1. Traffic safety—problem scope

Introduction

Traffic safety is a critical public health issue, particularly in Africa. According to the World Health Organization, 1.19 million people die in traffic each year worldwide. Although Africa accounts for only 15 per cent of the world's population and just 2 per cent of registered motor vehicles, it is responsible for approximately 24 per cent of global road-traffic deaths. Estimated traffic fatality rate in Africa (19.6 deaths per 100 000 population) is more than double of the European rate (9.3 per 100 000), and ten times higher than in the best-performing countries (e.g. 1.6 in Norway, 2.0 in Sweden).

Unlike the global trend of declining traffic deaths, fatalities in Africa increased by 17% between 2010 and 2021. Given significant underreporting, the true figures are likely higher still. Road traffic crashes are the leading cause of death among people aged 5 to 29 years globally, and this burden falls disproportionately on African countries. The economic and social consequences are severe: medical costs, lost productivity, and lasting economic damage to households and communities are estimated to cost African countries 3 to 5 per cent GDP annually. Tackling road safety in Africa requires coordinated action across policy reform, infrastructure improvement, public awareness, and enforcement of traffic regulations. This module examines these challenges and explores evidence-based interventions, including the Safe System approach.

Learning outcomes

After completing this module, the students should be able to:

- recall the key components of the Safe System approach, its role in road safety management, and the historical development of road safety challenges in Africa compared to Europe
- explain the key factors contributing to road traffic crashes in African countries, including high fatality rates, vulnerable road users, infrastructure limitations, and weak law enforcement
- use publicly available data to assess the scale of road traffic injuries relative to other public health challenges in the region
- analyse the scope of the road safety problem in Africa, compare it with other LMICs and with Europe, and identify the most at-risk road user groups
- evaluate the economic consequences of road traffic crashes in African countries.

Key messages to learners

- Africa has the highest road traffic fatality rate in the world, with low- and middle-income countries (LMICs) disproportionately affected.
- Pedestrians, cyclists, and motorcyclists are the most vulnerable road users, together accounting for over half of all road traffic fatalities on the continent. This is driven by inadequate infrastructure, mixed traffic conditions, and a lack of safe crossing facilities.
- Poor road quality, lack of sidewalks, inadequate lighting, and weak enforcement of traffic regulations exacerbate the problem. Inadequate speed limits and their enforcement are major

contributors to traffic fatalities, since research shows that a 1 km/h increase in mean vehicle speed leads to a 3% increase in injury crashes and a 4%–5% increase in fatal crashes.

- The economic burden of road traffic crashes is significant, costing African countries estimated 3%–5% of GDP annually. This burden falls disproportionately on economically active individuals (people of working age), compounding the impact on household incomes and national productivity.
- Limited emergency response systems increase fatality rates by delaying critical medical care. In many African countries, there is no universal emergency telephone number, and ambulance response time frequently exceed the recommended 'golden' one hour.
- The rapid growth in vehicle numbers, often consisting of older and unsafe models imported as second-hand stock from high-income countries, worsens road safety conditions. Many of these vehicles lack basic safety features such as airbags, anti-lock braking systems, and electronic stability control.
- Corruption and lack of trust in authorities hinder the effective implementation of road safety measures. In many countries, traffic fines are negotiated informally with officers on the spot, undermining deterrence and eroding public confidence in enforcement.
- Weak urban planning and insufficient public transport systems contribute to higher crash rates. Rapid urbanisation often outpaces infrastructure development, forcing pedestrians and cyclists to share high-speed roads with motorised vehicles without any form of separation.
- Inadequate driver training and a weak safety culture further aggravate road traffic risks. In several African countries, driving licences can be obtained with minimal practical testing, and there is limited awareness of basic road safety rules among all road user groups.
- The Safe System approach shifts responsibility from individual road users to system designers, aiming to prevent fatal and serious outcomes even when people make mistakes. It is built on five pillars: safe road users, safe vehicles, safe speeds, safe roads, and effective post-crash care.
- Investing in road safety research and education is essential to developing sustainable solutions in LMICs. Currently, fewer than 35% of low- and middle-income countries have adequate policies in place to protect vulnerable road users, underscoring the need for locally grounded, evidence-based capacity building.
- Substantial evidence exists on effective road safety interventions; learners are encouraged to consult the recommended references for further detail.

Learning activities

Exercise 1

Identify and analyse the key factors contributing to road traffic crashes in African cities. Consider the roles of infrastructure quality, vehicle conditions, driver behaviour, enforcement capacity, and the mix of motorised and non-motorised road users. Use data from the WHO Global Status Report on Road Safety or your national road safety authority to support your analysis.

Exercise 2

Using the WHO Global Status Report (key figures by country), compare road safety statistics between your country and a European country, discussing key differences. Use indicators such as fatalities per 100 000 population, the share of vulnerable road user deaths, seatbelt and helmet usage rates, and the presence of national speed and drink-driving laws. Identify at least two structural factors that help explain the differences.

Exercise 3

Compare current traffic safety practice in your country with the principles of the Safe System approach. Highlight the most obvious gaps, using concrete examples. Structure your analysis around the five Safe System pillars (safe road users, safe vehicles, safe speeds, safe roads, and post-crash care) and assess which pillar represents the largest gap in your national context.

Exercise 4

Propose policy recommendations to improve road safety in your country, incorporating the Safe System approach. For each recommendation, specify the target pillar, the responsible authority, an estimated timeline for implementation, and how effectiveness could be monitored. Consider both quick wins (e.g. speed enforcement in urban corridors) and longer-term structural reforms (e.g. road design standards for new infrastructure).

Assessment quiz

The assessment quiz can be used as part of the examination or as an additional learning activity.

Question 1

Which group of road users is most at risk in African road traffic crashes?

a. Pedestrians (correct)
b. Car drivers (incorrect)

Comment (shown after the answer has been given): Pedestrians are the most at-risk group in African road traffic, accounting for approximately 31% of all fatalities on the continent. In some countries, such as Kenya and South Africa, pedestrian deaths exceed 40% of the total. This is largely due to a lack of sidewalks, safe crossing facilities, and street lighting, combined with high-speed mixed traffic on roads not designed for pedestrian use.

Question 2

Which of the following is NOT a key contributing factor to high road traffic fatality rates in Africa?

a. Inadequate infrastructure for pedestrians and cyclists (incorrect)
b. Weak enforcement of traffic regulations (incorrect)
c. High vehicle ownership rates and congestion in all major cities (correct)
d. Limited access to emergency medical response after crashes (incorrect)

Comment (shown after the answer has been given): Africa generally has low vehicle ownership rates compared to high-income countries, and congestion is not uniformly present across all urban areas. Moreover, congestion leads to lower speeds, which is in a way beneficial for safety. The other options reflect well-documented risk factors—poor infrastructure, weak enforcement, and delayed emergency care.

Question 3

Which of the following infrastructure deficiencies most directly contribute to high road traffic fatality rates in Africa?

a. Too few highways (incorrect)
b. Lack of sidewalks, street lighting, and safe crossing points for pedestrians (correct)
c. Lack of pelican crossings for pedestrians (incorrect)
d. Frequent use of multi-lane roundabouts in newly developed business districts (incorrect)

Comment (shown after the answer has been given): While modern traffic systems and roundabout design may pose operational challenges, the most critical and widespread problem in many African cities is the absence of basic infrastructure for pedestrians and other vulnerable road users. Pelican crossings exist in some locations, but evidence shows that pedestrians rarely use them.

Question 4

Which of the following best explains how road accidents impact the economic development of African countries?

a. They generate employment in emergency services and vehicle repair, boosting local economies (incorrect)
b. They contribute to medical costs, productivity losses, and long-term economic strain on households and governments (correct)
c. They increase the use of informal transport systems, strengthening traditional mobility networks (incorrect)

Comment (shown after the answer has been given): Road traffic injuries and fatalities impose a substantial economic burden on African countries through healthcare costs, lost income and productivity, and long-term care needs. These costs disproportionately affect younger, economically active populations and can amount to 3%–5% of GDP in some countries.

Recommended reading and resources for students

- Boateng, F. G. (2021). Why Africa cannot prosecute (or even educate) its way out of road accidents: insights from Ghana. *Humanities and Social Sciences Communications*, 8. https://doi.org/10.1057/s41599-020-00695-5
- SSATP. (2025). *Africa status report on road safety 2025*. https://sdglocalaction.org/wp-content/uploads/2025/04/Africa-Status-Report-on-Road-Safety-2025.pdf
- Wegman, F., Aarts, L., & van der Knaap, P. (2023). Sustainable Safety: A short history of a Safe System approach in the Netherlands. In K. Edvardsson Björnberg, S. O. Hansson, M.-Å. Belin, & C. Tingvall (Eds.), The Vision Zero handbook: theory, technology and management for a zero casualty policy. Springer. https://doi.org/10.1007/978-3-030-76505-7_12
- WHO. (2023). *Global status report on road safety*. https://iris.who.int/bitstream/handle/10665/375016/9789240086517-eng.pdf
- WHO. (2023). *Status report on road safety in the WHO African region*. https://iris.who.int/bitstream/handle/10665/378194/9789290314363-eng.pdf

Recommended (additional) reading for teacher

- Haghani, M., Behnood, A., Dixit, V., & Oviedo-Trespalacios, O. (2022). Road safety research in the context of low- and middle-income countries: Macro-scale literature analyses, trends, knowledge gaps and challenges. *Safety Science*, 146, 105513. https://doi.org/10.1016/j.ssci.2021.105513
- Kopits, E., & Cropper, M. (2003). *Traffic fatalities and economic growth* (Policy Research Working Paper No. 3035). https://doi.org/10.1596/1813-9450-3035
- Odonkor, S. T., Mitsotsou-Makanga, H., & Dei, E. N. (2020). Road safety challenges in Sub-Saharan Africa: the case of Ghana. *Journal of Advanced Transportation*, 7047189. https://doi.org/10.1155/2020/7047189
- PIARC. (2023). Road safety in LMICs: Identification and analysis of specific issues (2023R07EN). World Road Association Technical Committee 3.1 Road Safety.

https://roadsafetyforall.org/wp-content/uploads/2023/11/PIARC-Road-Safety-in-LMICs-Identification-and-Analysis-of-Specific-Issues-A-PIARC-Literature-Review_final.pdf

Prepared by expert

If you have specific questions, need a discussion partner, or would like feedback on your lecture materials, you may contact the author(s) of this module. Please include 'AfroSAFE curriculum' in the email subject line.

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