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Implementing Safe System and Vision Zero Principles in the DRC:

Lessons from Europe and Capacity Building through

AfroTrans Project

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Posters for AfroSafe Conference

Transferring European Road Safety Measures to the DRC: Opportunities, Constraints, and AfroTrans-Supported Adaptation Strategies

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AIM

- To examine the transferability of selected European road safety measures to the DRC
- To identify opportunities for adaptation, key structural and institutional constraints
- To exploit the role of AfroTrans project in supporting locally appropriate implementation strategies.

The focus is on how international experience can inform Congolese road safety practice without relying on costly or institutionally demanding solutions.

METHOD

Based on Transferability-oriented analytical approach

- Review of selected road safety measures applied in European contexts
- The examination of these measures against the Congolese transport and governance context.
- The consideration of keys factors in road safety
- The analysis is complemented by reflections drawn from AfroTrans project activities.

SELECTED SAFETY MEASURES IN EUROPEAN CONTEXTS

Selected safety Measures Comparison

Feature	Germany	Austria	Poland
Daytime Running Lights	Recommended (Mandatory for bikes).	Recommended (Mandatory for bikes).	Mandatory 24/7 for all vehicles.
Blood Alcohol (BAC)	0.5 g/l (0.0 for novices)	0.5 g/l (0.1 for novices)	0.2 g/l (Strict limit)
Pedestrian Priority..	High; strict stopping at zebras	High; must allow crossing intent	Absolute priority (even before stepping on)
Urban Speed Limit.	50 km/h (many 30 km/h zones)	50 km/h (strictly enforced)	50 km/h (standardized 24/7)
Mandatory Equipment	Triangle, Vest, First Aid Kit.	Triangle, Vest, First Aid Kit.	Triangle, Fire Extinguisher.

Figure 1: Selected safety measures which cand be implemented in DRC context

The transfert must rely on: Their functional objectives, Implementation requiremets and institutional preconditions.

VISION ZERO PRINCIPLES

7 Golden Rules for Vision Zero

1. Take leadership - demonstrate commitment
2. Identify hazards - control risks
3. Define targets - develop programmes
4. Ensure a safe and healthy system - be well-organized
5. Ensure safety and health in machines, equipment and workplaces
6. Improve qualifications - develop competence
7. Invest in people - motivate by participation

REALISATION THROUGH AFROTRANS

- The AfroTrans project plays a central role in enabling this process by serving as a platform for structured knowledge transfer and local adaptation.
- By focusing on adaptation rather than replication, AfroTrans contributes to the development of road safety solutions that are technically feasible, institutionally realistic, and aligned with Congolese mobility realities.
- Through academic cooperation, training, and methodological support, AfroTrans strengthens Congolese capacity to critically assess international practices, redesign them for local use, and implement them in a sustainable manner.
- A master Program is held by Afrotrans project with several Road safety related courses including:

Road maintenance and management
Road construction
Road Safety Audit
Road Safety Inspection
Pedestrian safety management
Methods of analysing and forecasting transport demand.
Planning the development of the sustainable transport systems

RESULTS/ ANALYTICAL INSIGHTS

- **Many European road safety measures depend on enabling conditions that are only partially present in the DRC. These include:**
  - Stable funding mechanisms,
  - Clearly defined institutional responsibilities,
  - Reliable crash data systems, consistent enforcement.

As a result, large-scale or capital-intensive interventions, such as fully protected cycling networks or automated enforcement systems, are difficult to implement in the short term.

- **Possible transferrable measures include:**
  - Physical speed reduction in high-risk locations,
  - Simplified traffic calming techniques,
  - Road markings and signage,
  - Basic pedestrian facilities near markets and schools
  - Targeted enforcement focused on a small number of high-risk behaviours.

CONCLUSION

- Integrating European safety measures through strategies specific to the DRC environment
- Prioritizing pragmatic, cost-effective interventions as a viable entry point for immediate safety gains.
- Embedding safety measures within a framework of local institutional learning and long-term development.

References:

[1] World Health Organization. *Road Safety country Profile: Democratic Republic of the Congo*. Geneva: WHO, 2023
[2] Federal Ministry for Climate Action: *Austrian Road Safety Strategy 2021-2030*, Vienna 2023.
[3] International Transport Forum. Sharing Road Safety: Developing an International Framework for Crash Modification Functions. Paris: OECD, 2012

Implementing Safe System and Vision Zero Principles in the DRC: Lessons from Europe and Capacity Building through AfroTrans Project

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AIM

- To assess the applicability of Safe System and Vision Zero principles in the DRC
- To identify structural and institutional barriers
- To evaluate the role of AfroTrans in capacity building

METHOD

- Qualitative and comparative analysis
- Review of European practices (Germany, Austria, Poland)
- Contextual analysis of DRC road safety system
- Integration of AfroTrans project insights

ROAD SAFETY CONTEXT IN THE DRC

- **high Road Traffic Mortality Burden**
  - 3,364 reported deaths (WHO, 2021)
  - Estimated real fatalities ≈ 15,651.
- **High Risk for Vulnerable Users**
  - Pedestrians, motorcyclists, public transport users
  - Shared space with high-speed traffic
- **Rapid Urbanisation Pressure**
  - Unplanned city growth
  - Increasing traffic complexity
- **Infrastructure Deficiencies**
  - Lack of sidewalks, crossings, and signage
  - Poor road maintenance
- **Weak Institutional Framework**
  - Fragmented responsibilities
  - Limited enforcement capacity
- **Lack of Reliable Data**
  - Underreporting of crashes
  - Weak basis for planning and evaluationsupport

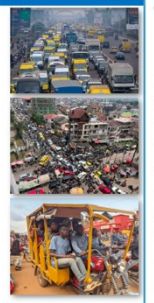

Figure 1: Mixed traffic conditions in urban DRC

VISION ZERO PRINCIPLES

Vision Zero is grounded in the **Safe System Approach**, which assumes that transport systems must be designed to accommodate human error:

- No loss of life is acceptable in road transport systems
- Human error is inevitable → system must be forgiving
- Shared responsibility between users, designers, and institutions
- Align infrastructure & speed with human physical tolerance
- Data-driven decision-making and system-wide safety management
- Proven success in countries like Germany, Austria, and Poland

Figure 2: Safe System components

IMPLEMENTATION THROUGH AFROTRANS

- AfroTrans acts as a capacity-building intervention within the Safe System framework
- Focuses on human capital development as a prerequisite for system transformation
- AfroTrans Project Strengthens institutional and human capacity in 6 key areas:
  - Fundamentals of transport systems and processes (courses 1,2)
  - Transport research and analysis (course 3)
  - Sustainable transport planning (courses 11,12)
  - Road infrastructure safety management (courses 6,7,8)
  - Logistic management (courses 9,10)
  - Road construction and maintenance (courses 4,5)
- These 6 areas are structured into 12 core courses within the Master's Programme (see Fig. "12 Courses")
- The project develops Master's Programme in Road Transportation Systems Engineering which:
  - Addresses critical education and expertise gaps in the DRC
  - Promotes academic collaboration between Africa and Europe

1. Fundamentals of transport
2. Traffic engineering
3. Transport research and analysis
4. Road maintenance and management
5. Road construction
6. Road Safety Audit
7. Road Safety Inspection
8. Pedestrian safety management
9. Supply Management and logistics
10. Distribution and material movement
11. Methods of analysing and forecasting transport demand
12. Planning the development of the sustainable transport systems

Figure 3: Capacity Building

OVERVIEW OF KEY FINDINGS

- Safe System principles are applicable but require contextual adaptation
- Direct policy transfer is constrained by institutional and economic differences
- Effective implementation requires incremental, context-sensitive interventions
- Priority should be low-cost, high-impact measures:
  - Traffic calming
  - Pedestrian infrastructure
  - Speed management
- Major barriers:
  - Weak institutions
  - Fragmented responsibilities
  - Poor crash data
- Vision Zero should be implemented gradually and iteratively
- Capacity building (AfroTrans) is key to sustainable transformation

CONCLUSION

- Safe System principles provide a valid framework for improving road safety in the DRC
- Implementation must be gradual, adaptive, and resource-sensitive
- Capacity building (AfroTrans) is a key enabler of sustainable transformation

References:

[1] World Health Organization. *Global status report on road safety*. Geneva: WHO, 2023
[2] European Commission. *Road safety in the European Union: Trends, statistics and main challenges*. Brussels, 2023.
[3] Organisation for Economic Co-operation and Development, & International Transport Forum. *Zero road deaths and serious injuries: Leading a paradigm shift to a Safe System*. Paris., 2016.
[4] World Bank. *Safe System approach to road safety: Lessons for low- and middle-income countries*. Washington, DC., 2018.

AFROTRANS IN ONE MINUTE

AfroTrans project

Co-funded by the European Union

AfroTrans build transport engineering capacity by developing

- *New master's curriculum,*
- *teaching materials,*
- *staff training,*
- *laboratories and*
- *long-term university cooperation.*

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Analysing the Situation in

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M23 rebels: UN sees progress in talks but warns violence p

© Natalia Peshkova | MONUSCO conducting patrols in 2025. @

5 February 2026 | Peace and Security

The United Nations has welcomed signs of progress in talks aimed at reducing violence in eastern Democratic Republic of t Congo.

Qatar is facilitating discussions between the Congolese government and the M23 armed group, which controls large areas of Nort South Kivu provinces.

The latest developments follow months of intense fighting that has displaced civilians and destabilised the region.

However, the UN warns that despite diplomatic momentum, the security situation on the ground remains volatile.

M23, also known as the March 23 Movement, controls large areas of North Kivu and South Kivu provinces. In January 2025, after a rapid offensive, the group seized Goma, the capital of North Kivu.

Weeks later, it captured Bukavu, the capital of South Kivu. Since then, the rebels have set up parallel administrations in areas under their control. The UN says the group is supported by the Rwandan armed forces, an allegation Kigali has repeatedly denied.

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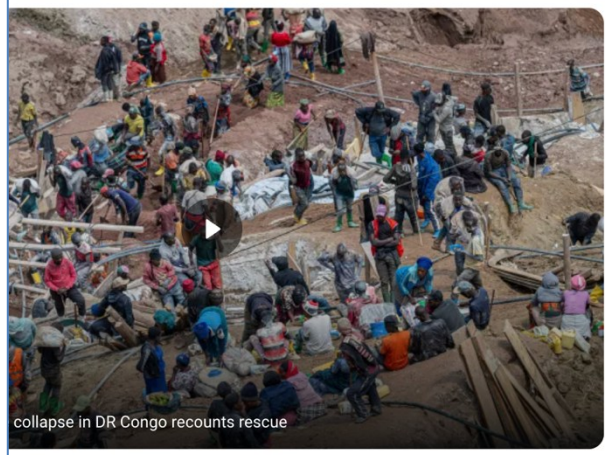

collapse in DR Congo recounts rescue

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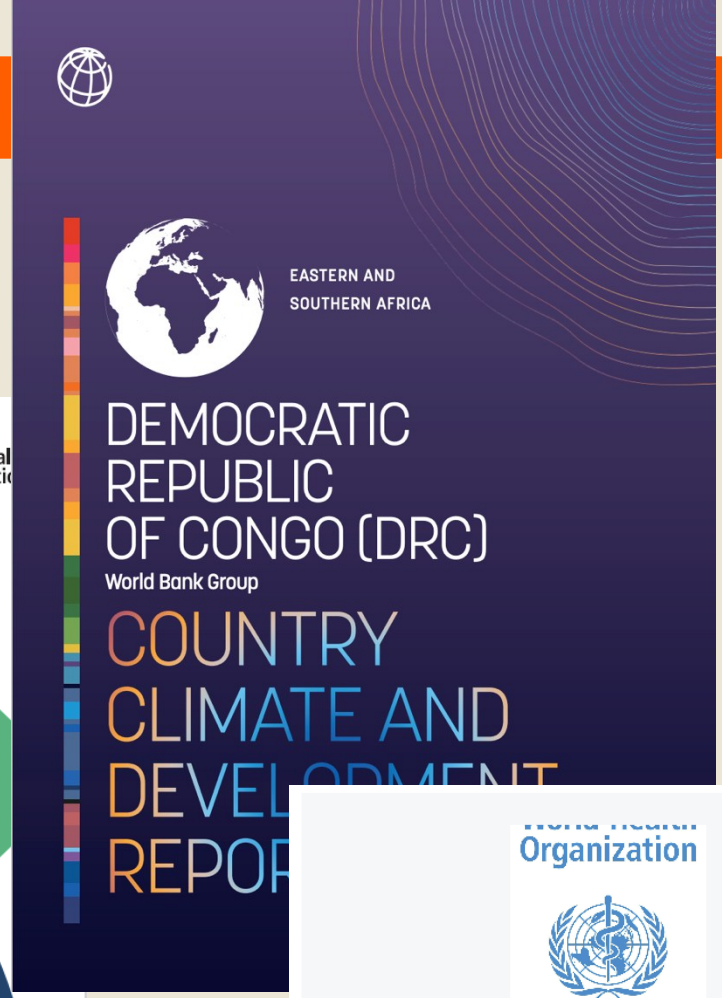
Analysing the Situation in DRC

Challenges:

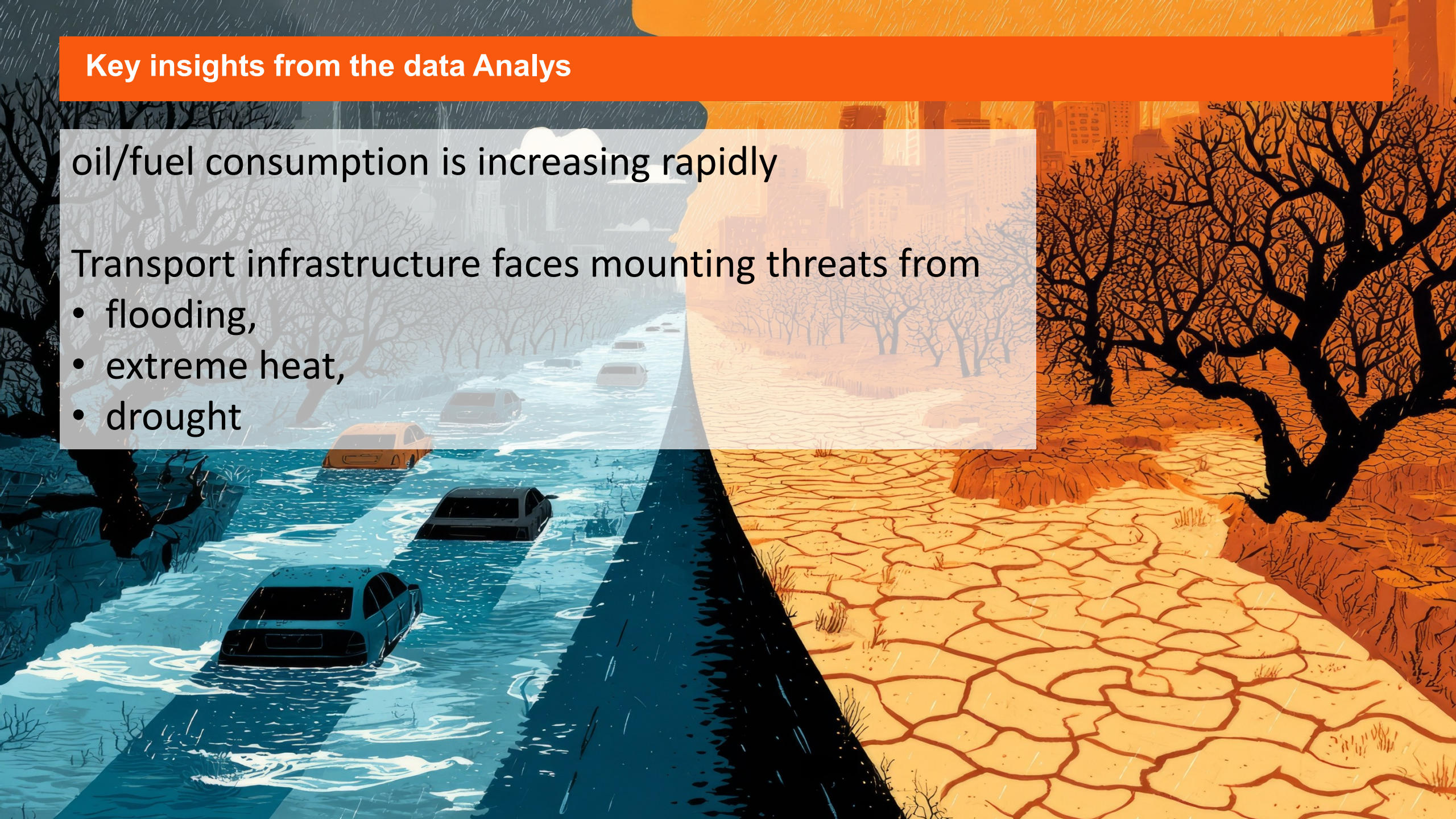
- not able to travel to DRC

Analyse Based on:

- publicly available data
- surveys at Universities



Key insights from the data Analys



oil/fuel consumption is increasing rapidly

Transport infrastructure faces mounting threats from

- flooding,
- extreme heat,
- drought

Key insights from the data Analys

Global status report on road safety 2023

Democratic Republic of the Congo

World Health Organization

BURDEN		Ⓔ
Reported fatalities (year)	3 364 (2021)	↑
Reported fatalities sex distribution (Male; Female)	85%; 15%	N/A
Reported fatalities user distribution[1]	36%; 12%; 52%; 0%; 0%	N/A
WHO estimated road traffic fatalities (95% CI) (year)	15 615 (95% CI 12 655 - 18 574) (2021)	↓
WHO estimated rate per 100 000 population (year)	16.3 (2021)	↓

- **Vulnerable road users are heavily exposed (pedestrians, cyclists and public transport users)**
- **Substantial underreporting on crash data**

Key insights from University Serveys

Survey about availability of

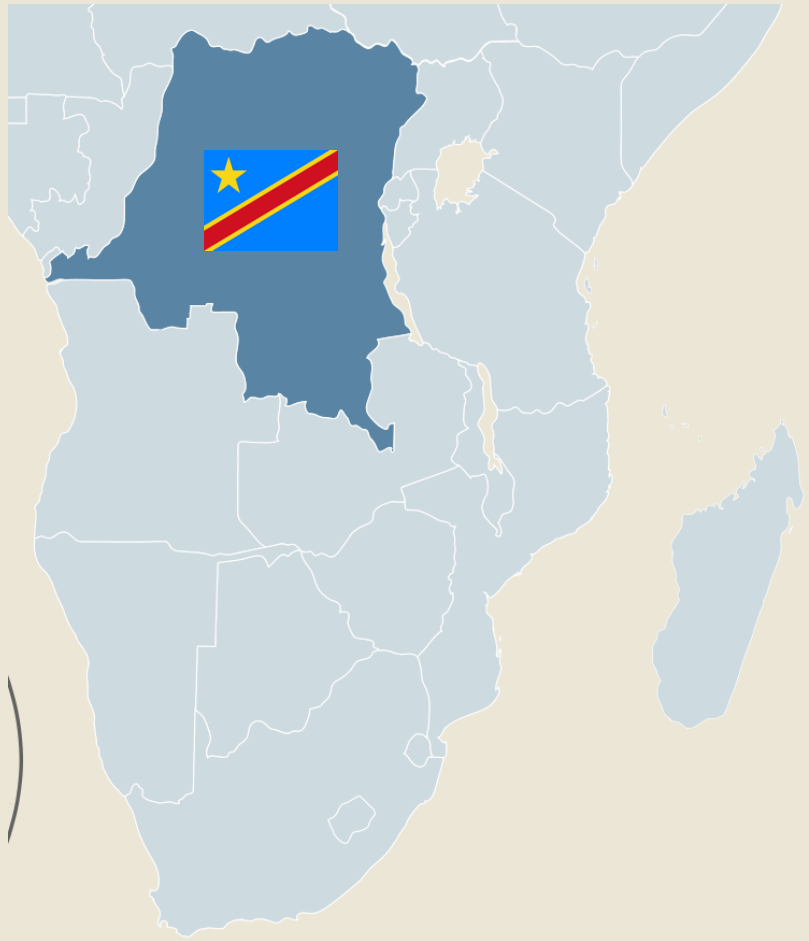
- content represented in Engineering Studyprograms
- availability of resources, methods, and data
- external assistances and experts

Content	UOR	ULPGL	UAC	UDS	INTIME
Transport Research and Analysis	3	2	2	3	3
Sustainable Transport Planning	0	0	1	0	3
Road Infrastructure Safety Management	0	0	0	2	5
Logistics management	2	0	1	1	3
Road construction and maintenance	2	1	2	4	6

Conclusion

Identified challenges in the DRC

- High road-traffic fatality rate.
- Incomplete data and widespread underreporting of accidents.
- Key topics such as road safety and sustainability are underrepresented in current civil and road engineering programs.
- Shortage of qualified experts and resources to integrate these topics into curricula.



Conclusion

When discussing the implementation of Safe System and vision Zero principals, education should be considered as a critical pillar

To adress these challanges, the AfroTrans Project

- **Builds a dedicated master's curriculum in Transportation Engineering**
- **Develops teaching materials for underrepresented content (safety & sustainability)**
- **Builds laboratories with innovative tools and methods**
- **Increases staff competences through training mobility and strengthens international cooperation**

Where AfroTrans Stands

- Concept for 12 specific courses developed
- Teaching materials in English and French nearly complete
- Materials will be publicly accessible (open access)
- Accreditation approved at 4 of 5 Universities
- Program start scheduled for: October 2026

Title
Fundamentals of transport.
Traffic engineering.
Transport research and analysis
Planning the development of the sustainable transport systems
Methods of analysing and forecasting transport demand
Road Safety Audit
Road Safety Inspection
Pedestrian safety management.
Supply Management and logistics.
Distribution and material movement.
Road construction
Road maintenance and management

Thank you

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