Enhancing understanding on safe motorcycle and three-wheeler use for rural transport

Draft Country Discussion Paper: Tanzania

Transaid, Amend and TRL

RAF2114A

July 2018

Preferred citation: Bishop, T. Barber, C. Mwaipopo, H. 2018. Enhancing understanding on safe motorcycle and three-wheeler use for rural transport, Draft Country Discussion Paper: Tanzania, RAF2114A. London: ReCAP for DFID.

For further information, please contact: Tom Bishop, Amend, tbishop@amend.org

ReCAP Project Management Unit
Cardno Emerging Market (UK) Ltd
Level 5, Clarendon Business Centre
42 Upper Berkeley Street, Marylebone
London W1H 5PW United Kingdom

Cover photo: Hans Mwaipopo / Transaid / Amend

Quality assurance and review table

Version	Author(s)	Reviewer(s)	Date
1	Tom Bishop, Caroline Barber, Hans Mwaipopo		30th July 2018
		Annabel Bradbury	7th August 2018
		Subhamay Gangopadhyay	18th August 2018
2	Tom Bishop, Caroline Barber, Hans Mwaipopo		27th August 2018
		Annabel Bradbury	4th Sept 2018

ReCAP Database Details: Enhancing Understanding on Safe Motorcycle and Three-Wheeler Use for Rural Transport

Reference No:	RAF2114A	Location	Ghana, Kenya, Tanzania and Uganda
Source of Proposal	ReCAP Project Management Unit	Procurement Method	Open tender
Theme	Transport Services	Sub-Theme	Motorcycles and three-wheelers
Lead Implementation Organisation	Transaid	Partner Organisations	Amend and TRL
Total Approved Budget	GBP 333,270	Total Used Budget	GBP 110,525.26[1]
Start Date	18th September 2017	End Date	31st January 2019
Report Due Date	30th July 2018	Date Received	30th July 2018

[1]This is the amount currently invoiced, the total survey expenditure for the four countries is still being processed.

Contents

Abstract

The initial findings of the Tanzanian component of this four-country study have revealed just how important motorcycle taxis are to people living in rural areas of Tanzania. For example, the Tanzania survey found that 85% of riders had transported a passenger to a health facility in an emergency, and 78% of riders believed that they have saved someone's life by providing transport in an emergency. Sixty-eight percent of passengers surveyed had used a motorcycle taxi to access health facilities. Motorcycle taxis are popular among rural people – they create employment and can access places that four-wheeled vehicles cannot.

However, there are also very real safety concerns. While riders and passengers face the risk of crashes and personal security threats, this does not stop people from using motorcycle taxis – either as a means of earning money, or as a mode of transport. The alternative modes of transport available in rural areas – often only walking and cycling – cannot compare in terms of benefits.

The results of the survey can be used by policy makers and the government to better understand the issues in rural areas and identify areas for targeted intervention.

A number of initiatives that involve motorcycles and three-wheelers have been undertaken or are underway in Tanzania and this discussion paper explores these. Better cooperation between the various stakeholders is required to improve the safety of motorcycle taxis. If this can be achieved, initiatives such as a motorcycle rider training curriculum, an 'Operating Manual' for motorcycle taxi associations, a van to take licensing services to rural areas, and more, will have greater chances of success.

Key words

Motorcycles, Motorcycle taxis, Three-Wheelers, Rural Transport, Rural Access, Safety, Training, Technology, Legislation, Tanzania

Research for Community Access Partnership (ReCAP)

Safe and sustainable transport for rural communities

ReCAP is a research programme, funded by UK Aid, with the aim of promoting safe and sustainable transport for rural communities in Africa and Asia. ReCAP comprises the Africa Community Access Partnership (AfCAP) and the Asia Community Access Partnership (AsCAP). These partnerships support knowledge sharing between participating countries in order to enhance the uptake of low cost, proven solutions for rural access that maximise the use of local resources. The ReCAP programme is managed by Cardno Emerging Markets (UK) Ltd.

www.research4cap.org

Acronyms, Units and Currencies

AfCAP	Africa Community Access Partnership
AsCAP	Asia Community Access Partnership
GBP	Great British pounds sterling (GBP 1 ≈ TZS 2,940)
NGO	Non-governmental organisation
NIT	National Institute of Transport (Tanzania)
ReCAP	Research for Community Access Partnership
RTA	Road Traffic Act, 1973 (Tanzania)
SUMATRA	Surface and Marine Transport Regulatory Authority (Tanzania)
TARURA	Tanzania Rural and Urban Roads Agency
TRL	Transport Research Laboratory Limited
TZS	Tanzanian Shilling (TZS 1 ≈ GBP 0.00034)
UK	United Kingdom (of Great Britain and Northern Ireland)
UKAid	United Kingdom Aid (Department for International Development, UK)
VETA	Vocational Education and Training Authority (Tanzania)

Executive summary

The project 'Enhancing understanding on safe motorcycle and three-wheeler use for rural transport and the implications for appropriate training and regulatory frameworks' is being carried out in Ghana, Kenya, Tanzania and Uganda. The research is being undertaken by a consortium led by Transaid and including Amend and TRL Limited and is funded by the UK's Department for International Development (DfID) as part of the Research for Community Access Partnership (ReCAP).

The use of motorcycles has increased greatly in Africa in recent years. Motorcycles are often used as taxis, with riders charging a fare to carry passengers or goods. In rural areas, motorcycle taxis play a crucial role in connecting people to services and farmers to markets, and in many countries motorcycles are the most commonly found vehicle on rural roads. In some countries, including Ghana, the use of motorcycles to carry fare-paying passengers is banned, although these bans are not always enforced, especially in rural areas. Motorised three-wheelers are also used in some rural areas, although their numbers are far fewer.

The overall aim of this project is to improve knowledge and understanding concerning effective ways of enabling rural people to benefit from the safe use of motorcycles and three-wheelers, with an emphasis on rural motorcycle taxis, rider training, appropriate regulatory frameworks and realistic enforcement methods.

The various investigations and data collection activities of the project's Research Phase were completed between January and July 2018, and the project team is currently compiling the findings, analysing the data and preparing for the Uptake and Embedment Phase, which begins with a four-day Team Workshop in Ghana in early September. This Draft Country Discussion Paper for Ghana has been produced shortly after completion of the project's Research Phase.

In Tanzania, the Research Phase has involved the following tasks:

- A survey of the benefits and disbenefits of motorcycle and three-wheeler taxis
- A review of motorcycle and three-wheeler-related legislation
- A review of motorcycle and three-wheeler rider training
- Development of an 'Operations Manual' for motorcycle taxi associations
- Investigations into the opportunities for using technology to improve motorcycle and three-wheeler taxi services
- Investigations into the uptake of a motorcycle and three-wheeler rider training curriculum
- Investigations into the opportunities for a mobile business licensing service for motorcycle and three-wheeler taxis in rural areas

This Draft Discussion Paper for Tanzania reveals the critical importance of motorcycle taxis for people living in rural areas of the country. It presents initial data on injuries and crimes suffered by riders and passengers. It summarises progress on a number of initiatives aimed at improving rider training. It also highlights a number of areas for discussion between the project team and government stakeholders as the project enters the Uptake and Embedment Phase.

1 Introduction

This research project is being undertaken by a consortium, which is led by Transaid and includes Amend and TRL Limited and is funded by the UK's Department for International Development (DfID) as part of the Research for Community Access Partnership (ReCAP).The project covers four countries: Ghana, Kenya, Tanzania and Uganda.

This Draft Discussion Paper for Tanzania has been produced shortly after completion of the project's research phase. In Tanzania, the research phase has involved the following tasks:

- A survey of the benefits and disbenefits of motorcycle and three-wheeler taxis
- A review of motorcycle and three-wheeler-related legislation
- A review of motorcycle and three-wheeler rider[2] training
- Development of an 'Operations Manual' for motorcycle taxi associations
- Investigations into the opportunities for using technology to improve motorcycle and three-wheeler taxi services
- Investigations into the uptake of a motorcycle and three-wheeler rider training curriculum
- Investigations into the opportunities for a mobile business licensing service for motorcycle and three-wheeler taxis in rural areas

Each of these tasks, together with the findings, are summarised in this Draft Discussion Paper, followed by a section on Discussion and Recommendations.

The purpose of this Draft Discussion Paper is to enable the team members and other stakeholders to digest the key initial findings of the Tanzanian component of the research. Most importantly, the paper will be shared with the Tanzanian government stakeholders who will attend the four-day Team Workshop. This workshop is scheduled to take place in Ghana during the week of 3rd September 2018. The Tanzanian government attendees are expected to be Assistant Superintendent of Police, Deus Sokoni, and Director of Road Transport Regulation at the Surface and Marine Transport Regulatory Authority (SUMATRA), Johansen Kahatano. These two key stakeholders will join government stakeholders from each of the other three project countries, together with the project team, to discuss the findings and their implications for policy and practice.

Following the four-day Team Workshop in Ghana, this Discussion Paper will be presented to a wider group of Tanzanian stakeholders.

2 The benefits and disbenefits of motorcycle and three-wheeler taxis

2.1 Background

A full understanding of the benefits and disbenefits of motorcycles and three-wheelers in rural areas is required to help decision-makers develop appropriate and effective policies and legislation that can realistically be implemented and enforced.

A survey has been undertaken across all four countries to obtain information on the benefits and disbenefits. The survey comprised questionnaires for five different user groups:

- Riders of motorcycle and three-wheeler taxis
- Passengers of motorcycle and three-wheeler taxis
- Owners of motorcycle and three-wheeler taxis
- Owners of freight, who use motorcycle and three-wheeler taxis to transport their goods

[2] Throughout this discussion paper, the term 'Rider' is used to mean the driver or operator of a motorcycle or three-wheeler. The term Rider does not include passengers.

- Non-users; people who very rarely or never use motorcycle and three-wheeler taxis

Topics covered in the questionnaires were:

- Overall opinions
- Economics and finance
- Access and mobility
- Injuries and health issues
- Crime and personal security
- Access to services and protective equipment

The survey was carried out in eight different settlements across Tanzania, with two settlements in each of four different districts, and with those districts being located in two different agro-ecological zones. Each of the settlements was defined as either 'Less remote' if it was less than 10 km from a town or 'More remote' if it was more than 10 km from a town.

Table 1 outlines the eight settlements.

Table 1 Survey Settlements

Agro-Ecological Zone	Region	District	Settlement	Less remote or More remote?
Southern Highlands	Mbeya	Kyela	Lugombo	More remote
Southern Highlands	Mbeya	Kyela	Tenende Juu	Less remote
Southern Highlands	Mbeya	Rungwe	Kandete	More remote
Southern Highlands	Mbeya	Rungwe	Ntuso	Less remote
Coastal	Pwani	Bagamoyo	Kimarang'ombe	Less remote
Coastal	Pwani	Bagamoyo	Ludiga	More remote
Coastal	Pwani	Kisarawe	Kifuru	More remote
Coastal	Pwani	Kisarawe	Vigama	Less remote

Figure 1 Maps of Tanzania, showing survey locations

Source: Google Maps

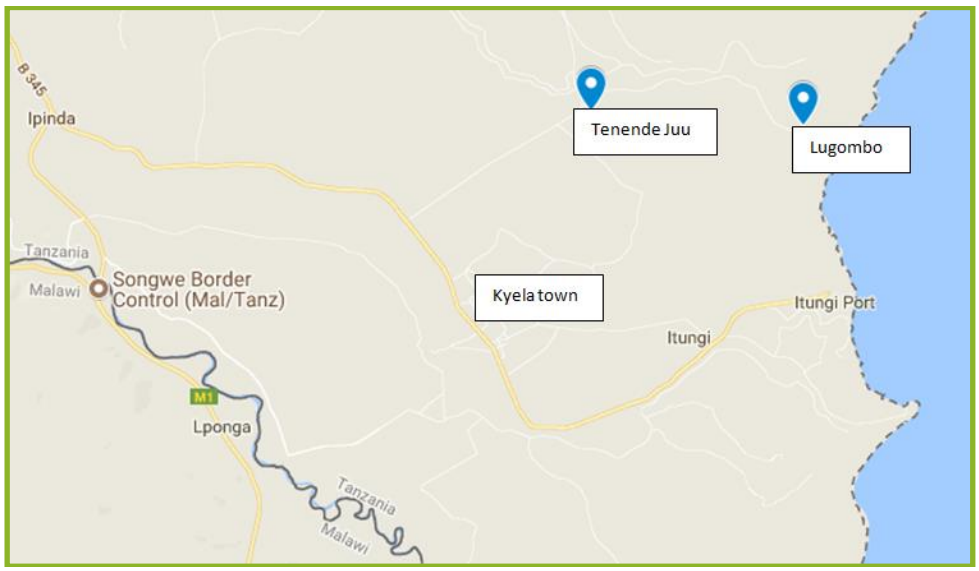
Information about the settlements was obtained through interviews with local leaders, discussions with local people and general observation by the project team. This information should be considered as a snapshot of what was found during the short visit to each settlement, rather than a comprehensive profile.

Table 2 Settlements in Kyela District, Mbeya Region

	Lugombo Village	Tenende Juu Village
Location and access	• 9 33 13.2S 33 56 27.2E • 130 km from Mbeya city • 14 km from district centre (Kyela town) • 10 km from nearest sealed road	• 9 33 01.7S 33 53 27.8E • 123 km from Mbeya city • 9 km from district centre (Kyela town) • 5 km from nearest sealed road

	• More remote	• Less remote
Transport options	• Motorcycles are predominant mode of transport • Inaccessible to vehicles (including motorcycles) during rainy season	• Motorcycles are the predominant mode of transport. Bicycles also very common. • Accessible year round by a good gravel road.
Population	• 5,200 people approx. • Majority are young people • Nyakyusa ethnic group	• 700 people approx. • Smallest of the nearby villages • Mainly Nyakyusa ethnic group, also a few others
Economy	• Agriculture dependent: Cocoa, rice and palm trees	• Agriculture dependent: Cocoa and rice • Many young men employed as motorcycle taxi riders
Recent development	• Combination of motorcycle taxis and mobile phones has improved quality of life	• The introduction of motorcycle taxis has generated employment
Local issues	• Cut-off during rainy season • Lack of irrigation system hinders agriculture	• Pressure on land due to proximity to Kyela town • Falling price of cocoa is harming agriculture

Figure 2 Map of Lugombo and Tenende Juu



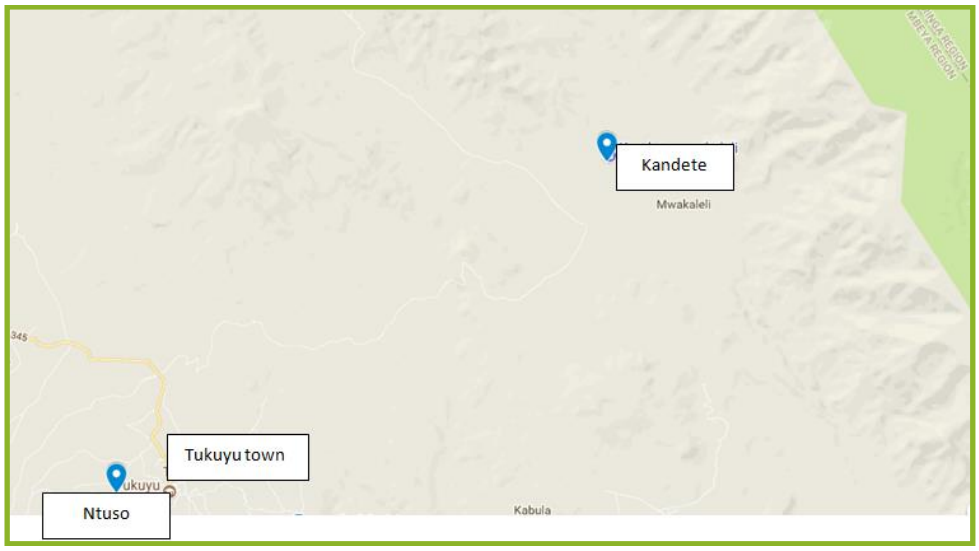
Source: Google Maps

Table 3 Settlements in Rungwe District, Mbeya Region

	Kandete Village	Ntuso Village
Location and access	• 9 08 59.4S 33 47.5E • 60 km from Mbeya city • 28 km from district centre (Tukuyu town) • 20 km from nearest sealed road • More remote	• 9 15 39.7S 33 37 29.9E • 69 km from Mbeya city • 4.5 km from district centre (Tukuyu town) • 3 km from nearest sealed road • Less remote
Transport options	• Shared taxis go to Tukuyu town several times per day • Motorcycle taxis are widely available • Accessible year round	• Shared taxis go to Tukuyu town several times per day • Motorcycle taxis are widely available • Accessible year round, but travel is difficult during rainy season
Population	• 12,000 people approx. • Most highly-populated and wealthiest of nearby villages • Many young people • Nyakyusa ethnic group	• 24,000 people approx. • Highly-populated due to proximity to Tukuyu town • Wealthy

		• Nyakyusa ethnic group make up around 60% of population. Remainder are mixed
Economy	• Agriculture dependent: Tea, potatoes, maize. Also milk • Local commercial activities – shops and small businesses	• Agriculture: Bananas and coffee • Proximity to Tukuyu town enables strong trade
Recent development	• Most houses now have electricity and piped water • Modern health centre	• Increase in production of cash crops due to easy access to market at Tukuyu town
Local issues	• Water shortages during dry season • Speeding motorcycles pose risks to pedestrians, especially children	• Pressure on land due to proximity to Kyela town • Speeding motorcycles pose risks to pedestrians

Figure 3 Map of Kandete and Ntuso



Source: Google Maps

Table 4 Settlements in Bagamoyo District, Pwani Region

	Kimarang'ombe Village	Ludiga Village
Location and access	• 6 26 52.4S 38 52 2.9E • 64 km from Dar es Salaam city • 4.5 km from district centre (Bagamoyo town) • 1.5 km from nearest sealed road • Less remote	• 6 26 55.3S 38 29 57.1E • 116 km from Dar es Salaam city • 15 km from district centre (Bagamoyo town) • 7 km from nearest sealed road • More remote
Transport options	• Motorcycles are predominant mode of transport • Accessible year round, but travel is difficult during rainy season	• Motorcycles are predominant mode of transport • Accessible year round, but travel is difficult during rainy season
Population	• 5,200 people approx. • Many young people • Mix of different ethnic groups	• 12,000 people approx. • Poor compared to Kimarang'ombe • Mostly indigenous Zaramo and Kwele ethnic groups
Economy	• Agriculture dependent: Cassava, rice and pineapple • Some local businesspeople and government officials	• Agriculture: Cassava and pineapple • Many young people engaged in selling land to people from other regions
Recent development	• Mains electricity supply currently under construction	• Mobile phones have made it easier to communicate with 'outsiders' wanting to buy land

	• Police post and dispensary currently under construction	
Local issues	• No irrigation system, so dependent on (unreliable) rains • Few services, as most services are in Bagamoyo town	• Nearest market and nearest secondary school are far away, in Bagamoyo town • No mains electricity supply, and few people own solar panels • Dependent on firewood and charcoal

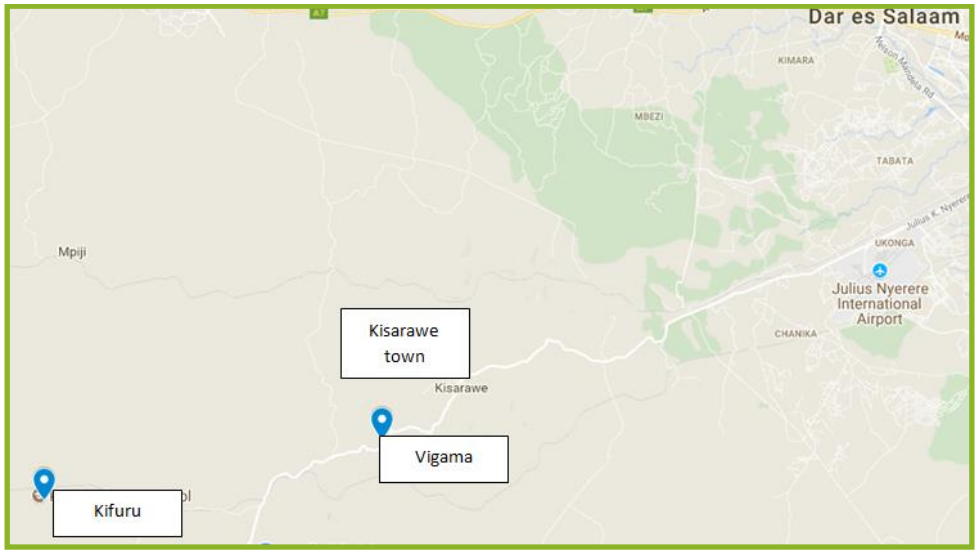
Figure 4 Map of Kimarang'ombe and Ludiga

Source: Google Maps

Table 5 Settlements in Kisarawe District, Pwani Region

	Kifuru Village	Vigama Village
Location and access	• 6 56 42.1S 38 56 26.7E • 49 km from Dar es Salaam city • 16 km from district centre (Kisarawe town) • 6 km from nearest sealed road • More remote	• 6 55 33.5S 39 02 53.1E • 36 km from Dar es Salaam city • 5 km from district centre (Kisarawe town) • 1 km from nearest sealed road • Less remote
Transport options	• Motorcycles are predominant mode of transport • Inaccessible during rainy season	• Motorcycles are predominant mode of transport • Accessible year round, but travel is difficult during rainy season
Population	• 2,500 people approx. • Many young people • Mix of many different ethnic groups • Poor	• 3,000 people approx. • Many young people • Mix of many different ethnic groups • Poor
Economy	• Village was created alongside TAZARA railway line, but the station is now abandoned • Agriculture: Cassava, oranges and pineapples • Petty business, charcoal production, motorcycle taxi riding	• Agriculture: Cassava, oranges and pineapples. • Livestock: Chicken and cattle • Petty business, charcoal production, motorcycle taxi riding
Recent development	• Used to be very poor, dependent on government support • Now people are slightly better able to support themselves	• Primary school has been improved
Local issues	• No mains electricity • Secondary school is almost 20 km from village	• Nearest dispensary and nearest primary school are over 5 km from village

Figure 5 Map of Kifuru and Vigama



Source: Google Maps

2.2 Findings

2.2.1 General findings

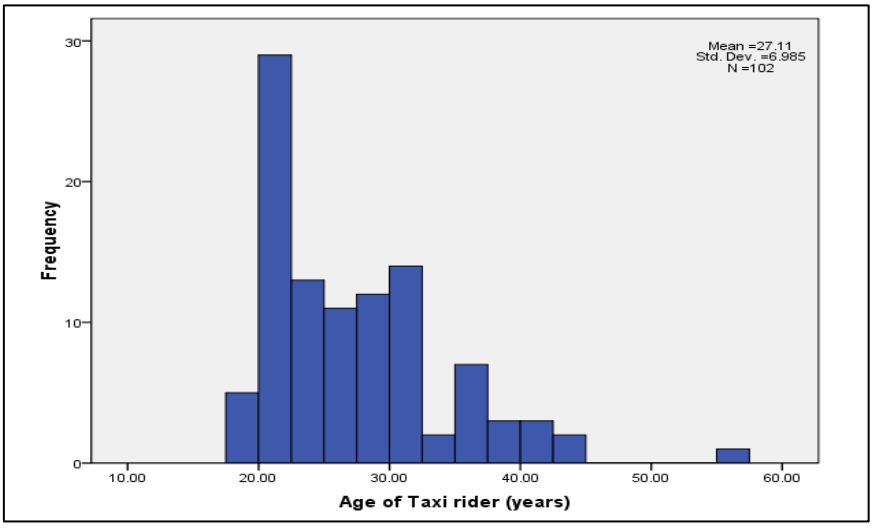
A total of 282 questionnaires were completed across the eight different settlements. These were:

- 103 motorcycle taxi riders (and no three-wheeler riders, as such vehicles were not found in any of the settlements)
- 118 motorcycle taxi passengers
- 28 owners of motorcycle taxis
- 29 owners of freight
- 4 non-users

It was notable that the survey team were able to locate very few people who fell into the 'non-user' category. This is important as a finding in itself as it potentially shows the degree to which rural communities are reliant on motorcycle taxis to fulfil their daily transport needs, and how commonplace motorcycle taxis have become in rural Tanzania.

Figure 6 shows the age profile of the taxi riders.

Figure 6 Age profile of motorcycle taxi riders interviewed



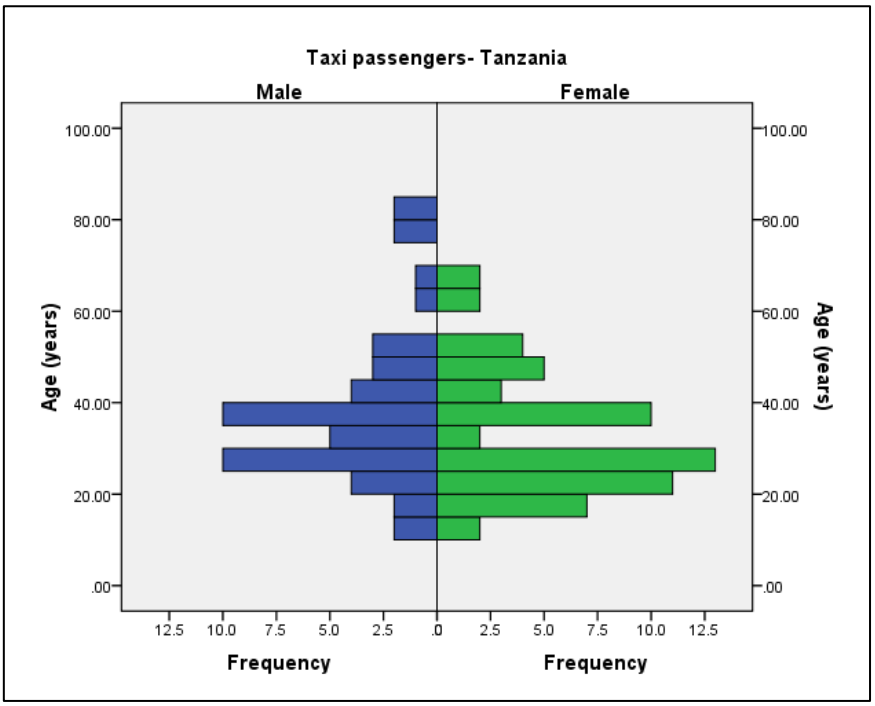
The chart shows that the vast majority of riders were between 20 and 30 years, with an average age of 27 years. Of the 103 riders interviewed, two were female.

Sixty-five percent of riders had completed no higher than primary school level education, suggesting that it is possible to enter this profession with relatively low levels of formal education.

Fifty-one percent of riders said that they owned their own vehicle, and 36% were riding the motorcycle as part of a commercial arrangement with the owner of a vehicle. Only 26% of riders said that they are members of a motorcycle taxi association – the lowest across the four countries. Seventy-nine percent of riders said that they own a mobile phone in working order.

Figure 7 shows the age and gender balance of passengers.

Figure 7 Age profile and gender of motorcycle taxi passengers interviewed



The chart shows that the majority of passengers were under 40 years old, with slightly more being female than male. One of the passengers interviewed was observed as having a form of disability.

Seventy-two percent of passengers said that they owned a mobile phone in working order, with 42% of phones having access to the internet.

2.2.2 Benefits of motorcycle taxis

The survey results show a number of benefits that motorcycle taxis bring to people living in rural Tanzania, and a number of different and important ways in which they are used.

Motorcycle taxis are used to generate income for both riders and owners in rural areas. The vast majority of riders (95%) reported that the 'best thing about motorcycle taxis' was earning money or generating employment.

The survey found that after paying all expenses related to operating the motorcycle taxi, the average rider's profit for the last seven days was around TZS 43,400 (GBP 14.75). Using the latest Gross National Income figures from the World Bank (data.worldbank.org/country/tanzania), average weekly income in Tanzania in 2017 was around GBP 13.44 – although it should be noted that this includes both rural and urban populations. At GBP 14.75 for riders, the survey found that their weekly profits were greater than the national average, at 110%.

The results of the survey show that motorcycle taxis are providing access to vital health services for rural communities. One of the most striking results is the fact that 85% of motorcycle riders reported they had

transported a passenger to a health facility in an emergency. Forty percent of these emergency trips were reported by riders to be for women during pregnancy and 9% of these were deemed to be due to complications during pregnancy. This is significant, as one of the leading causes of death for women with complications is post-partum haemorrhage where it is globally accepted that there is a two hour window to seek help before a woman will bleed to death. Other reasons for emergency trips cited by riders include malaria at 12% and other illnesses also at 12%.

While this is rider perception and has not been clinically verified, it is notable that 78% of riders said that they believe they have saved a life by providing transport in an emergency. Ninety-three percent of riders reported that they provide transport to health facilities in non-emergency situations. This seems to be confirmed by the interviews with passengers.

Forty-six percent of passengers said that either they or a member of their household had used a motorcycle taxi in a health-related emergency, with the majority of these related to malaria and other illness. Sixty-eight percent of passengers interviewed said they had used a motorcycle taxi for non-emergency access to a health facility.

In rural Tanzania, there are very limited ambulance services, especially between the home and the first level health centre. As such, there is a very high reliance on motorcycles for access to health care services and it is clear that motorcycles are addressing a considerable transport gap between communities and first level health facilities.

Passengers said that they value motorcycle taxis for being convenient and fast and providing access where other vehicles cannot go. The data also shows that in many areas, motorcycles are simply the only type of motorised transport available.

Motorcycle taxis are used for a variety of reasons, with the top four cited by passengers being:

- Travel to market/shops (41%)
- Travel to health services (24%)
- Travel to visit family/friends or social events (17%)
- Travel to work (10%)

This suggests motorcycle taxis are used for economic reasons, and for health reasons, and they also provide an important link to social engagements and community interaction.

Mobile phone (44%) is the most common way that passengers summon riders – this is more common than going to a motorcycle taxi stand (41%) or stopping a motorcycle at the roadside (12%). Ninety percent of passengers said it was either very easy or quite easy to access a motorcycle taxi. Passengers value riders who they know and trust and who ride safely.

The survey results show that motorcycle taxis are an important mode for transporting freight. Of those who use motorcycles for this purpose, 59% were male and 41% were female. They are used mainly by famers or business people who value the service for being convenient and fast. Among this group, 52% contacted a motorcycle taxi operator by mobile phone. The main items being transported by motorcycle taxi were for sale in a shop (52%), agricultural produce (24%) or items for personal use at home.

Eli Mgonja, (former Rector of the National Institute of Transport and government advisor on road safety and rural access policy), on advising the Tanzanian government on motorcycle taxis:

"At the beginning, I was very negative. I saw that accidents were rampant and I opposed the introduction of motorcycles as a means of public transport. While we were discussing it, we didn't understand their contribution in rural areas. If someone is stuck in a rural area they can't move. In the villages, motorcycle taxis are very useful - they are actually ambulances and had we banned them, we would have denied opportunities for people in rural areas"

2.2.3 Disbenefits of motorcycle taxis

As well as the many benefits of motorcycle taxis, the results of the survey also shed light on a number of disbenefits.

Seventy-five percent of riders and 81% of passengers said that 'the worst thing about motorcycle taxis' was the risk of the rider or passenger being a victim of a crash or injury. A further 11% of riders and 5% of passengers said that 'the worst thing' was the risk of being a victim of crime.

Forty-one percent of riders reported that they had suffered an injury that either resulted in them losing money, required medical attention or affected their family life, while riding a motorcycle in a rural area. Of these riders, 88% were undertaking part of a paid trip at the time of the incident, although only 31% were actually carrying a passenger. Of passengers interviewed, 13% reported that they had suffered an injury while riding a motorcycle or motorised three-wheeler in a rural area. Despite the road safety risks, it is notable that motorcycle taxis remain a very important form of rural transport.

Riders most commonly cited 'Roadway condition / damage / obstacle' (36%) as the cause of the incident that resulted in the injury. Other causes mentioned were 'Other road user action' (19%), 'Self error' (17%) and 'Vehicle failure' (12%). Passengers judged 'Rider error' to be the leading cause (53%).The most common type of incident was a 'Single vehicle crash / fall' (37%). This potentially suggests rider behaviour as being one of the root causes. Eighty-three percent of the injuries sustained by riders were cuts, scrapes, scratches, sprains, strains or bruises.

The survey identified both opportunities and challenges to improving road safety. The vast majority of riders described themselves as 'self-taught' or were taught by a friend of family member, and only 3% had received any type of formal training. The main reason cited for this (53%) was no training being available in the local area. Only 29% of riders had a driving licence, only 14% had a road service licence (which is required to operate a motorcycle as a taxi), and only 24% had insurance. Enforcement of such things in rural areas is reported to be weak. 63% of riders said that they had never been stopped by police officers.

However, 81% of riders reported that they always wear a helmet (this is the highest of all four study countries). 45% of passengers said that they always wear a helmet, with the main reason provided for not wearing a helmet being that riders do not provide them.

Crime and personal security was also explored during this survey. 10% of riders said that they have been a victim of crime. Of these, 50% had been a victim of a robbery that involved force, and 40% had been a victim of verbal abuse and threats. Riders said that 50% of the crimes were carried out by their passengers. 60% of crimes reported by riders happened at night, and 67% occurred at the drop-off point.

Meanwhile, only 3% of passengers said they had been a victim of crime, and all of these were related to verbal abuse – no passengers had been victim of other types of crime.

Twelve percent of riders said that they have suffered from health issues, such as respiratory problems, that they attribute to riding a motorcycle. This was the lowest of the four countries included in the study.

The four non-users interviewed said that they do not use motorcycle taxis as they are afraid of crashing (75%) or crime (25%). Instead of motorcycle taxis, they said they are dependent on walking and bicycles, reiterating the lack of other motorised transport options.

2.3 Summary of key findings

Key findings of the survey of benefits and disbenefits of motorcycle and three-wheeler taxis are:

- Motorcycle taxis were widely available in all survey locations
- No three-wheelers were found at any of the survey locations
- It was very difficult for the survey team to find non-users, underscoring the importance of motorcycle taxis
- Motorcycle taxis were found to be very important for providing access to health facilities
- Mobile phones play a key role in linking riders to passengers and freight owners
- The vast majority of riders learned to ride informally, either self-taught or taught by friends or family
- Incidents that caused injuries tended to be single vehicle crashes or falls that happened when the rider was alone, and were caused by rider error or a problem with the roadway
- Of the four countries, Tanzania had the lowest proportion of riders who were members of a motorcycle taxi association

3 Review of motorcycle- and three-wheeler-related legislation

3.1 Background

A review of Tanzanian legislation specifically applicable to motorcycles and three-wheelers was carried out. Through key stakeholder interviews at national and local level, and through observation, the implementation and enforcement of legislation was assessed.

3.2 Findings

Motorcycle- and three-wheeler-related legislation is found in the Road Traffic Act (RTA) of 1973 and its various amendments, and the Transport Licensing (Motor Cycle and Tricycles) Regulations, 2010 (commonly referred to as the SUMATRA Regulations). The RTA applies to all motorcycle and three-wheeler riders. The SUMATRA Regulations apply to motorcycles and three-wheelers that charge a fare to carry passengers or goods.

There are some apparent inconsistencies between the two sets of legislation, for example the SUMATRA Regulations require that both motorcycle riders and passengers must wear helmets, but the RTA only requires that motorcycle riders wear helmets. There is no clear legislation prohibiting the use of a mobile phone while riding a motorcycle.

The RTA and the SUMATRA Regulations are both applicable nationwide, but some additional regulations exist which apply to specific areas only. For example, in Dar es Salaam there are regulations that prohibit motorcycle and three-wheeler taxis from entering and operating within the Central Business District.

In general, it has been identified that implementation and enforcement of the RTA and SUMATRA Regulations related to motorcycles and three-wheelers is challenging to the relevant government authorities – the Traffic Police and SUMATRA, respectively. Specific challenges exist in rural areas, in particular around awareness and enforcement.

In rural areas, there is a lack of awareness among riders and passengers of much of the legislation that applies to motorcycles and three-wheelers, including penalties for non-compliance.

There is also a lack of understanding of the reasons behind legislation. For example, people living in rural communities may never have been educated about the benefits of wearing a helmet in the event of a crash. When helmets are worn it is often only because of a form of enforcement and not through an understanding of the benefits. The fact that there is some enforcement may be linked to riders reporting

quite high levels of helmet use and should be taken by SUMATRA and the Traffic Police as encouraging and possibly could help build a case for higher resourcing for enforcement activities.

That said, very few, if any, Traffic Police officers cover rural areas away from district centres or major highways. Where regular police officers are to be found in rural areas, they often do not possess specialist knowledge of traffic regulations. This can lead to a lack of enforcement of traffic laws in rural areas.

Other challenges to enforcing the law in rural areas include political influence and interference, resources and the safety of officers.

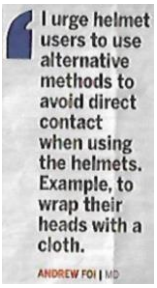
Where attempts are made to enforce a law, it is not uncommon for the accused rider to use a connection to a person of influence to avert the charge, and police officers are at risk of losing their jobs in extreme cases. It is common knowledge that people of influence, such as local politicians, are often owners of the motorcycles and three-wheelers.

Police officers struggle to apprehend riders committing offences. Riders often avoid police checkpoints or ignore an officer's signal to stop and speed away. In these circumstances there is very little the officer can do and very little likelihood that the rider and motorcycle will be identified and prosecuted. Officers do not have cameras or other equipment, and often rely themselves on motorcycle taxis for transport. Officers risk their personal safety enforcing the law, as reports of groups of riders collectively becoming violent in the face of enforcement are not uncommon.

Helmet use is an area in which strong enforcement efforts are being made by the Traffic Police. In Bagamoyo District in Pwani Region between the 1st and 20th May 2018, 168 riders were fined for not complying with the law requiring them to wear a helmet, with a further 21 awaiting a court judgement.

The Citizen newspaper: Motorcycle helmets and skin infections

On 13th August 2018, The Citizen newspaper published an article entitled 'Health risk on the two-wheeler'. The article cited a 2012 study from Lagos, Nigeria, which concluded that shared helmets could transmit infections from person to person and recommended regular cleaning with a sterilant.



Another law that officers at Traffic Police Headquarters say is currently being strictly enforced is the requirement to have insurance. However, at the district level, officers admit that about 90% of riders do not have the necessary insurance.

Some new regulations are planned to be introduced later in 2018. These include requirements for motorcycle taxi riders to be registered at ward level and to wear high visibility vests marked with their identification number. New regulations will also cover the carriage of goods (which has previously not been legislated for). The Director of Transport Regulation at SUMATRA is also keen to research opportunities for requiring specific Passenger Service Vehicle insurance for motorcycle and three-wheeler taxis.

4 Review of motorcycle and three-wheeler rider training

4.1 Background

With only two points of contact with the road surface and little or no protection for riders and passengers, motorcycles are a high-risk form of transport. Despite this, previous studies have found that the vast majority of motorcycle taxi riders have undertaken no formal training (Amend, 2015).

As part of this study, a review of motorcycle and three-wheeler taxi training in Tanzania has been carried out.

4.2 Findings

In Tanzania, a motorcycle rider is not legally required to have undertaken any formal motorcycle training. This project's survey of benefits and disbenefits found that only 3% of motorcycle taxi riders had undergone any formal training.

Motorcycle and three-wheeler rider training provision is limited in Tanzania, and is all but non-existent in rural areas. Driving schools are located where there are significant numbers of customers, hence their location in cities and large towns. Communities in rural Tanzania have little or no immediate access to training, other than occasionally through projects funded by donors such as an initiative by British Gas Group to train approximately 600 motorcycle taxi riders in Mtwara and Tanga regions.

The rider training that is available is disjointed and varies in quality. Training is often only theory-based, without a practical training component, and is limited in its scope and duration. It is often run for short periods (one or two hours) per day over a number of days (generally up to five). Many driving schools lack access to standardised training materials for the training of motorcycle and three-wheeler riders and therefore develop their own materials which vary significantly from school to school. In some cases it was found that schools adopt training materials that are used to train car drivers, so the focus is often not appropriate to motorcycle riders.

In 2015, in conjunction with SUMATRA and supported by ReCAP, Transaid developed a curriculum for training motorcycle and three-wheeler riders with a focus on motorcycle taxis. This curriculum was translated into Swahili by SUMATRA and passed to the Traffic Police for dissemination. However, dissemination of the curriculum has been weak and many schools remain unaware of the curriculum's existence (see the 'Uptake of a motorcycle training curriculum' section for further details on this).

The lack of suitable training materials hampers effective training, and the official motorcycle and three-wheeler riding tests do not sufficiently establish the competence of the rider.

With little or no access to formal training and testing, the training of rural riders often consists of what knowledge their friends and family can share with them, focusing on the basics of operating and manoeuvring the vehicle. Some simply teach themselves. Many rural riders have never taken a test and so operate without a licence.

5 An 'Operations Manual' for motorcycle taxi associations

5.1 Background

Motorcycle and three-wheeler taxi associations are seen by many as being beneficial. From the point of view of the Traffic Police and SUMATRA, associations have the potential to support compliance with legislation by setting standards that ensure members comply with the law and regulations, and enforcing them internally. For riders, associations provide a form of safety net, providing financial support in the case of personal problems. Associations also provide a collective voice to address issues with authorities.

Motorcycle and three-wheeler taxi associations are a relatively new development in Tanzania and while some are formally recognised and fully registered with the authorities, many are of an informal nature, especially in rural areas.

Through this project, a *boda boda* (motorcycle taxi) association 'Operations Manual' is being developed. The aim of this is to support riders to establish an association that is clearly defined in structure, transparent in its management, fulfils its obligation to promote legislative compliance and offers effective representation and benefits to its members.

5.2 Findings

Key topics for the operations manual to address were identified through discussions with riders, associations (both formal and informal) and other key stakeholders including the Traffic Police and SUMATRA. The topics identified for possible inclusion in the manual are as follows:

- Clarity over the benefits of membership
- Compliance with the law through self-regulation
- Management structure, governance and leadership
- Financial management
- Grievance procedures
- A 'charter' of members' commitments to be safe and professional
- Maintenance, including vehicle inspection and the sourcing of parts
- The importance of personal protective equipment (PPE)
- Optimisation of motorcycle operating costs
- The importance of customer care
- Rider training, including mentoring, safe riding, road signs and markings, traffic rules and regulations, the Highway Code, acquisition of driving licence
- Application for a Road Service Licence – including the procedure for applying, conditions, restrictions and prohibitions
- Insurance requirements by law
- Entrepreneurship
- Personal security both for riders and their passengers

All the above topics will be of great benefit to riders and having them clearly explained in the manual will help and guide them in setting up an effective association. At the time of writing this Tanzania discussion paper the operations manual is 80% complete.

6 Opportunities for using technology to improve motorcycle and three-wheeler taxi services

6.1 Background

In rural Africa, mobile phones play an important role in enabling mobility by connecting demand to supply: connecting people's need and desire to travel to the availability of motorcycle taxis. However, the relationship between mobile phones and motorcycles goes beyond just linking demand to supply, and is likely to become closer as new technologies are developed.

The use of smartphone applications ('apps') is already starting to influence the use of motorcycle taxis, for example enabling 'ride-hailing' with safety functions and competitive pricing. To date, the focus of these apps has been on urban populations, although potential may exist for their use in rural areas.

Other types of technology also have the potential to improve motorcycle and three-wheeler services. For example, in India recent efforts are aiming to ensure that Anti-Lock Braking Systems (ABS) are fitted to all motorcycles.

Investigations were carried out in Kenya, Tanzania and Uganda, and also in Rwanda, which is known within Africa to be a 'tech hub' and also to have a more organised motorcycle taxi industry than its East African neighbours. The aim of the investigations was to learn about the benefits of technology where it is used, and to identify potential opportunities for innovations to be adapted for rural areas or shared from one area or country to another. Information was gathered through an initial literature review followed by meetings with technology entrepreneurs and motorcycle and three-wheeler taxi riders.

6.2 Findings

6.2.1 Mobile phone technology

The mobile phone technology identified as being used in relation to motorcycle and three-wheeler taxis in Tanzania includes:

- Simple calls and text messages
- Mobile phone contact lists
- Messaging 'apps'
- Ride-hailing 'apps'
- Hotlines and reporting centres

Riders interviewed during the study explained that mobile phones are an integral part of operating a motorcycle or three-wheeler taxi. Riders have the numbers of their customers saved in their phones, and vice versa. As well as communicating with customers, riders use mobile phones to communicate between themselves, sharing advice and intelligence.

Despite the risks of using a mobile phone while driving any type of motorised vehicle on a public road, motorcycle riders are commonly seeing using mobile phones while riding. Some riders hold them in one hand, using the other hand to operate the motorcycle. Other riders use hands-free ear-sets, and others lodge the phone inside their helmet next to their ear.

The investigations identified one motorcycle taxi association in Dar es Salaam whose members had set up a single phone hotline through which passengers could summon a rider, and a separate hotline through which passengers could make complaints or suggestions or request other forms of customer service. Initially this improved customers' confidence of riders who were members of this association, and the number of passengers increased. However, as income increased, arguments began between the members to the point where the association broke down and each member returned to riding independently.

Many motorcycle taxi riders spoken to as part of this study explained that they preferred to use old-style mobile phones rather than smartphones, for several reasons including that old-style mobile phones are cheaper to buy, and also cheaper to replace if one is broken, less desirable to potential thieves, hardier and so less likely to break if dropped, and have a longer battery life. Small kiosks offering mobile phone charging services are common in areas with many motorcycle taxis, and some riders own portable solar-powered chargers.

Riders' preference for 'non-smart' phones limits the potential for penetration of smartphone apps, and limits the potential for riders' to benefit from opportunities provided by apps. However, as more and more customers are using smartphone messaging applications, pressure is on the riders to also have access to such apps. In Tanzania, WhatsApp is particularly popular.

Some motorcycle taxi associations in Dar es Salaam were found to use WhatsApp groups to share information of interest to the members, for example requesting other riders to assist in the case of theft of a member's motorcycle, or the location of Traffic Police officers, as many members do not have the required paperwork.

Numerous ride-hailing apps exist in Tanzania, including the global giants Uber and Taxify, the Kenyan company Mondo Ride and the local Tigo Twende. Their focus is on regular four-wheel car taxis, although they also offer motorcycle and three-wheeler taxi services. All of these are currently operating exclusively in urban areas. Challenges of operating in rural areas include insufficient customer density, low levels of ownership of smartphones and unstable internet connections.

The NGO Marie Stopes provides sexual and reproductive health and family planning services throughout Tanzania, including remote rural areas. It has a hotline that clients can call for advice on how to access services, which include outreach services provided by nurses using motorised three-wheelers. A smartphone app is used to help manage the outreach services. All Marie Stopes vehicles are fitted with a GPS tracking device to monitor movements.

Targeting high-risk populations through SMS messaging

The organisation North Star Alliance provides healthcare to high-risk mobile populations, including truck drivers. As part of its 'Star Driver' programme, it uses SMS messaging to provide targeted health advice, such as regular HIV testing, to drivers in Kenya.

A pilot study carried out by Amend in Dar es Salaam, Tanzania, showed that targeted SMS messages have the potential to increase helmet use among motorcycle taxi riders.

The combination of mobile phones is very beneficial for older people and people with limited mobility, as has been demonstrated through research by the organisation HelpAge International. Firstly, their actual need to travel is reduced, as they can communicate with people remotely or can send a motorcycle rider to a shop or clinic to collect something on their behalf. Secondly, when an older person or person with limited mobility does need to travel, they are able to summon a motorcycle taxi directly to their home, even when the roads are in poor condition or if only narrow paths and tracks exist in that location. By saving the phone numbers of riders in their phones, they are able to communicate with those who understand their need, such as driving slowly or avoiding bumpy roads.

Motorcycle taxi riders as first responders

The Tanzania Rural Health Movement uses an SMS/app-based emergency medical dispatching software designed specifically for communities that cannot afford advanced dispatching technologies. By relaying an SMS from the scene of an emergency to trained responders throughout the community, the software enables the nearest available emergency care providers to quickly locate, treat and transport emergency victims to local hospitals.

In Mwanza, through the Community First Response Project, motorcycle taxi riders have been recruited and trained to be first responders. As they always have their phones to hand, and are able to move quickly and independently, motorcycle taxi riders are often far quicker to the scene of an emergency than police or fire fighters.

6.2.2 Anti-lock Braking Systems

Anti-lock braking systems (ABS) prevent wheels from locking up under braking, so prevent skidding. In Europe, ABS fitted to motorcycles have been found to reduce the number of severe and fatal crashes by up to 42% (Rizzi, et al, 2014). The study concluded that "there is more than sufficient scientific-based evidence to support the implementation of ABS on all motorcycles".

On 1st January 2016, it became mandatory in Europe for all new motorcycles of 125cc and above to be fitted with ABS. A similar law came into effect in India on 1st April 2018.

A snapshot survey carried out for this study in Dar es Salaam, Tanzania, found that only expensive 'specialist' motorcycles have ABS. Of the types of motorcycles that are used as taxis, none were found to have ABS. Very few motorcycle vendors, technicians or riders have even heard of ABS.

No research has been carried out into the use of ABS on motorcycles in Africa. However, there is consensus among the experts interviewed for this research (who include the Chairman of the International Road Federation (IRF), the Director of Public Affairs for the Fédération Internationale de Motocyclisme, the founders of Pikilily and experienced motorcycle riders on rural roads in Tanzania and elsewhere in Africa) that ABS would improve motorcycle safety in Africa, including on unsealed rural roads.

In India, investigations are currently being undertaken by IRF into the possibility of retro-fitting ABS on used motorcycles. However, numerous challenges have been encountered and a scalable way to implement retro-fitting is yet to be found.

Many of the motorcycles currently being used in Africa are manufactured in India, such as Bajaj, Hero and TVS. As ABS is fitted as standard to these at the point of manufacture, the number of motorcycles with ABS being used in Africa is likely to increase in the coming years. Experience from India has shown that including ABS on newly-manufactured motorcycles has only a small impact on the sale price: an increase of around 2%.

IRF is currently advising the Chinese government on the implementation of a similar law. China is another major exporter of motorcycles to Africa, so a similar law would also have the knock-on effect of increasing the prevalence of ABS on motorcycles in Africa.

6.2.3 Other forms of technology

A researcher at the Vocational Educational and Training Authority (VETA) has developed a technology to improve safety by making sure that a motorcycle does not start unless the driver has put on a helmet. Two computer chips – one installed in the motorcycle and the other in the helmet – require the rider to wear the helmet before being able to start the engine. If the helmet is removed, the engine will automatically cut off. The researcher believes it will also be possible to apply the helmet to a passenger's helmet, if a passenger is on the motorcycle. The current design of the technology costs around GBP 115. No proper trial has yet been undertaken. As well as improving safety, the VETA researcher also believes the technology will help to reduce motorcycle theft.

Several riders interviewed spoke of the potential of tracking systems to address the problem of motorcycle theft.

The Mwanza-based NGO Pikilily trains women in motorcycle taxi operations, including in repair and maintenance, First Aid, self-defence, road safety and emergency transport. The women who stay with the organisation go on to themselves train other women.

7 Uptake of a motorcycle and three-wheeler rider training curriculum

7.1 Background

In 2015, in conjunction with SUMATRA and supported by ReCAP, Transaid developed a curriculum for training motorcycle and three-wheeler riders with a focus on motorcycle taxis.

The development of the curriculum involved key stakeholders including training schools, SUMATRA, Tanzania Revenue Authority, motorcycle and three-wheeler taxi associations, riders, owners and passengers. Following its official launch in 2016 at the National Institute of Transport, it was anticipated that the curriculum would be disseminated by the Traffic Police to driving schools nationwide. This section constitutes a review of the uptake of the curriculum, a general status report, and provides recommendations for next steps.

Between May and July 2018, consultation was undertaken with SUMATRA, Traffic Police, the Tanzania Driving Schools Association (TDSA) and their individual members, motorcycle associations and other relevant stakeholders to review the uptake of the curriculum. This involved paying particular attention to understanding any barriers to uptake, and to identifying opportunities to overcome them.

7.2 Findings

After the official launch of the curriculum in March 2016, responsibility for its dissemination and implementation was taken on by the Traffic Police, in their role of overseeing driver training. However, there was no clear road map to take this forward. In mid-2017, changes in leadership within the Traffic

Police resulted in a change of approach towards motorcycle training and the wider strategy related to motorcycle and three-wheeler taxis in Tanzania.

The curriculum continues to be perceived by all stakeholders as an important tool for implementation of effective motorcycle training. Stakeholders recognise and appreciate the consultative approach to its development, and are in general agreement that its content is appropriate and accurate. However, of all stakeholders interviewed during this review of uptake, only the Traffic Police were found to be in possession of the Swahili version of the curriculum. Upon finding this, Transaid shared the Swahili version with all others who were interviewed.

While some Traffic Police officers and local government officials perform outreach activities and sensitisation to motorcycle taxi riders, they receive no centralised training and are unaware of the curriculum. This results in inconsistent messages being taught to riders.

During interviews with TDSA and motorcycle and three-wheeler taxi associations, it was identified that there is limited demand for comprehensive motorcycle training. Riders' incomes are generally low, meaning that they cannot afford to pay to attend a comprehensive training course, and also cannot take significant periods of time away from income-earning activities. As such, even those driving schools that are currently using the curriculum only use very basic parts of it, and issue certificates to riders based only on their ability to complete this basic training. Riders are therefore able to obtain licences despite having undergone only basic training.

Other challenges identified during the review were:

- A lack of competent trainers able to teach motorcycle riding within driving schools and the Traffic Police
- The absence of an instructor's manual to accompany the curriculum
- Insufficient access to motorcycle training vehicles and protective equipment
- Inadequate facilities and training space
- Limited printing and publishing budgets
- Difficulties disseminating sizable documents via email

Through the review, it was also found that the Vocational Educational Training Authority (VETA), which together with NIT make up the two largest training institutions in Tanzania, has its own motorcycle and three-wheeler training curriculum, and does not intend to adopt the curriculum developed by Transaid and partners.

8 Opportunities for a mobile business licensing service for motorcycle and three-wheeler taxis

8.1 Background

Since 2011, riders of motorcycle and three-wheeler taxis in Tanzania have been required to possess a Road Service Licence (RSL). However, data from TRA and SUMATRA show that while at the end of 2014, over 830,000 motorcycles were registered in Tanzania, only around 5,400 RSLs had been issued (Bishop and Amos, 2015).

In an attempt to increase the issuing of RSLs, a Memorandum of Agreement was developed by SUMATRA and the then Prime Minister's Office for Regional Administration and Local Government (PMORALG), with the intention that local government authorities would issue RSLs on behalf of SUMATRA. However, the success of this initiative was very limited.

In rural areas, many motorcycle and three-wheeler taxi riders are not aware of the need to obtain an RSL, and even if they are aware they face challenges in accessing the services through which the licences are issued. Rates of possession of RSLs in rural areas are very low.

During the inception phase of this study, SUMATRA explained an initiative for the use of a mobile RSL-issuing van that would go to towns and villages away from the district centres to issue licences to riders there, with the increased revenue raised covering the cost of the mobile service and being used to fund safety awareness activities.

In July 2018, further consultations were held with SUMATRA to understand progress on implementation of this initiative.

8.2 Findings

SUMATRA has made a request to government for funding for the van. This funding has not yet been approved, although SUMATRA is confident that it will be approved soon. In the meantime, they have not undertaken any planning activities. They would welcome ReCAP's support to develop a strategy for the van and this research time will endeavour to provide support to help develop a plan for the roll out.

A discussion about the idea was also held with officials at Kibaha District Council, who said they thought it was a good idea.

9 Discussion and preliminary recommendations

The aim of this final section of the Draft Discussion Paper is not to provide definitive recommendations based on the findings of the research, but rather is to provide guidance on key areas for discussion during the four-day Team Workshop in early September 2018 and the subsequent country level workshop taking place later in September.

9.1 Critical importance of motorcycle taxis for rural transport

The initial findings of the Tanzanian component of the study have revealed just how important motorcycle taxis are to people living in rural areas of Tanzania. The first round of analysis of the survey data found that rural communities have a heavy reliance on motorcycle taxis to access health facilities. The data shows that 85% of riders have transported a passenger to a health facility in an emergency, and 78% of riders believe that they have saved someone's life by providing transport in an emergency. Sixty-eight percent of passengers have used a motorcycle taxi to access a health facility. The data also shows the economic benefits of motorcycle taxis including the earnings of riders and use of motorcycles to transport freight to market.

Points for discussion during the Team Workshop will include:

- Recognising their importance, what can be done to increase the benefits that motorcycle taxis provide?
- Recognising the safety risks and low levels of rider training, what can be done to increase safety for both riders and passengers?
- Recognising their use for health-related trips, what can be done to make motorcycle taxis more appropriate for people who are pregnant, ill, injured or disabled?

9.2 Risk of being injured is the 'worst thing', but does not put people off

Both riders and passengers said that the risk of being injured is the worst thing about motorcycle taxis. Forty-one percent of riders and 13% of passengers reported that they had suffered an injury that either resulted in them losing money, or required medical attention or affected their family life, while riding a motorcycle in a rural area.

Ten percent of riders said that they had been victims of crime, with half of these having been a victim of a robbery that involved force. Three percent of victims said they had been a victim of verbal abuse and threats. It is possible that riders are more at risk as they are in possession of a motorcycle and are known to carry cash and a mobile phone.

However, the fact that motorcycle taxis were the predominant mode of transport in the study settlements, and the fact that the study team struggled to find people who said they rarely or never use motorcycle taxis, demonstrate that the majority of both riders and passengers perceive the benefits to outweigh the risks. As long as this is the case, the motorcycle taxi industry can be expected to grow.

Points for discussion during the Team Workshop will include:

- What can be done to improve road safety, in particular through training of riders, but also through personal protective equipment and ABS?
- What can be done to improve emergency response in rural communities, possibly learning from examples such as the Community First Response Project in Mwanza?
- What can be done to improve personal security, in particular of riders, including through strengthening motorcycle taxi associations?

9.3 Need to overcome institutional challenges

The study has identified a number of interesting government-led initiatives that have proven challenging to implement and have faced certain barriers. Examples include the Memorandum of Understanding that was intended to see local government authorities issuing road service licences on behalf of SUMATRA, and the increased revenue earned being used for road safety initiatives, and the widespread uptake of the motorcycle rider training curriculum.

It appears that SUMATRA and the Traffic Police have the basis of a strong working relationship. They have also been very ready to engage on such initiatives, which should be acknowledged and appreciated. Strengthening this working relationship further, with their responsibilities for regulation, enforcement and training, they have the potential to change the landscape of the motorcycle taxi industry. A coordinated strategy between these two key government stakeholders, recognising the importance of motorcycle taxis for rural communities, but also recognising the need to make their services safer, and engaging communities in their development, would increase the chances of success of future initiatives.

Future initiatives through which SUMATRA and the Traffic Police may find synergies by cooperating together include the strengthening of training by supporting driving schools with the roll-out of the motorcycle training curriculum, the SUMATRA licensing van, and dissemination of the motorcycle taxi association operating manual.

Points for discussion during the Team Workshop will include:

- What can be done to strengthen cooperation between government departments, to improve the chances of success of government-led initiatives?
- What can be done to coordinate motorcycle training within all government and private motorcycle training institutions, including VETA?

9.4 Engaging local government authorities

While the Memorandum of Understanding between SUMATRA and local government authorities related to issuing road service licences has not been successful to date, local government authorities remain an important stakeholder in maximising the benefits to communities of safe motorcycle taxi services. Earlier studies have identified the opportunities for Community Development Officers to deliver road safety sensitisation to motorcycle taxi riders in their wards (Bishop, 2016), and for Community Police Officers to assist where the capacity of the regular police is stretched. Local government authorities also have education officers and health officers.

In the survey, riders who had suffered an injury most commonly cited ‘Roadway condition / damage / obstacle’ (36%) as the cause of the incident that resulted in the injury. Significant efforts have been made to improve Tanzania’s rural road network in recent years, and in 2017 the Tanzanian Rural and Urban Roads Agency (TARURA) was formed with responsibility for developing and maintaining the district road network. The Ministry of Works’ 2016 Low Volume Roads Manual includes guidance to roads engineers on how to

design rural roads safely, giving consideration to motorcycles. Supplementary advice was also developed, but is yet to be piloted.

Points for discussion during the Team Workshop will include:

- What can be done to capitalise on the existing capacity and interest among district councils and Community Development Officers to provide road safety sensitisation to motorcycle taxi riders?
- What can be done to support TARURA and local communities to reduce risks to motorcyclists associated with the condition of rural roads?

9.5 Training and sensitising riders, and trainers

It is very clear from the findings of the study that further training and sensitisation activities are needed to improve safety as well as other aspects of motorcycle taxis. There are many possible mediums through which training and sensitisation could be delivered, including training institutions, driving schools, media, local government officials, civil society and even SUMATRA's mobile van. The operations manual for motorcycle taxi associations has the potential to improve the entire service offered by riders, beyond only safety. Lessons learned from the curriculum should be applied to ensure this manual is effectively disseminated.

It has also been identified that there is a dearth of skilled motorcycle trainers in Tanzania. A training of trainers programme for Traffic Police officers and registered driving schools would be a first step to addressing this. Support to the Traffic Police should be established to ensure that their efforts to carry out outreach activities and engage with motorcycle taxi riders are supported. Strengthening the outreach programmes will increase the awareness of key safety messages.

Points for discussion during the Team Workshop will include:

- What can be done to widen the use of the motorcycle and three-wheeler rider training curriculum?
- How can a training of trainers programme be developed and funded?
- What can be done to support outreach activities by the Traffic Police?

9.6 Use of mobile phones while riding a motorcycle

Together, motorcycle taxis and mobile phones bring many benefits to rural communities. However, it is not uncommon to see a motorcycle rider using a mobile phone – either calling or texting – while riding. This is a clear risk for himself, any passengers being carried, and for other road users. This study's review of legislation has identified that there is no clear law that prohibits use of a mobile phone while riding a motorcycle.

Points for discussion during the Team Workshop will include:

- How can the law be strengthened and enforced to reduce the use of mobile phones while riding?

References

Amend, 2015. The magnitude and characteristics of road traffic injury in Kilolo District, Tanzania. Available at: http://www.research4cap.org/Library/BishopETAL-Amend-Tanzania-2015-KiloloBaseline+Annexes-AFCAPTAN2015B-v150616.pdf

Bishop, 2016. Advice for Community Development Officers: Provision of Road Safety Awareness in Rural Communities. Cardno / DFID. UK

Bishop, T and Amos, P, 2015.Opportunities to improve road safety through 'boda-boda' associations in Tanzania. Final Report. AfCAP project TAN2015G. Thame, UK, Africa Community Access Partnership (AfCAP). 59p. Available at: http://www.research4cap.org/Library/BishopAmos-Amend-Tanzania-2015-BodaAssocs+Final+Report-AFCAPTAN2015G-v150616.pdf

The Citizen newspaper, 13th August 2018. Health risk on the two wheeler. Dar es Salaam, Tanzania (quoting Adamu, L. *et al.* 2012. Microorganisms associated with commercial motorcycle helmets in Lagos Metropolis. Journal of Microbiology, Biotechnology and Food Sciences, 2012 : 1 (5) 1179-1188. Available at: https://www.researchgate.net/publication/267987340_MICROORGANISMS_ASSOCIATED_WITH_COMMERCIAL_MOTORCYCLE_HELMETS_IN_LAGOS_METROPOLIS)

Rizzi et al, 2015. Effectiveness of motorcycle antilock braking systems (ABS) in reducing crashes, the first cross-national study. Traffic Injury Prevention, 2015;16(2):177-83. doi: 10.1080/15389588.2014.927575. Available at: https://www.ncbi.nlm.nih.gov/pubmed/24884403