between Europe & Africa
- Assist with evidence and data gathering
- Strengthen capacity and identify training needs
- Transfer and share good practices



The SaferAfrica Project

- **Funded** under the Horizon 2020 Mobility for Growth (MG-3.6-2016 – Euro-African initiative on road safety and traffic management)
- **Title:** SaferAfrica - Innovating Dialogue and Problems Appraisal for a Safer Africa
- **Duration:** 36 months (Oct 2016 – Sep 2019)
- **Project Leader:** University of Roma – La Sapienza



Project Partners

Participant Organisation Name	Country
Research Centre for Transport and Logistics (CTL) - Coordinator	Italy
National Technical University of Athens (NTUA)	Greece
Belgian Institute for Road Safety (IBSR)	Belgium
International Road Federation (IRF)	Switzerland
IFSTTAR	France
Loughborough University (LOUGH)	UK
National Laboratory of Civil Engineering (LNEC)	Portugal
Institute of Road Safety Research (SWOV)	Netherlands
SITRASS	France
Agency for the Promotion of European Research (APRE)	Italy
Vehicle and Traffic Safety Centre (SAFER)	Sweden
National Advanced School of Public Works (ENSTP)	Cameroon
Handicap International (HI)	Belgium
Abidjan – Lagos Corridor Organisation (OCAL)	Benin
ICI-Santé (ICI)	Burkina Faso
International Motor Vehicle Inspection Committee (CITA)	Belgium



SaferAfrica Objectives

- Create **favorable conditions** and opportunities for the **effective implementation of actions and knowledge** for road safety and traffic management in African countries by setting up
- **Dialogue Platform** between Africa and Europe
- **African Road Safety Observatory** (www.africanroadsafetyobservatory.org)



Limitations for Comparisons of Road Accident Data

- Incompatibility of data
 - Different collection procedures
 - Different definitions of the variables and values utilized
- Sources of data incompatibility:
 - Missing or incomplete national definitions (e.g. for weather conditions)
 - Different definitions in different countries (e.g. for road types)



Limitations for Comparisons of Road Accident Data

- Underreporting
 - Issue of **general concern** in Africa
- Additional inaccuracies
 - **Conditions** under which the primary **information** is **collected** by the police officer
 - Quality of **information** filled-in later on
 - **Inadequate training** of the **Police** collecting the information



Methodology

- **Analyse** collected road safety **data**
- **Identify** key **risk factors** affecting road safety in African countries



Data Analysis and Identification of Risk Factors

- Development of **data organisation** and **analysis system**
 - Produce indicators
 - Define critical areas per topic and region
- Data collection
 - International databases (WHO, IRF World Road Statistics, etc.)
 - Questionnaires distributed to national experts



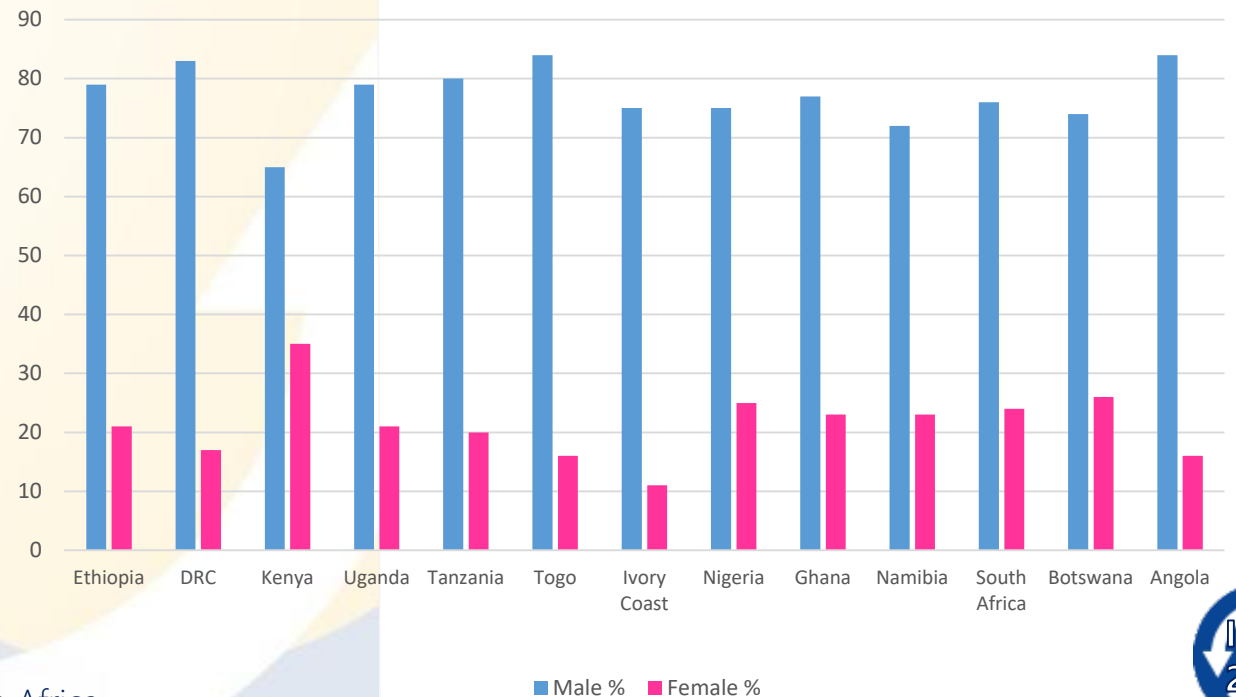
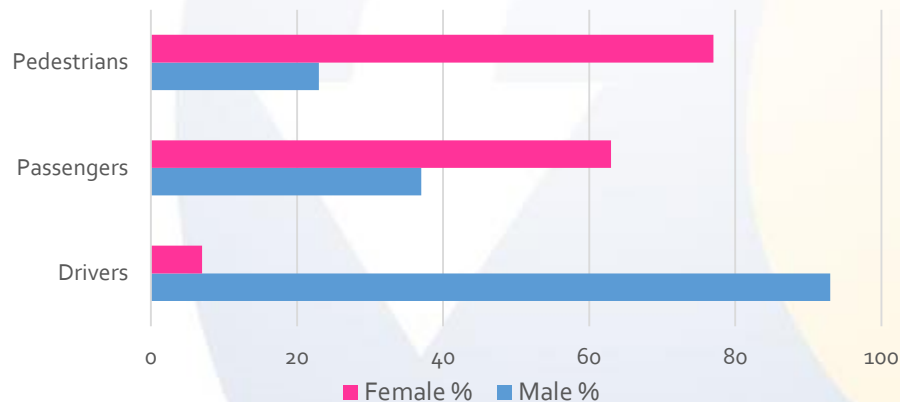
Thematic Topics for developing Knowledge and Management Tools

- Gender
- Road user behavior
- Infrastructure
- Vehicle
- Post-crash care
- Road Safety Management



Gender

- **Males** are more likely to be involved in road crashes
 - Higher **exposure**
 - **Riskier** driving **behaviour**
- **73%** of all road traffic deaths occur among young **males** under the **age of 25**
- Africa bears the biggest burden of them all



Road User Behavior

- Key **Risk Factors**
 - Speed
 - Alcohol
 - Helmet use
 - Seatbelt use
 - Child restraint use
- Exploited through
 - SPIs
 - Legislative and traffic law enforcement information



Road User Behavior

- SPIs relating to **speeding**
 - 3 countries available data
 - **50%** of drivers drive **above** the legal **speed limits**
- Not possible to draw conclusions
- **Speed** is a **contributory** factor to the **number of deaths**



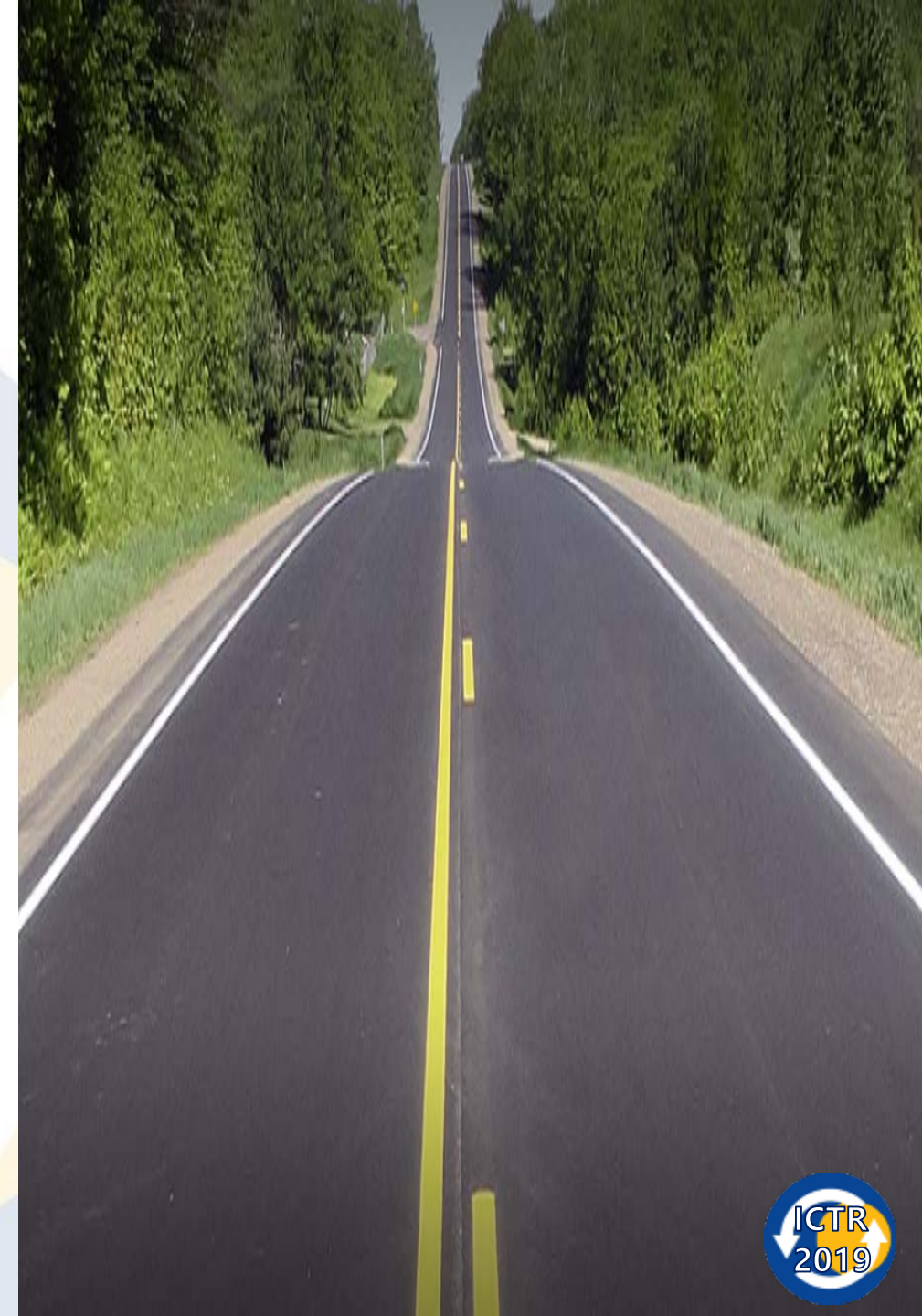
Road User Behavior

- Legislation vs road user behavior
 - **Enforcement**
 - **low** in most African countries
- Enforcement (high to low)
 - seatbelts use
 - helmet wearing
 - speeding
 - drink-driving



Infrastructure

- **Macroscopic** infrastructure risk factors
 - SaferAfrica analyses results (+ geographic regions)
 - Technical reports' results overview
 - International scientific papers' results overview
- **Microscopic** infrastructure risk factors
 - Technical report results
 - International published papers results



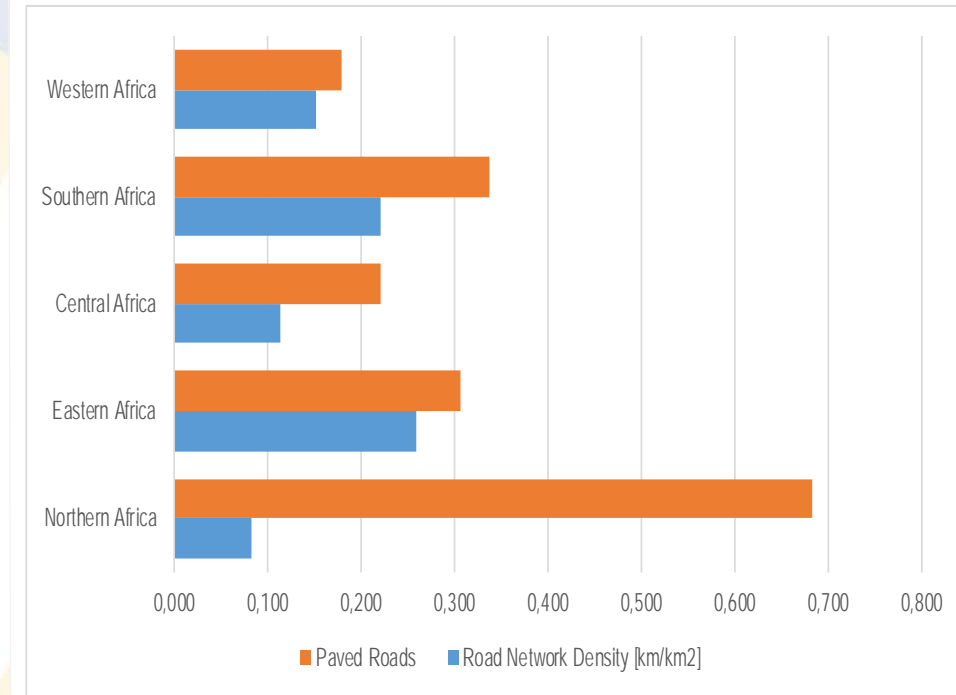
Infrastructure

- **Macroscopic** infrastructure risk factors

- Road network
 - weak but existent relationship with fatality rates
- Road type
 - inconsistency, between highways and rural roads
 - strong declining trend when examining the relationship between fatality rates and % of paved roads (WHO)
 - declining (weaker) trend when examining the relationship between fatality rates and network density (WHO)

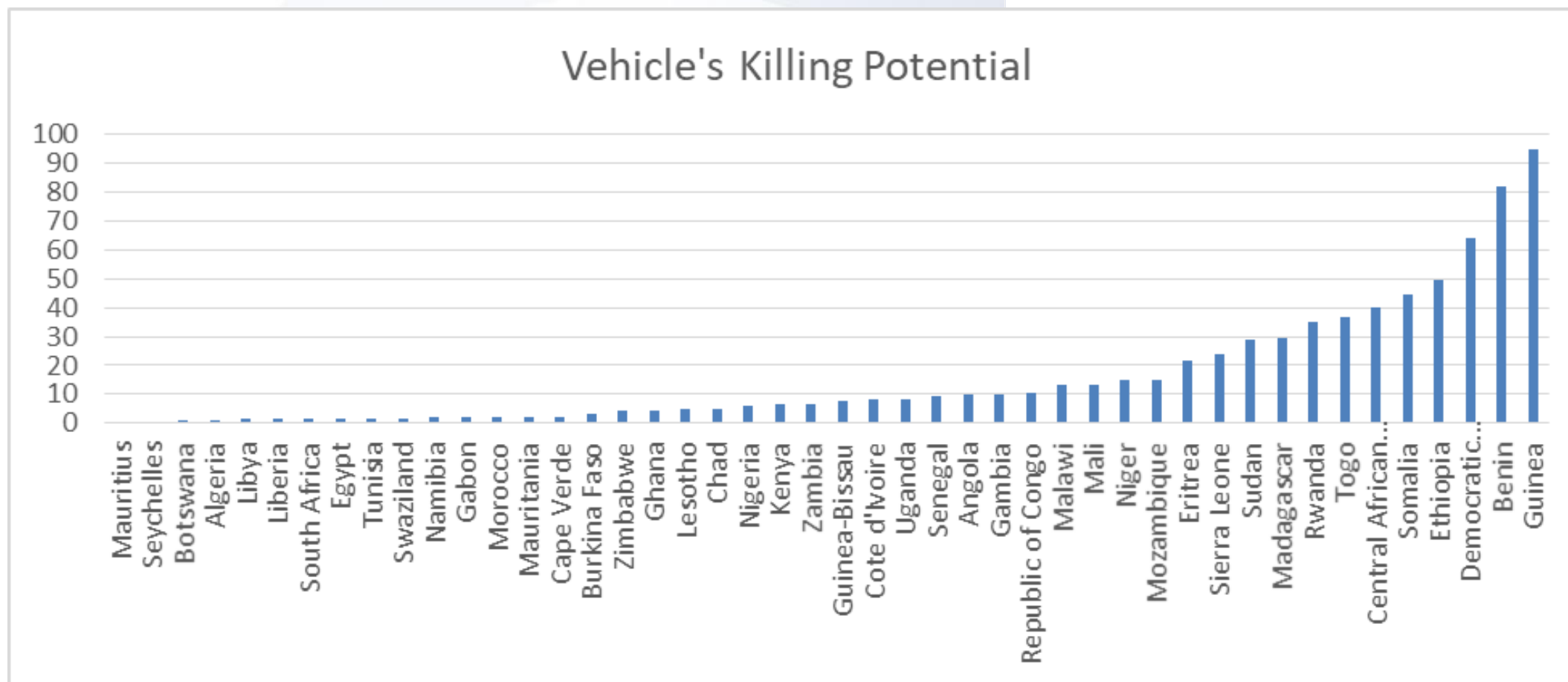
- **Microscopic** infrastructure risk factors

- Various potential factors
 - interchange spacing and type, road width, curve radius, absence of street light, etc.



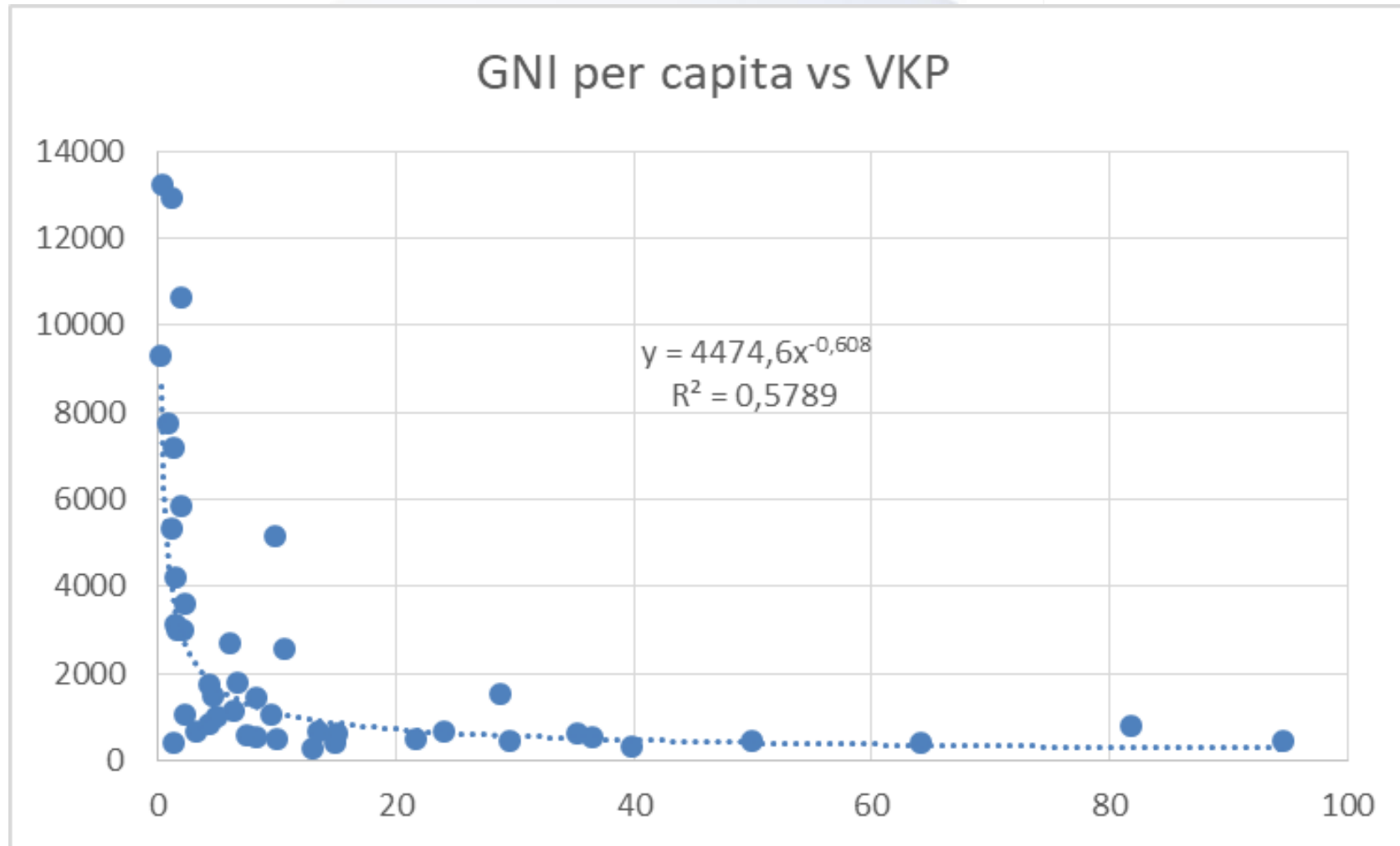
Vehicle

- Vehicle's Killing Potential (VKP)
 - # of deaths in accident crashes /1,000vehicles /year



Vehicle

- GNI per Capita (US\$) vs VKP



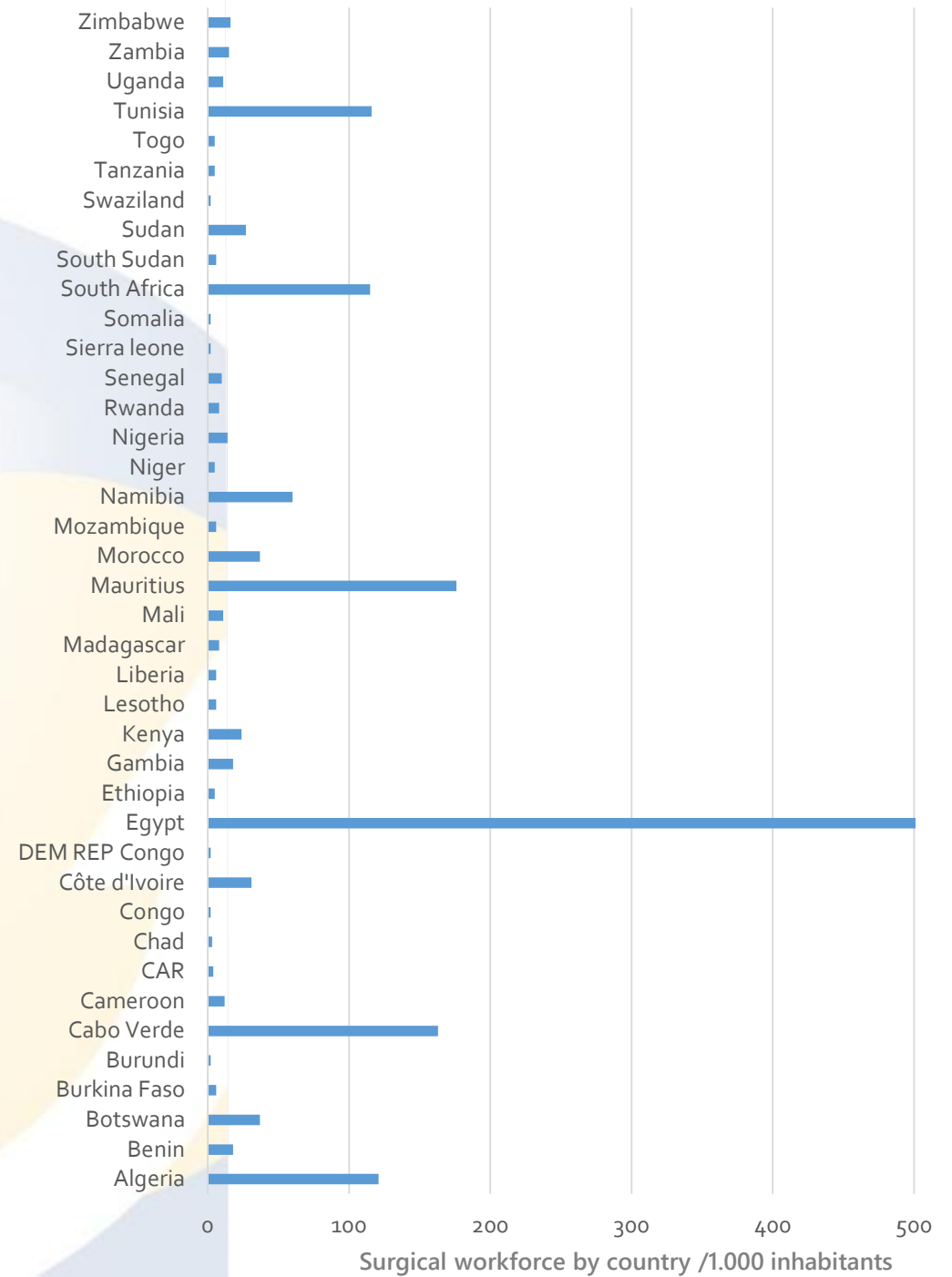
Post–Crash Care

- Key performance indicators explored through
 - **Emergency care** management
 - **Traffic incident** management
 - **Accident cost** management
 - **Rehabilitation** care management



Post-Crash Care

- Structure on **medical health** under development
 - **Post-crash care** still **poor**
 - limited resources (human – infrastructure)
 - most professionals not being specialized
 - ambulance services available only in cities
 - road infrastructure barrier in rural areas
- For many governments, first-aid courses
 - mandatory in schools
 - condition to get a drivers' license



Road Safety Management

- Critical issues
 - Existence of a **lead agency**
 - Mobilization of **resources**
 - Access to **good data**
 - **Information** recording



Road Safety Management

- In general **good performance**
 - Establishment of a **lead agency**
 - Existence of certain **management and evaluation tools**
- **Weakness**
 - Partial or lack of **dedicated funding** for the implementation of road safety strategies
 - Poor system
 - data registration
 - monitoring road safety performance

Road Safety Management	Established or strengthening of lead agency					Improved Management of Data	
	A lead agency is present	The lead agency is funded	National Road Strategy (NRS) present	Funding available to implement NRS Strategy	Fatality reduction target	Registration of total number of vehicles	Good death registration data
Algeria							
Angola							
Benin							
Botswana							
Burkina faso							
Burundi							
Cameroon							
Cabo Verde							
Centr. Afric. Rep.							
Chad							
Comoros							
Congo							
Côte d'Ivoire							
D.R. of the Congo							
Djibouti							
Egypt							
Equatorial Guinea							
Eritrea							
Ethiopia							
Gabon							
Gambia							
Ghana							
Guinea							
Guinea-Bissau							
Kenya							
Lesotho							
Liberia							
Lybia							
Madagascar							
Malawi							
Mali							
Mauritania							
Mauritius							
Morocco							
Mozambique							
Namibia							
Niger							
Nigeria							
Rwanda							
Sao Tome and Principe							
Senegal							
Seychelles							
Sierra Leone							
Somalia							
South Africa							
Sudan							
South Sudan							
Swaziland							
Tanzania							
Togo							
Tunisia							
Uganda							
Zambia							
Zimbabwe							



Synthesis

- Road safety in Africa is **poor**
- **Lack of knowledge** on road casualties
 - Number
 - Associated factors leading to road accidents
 - Serious deficiency of road safety data
- Available road safety data were analysed for identifying
 - **Key risk factors**
 - **Priority areas** for road safety actions and interventions per region/ country



Conclusions

- Results were published in the form of **Thematic Fact Sheets**
 - **Tool** for the **comparative assessment** of the road safety level
 - Their **systematic update** in the future is expected to contribute to the monitoring of the evolution of road safety performance



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