
AFCAP

Safety for motorcycle taxis – AFCAP Research in Tanzania

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1. Introduction
2. Road safety awareness
3. Rural roads improvements
4. Surface types piloted
5. Motorcycle crashes on rural roads
6. Preliminary findings
7. Preliminary recommendations

Non-Governmental Organization (NGO) focused on Road Safety from a Public Health Perspective

Founded in 2005 in the United States

Working in Tanzania since 2009

Mission:

- *Amend works to reduce the incidence of road traffic injury among the most vulnerable road users while helping create an environment for long-term, sustainable injury reduction*

Annually, almost 1.3 million killed and 50 million injured on roads

Globally, number of private motor vehicles forecast to triple by 2050. Two-thirds of this growth will take place in low and middle income countries

In Tanzania

- 2008 – 2012: 500,000 new motorcycles registered
- Motorcycle deaths: 2008 – 309, 2012 – 930
- Motorcycles make up 90% of motorised vehicles on rural roads
- Injury rates (per year): General population – 5.5%, Boda-boda drivers – 63.3%

Improving safety among the communities

- 200+ drivers received training and driving licenses
- Road safety education to primary schools
- See and Be seen reflective bags
- Reflective jackets, glasses and helmets to trained drivers
- Sensitizing other road users in the community



Tanzania Development Vision 2025

- Rural roads essential for rural development

African Community Access Programme (AFCAP)

- Research into low-cost solutions to provide rural access
- Access to markets, schools, health facilities, etc.
- Piloting surface types on rural roads
- Environmentally Optimised Design and Spot Improvements

Surface Types Piloted

Paved surfaces

Otta seals

Sand seals

Double surface dressing

Concrete surfaces

Parallel concrete strip

Concrete geocells

Block surfaces

Hand-packed stones

Paving bricks

Engineered and non-engineered natural earth surfaces



Improved roads → Increased traffic and higher speeds

Are crashes caused by behavior, road design and road condition, other factors, or a combination?

Research involved:

- Visiting crash sites with drivers
- Road surface and cross-sections assessments
- Driver behavior assessments
- Motorcycle drivers interviews, passengers and other road users
- Speed surveys

Actions of motorcycle drivers and other road users contribute to crashes

- Significant association between crashing and:
 - Under 26 years old, unmarried and without children
 - Not owning motorcycle
 - Using mobile phone and racing

Road design and road condition contribute to crashes

- Parallel strips: Reinforce 'might is right'; Dangerous edges
- Sealed surfaces: Can be slippery; Can encourage high speeds
- Stone blocks: Can cause loss of control; Crash can lead to serious injury

Photos - Data Collection



Photos - Driver behaviors



Photos – Road design and condition



Photos – Road design and condition



Photos – Speed bumps



Road Design and Condition:

- Planners and engineers should consider motorcycles in road design, construction and maintenance
- 'Design event' should be a 4-wheel vehicle passing a motorcycle, width of 4.5m
- Condition of shoulders is important to motorcyclists – these should be strong, flat, and free of loose stones and vegetation

Driver Behaviour:

- Improve system of training, testing and licensing
 - Drive defensively
 - Avoid distractions
 - Judge appropriate speed
- Understanding the behavioral motivations

Thank you