

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

Final Country Report: Kenya



Transaid, Amend and TRL

RAF2114A

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Cover photo: Grace Muhia, Kenya

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## Abstract

This Kenya Country Report presents the Kenya-specific findings of the project 'Enhancing understanding on safe motorcycle and three-wheeler use for rural transport and the implications for appropriate training and regulatory frameworks'. This project was carried out in Ghana, Kenya, Tanzania and Uganda between September 2017 and January 2019.

Based on the findings of a comprehensive literature review and a stakeholder mapping and engagement exercise, an in-depth study was designed, including a number of activities that were carried out in all four countries and a number of country-specific activities. Activities included reviews of the regulatory framework and training, a survey of the benefits and disbenefits of motorcycle and three-wheeler taxis, key informant interviews and focus group discussions. In Kenya, the project looked in particular at health issues faced by riders.

The study has revealed that motorcycle taxis are very important for rural travel, and are very popular among rural communities. They are especially important for health-related trips and also provide economic advantages, creating employment and supporting agriculture.

As well as the many benefits that motorcycle taxis provide, riders and passengers also suffer from crashes, crime, abuse and health issues, and they create safety risks for other road users. A very small proportion of people in rural communities does not – or cannot – use motorcycle taxis, but for the vast majority they are the most common form of day-to-day transport.

While the study has revealed that in comparison to the other three countries, Kenya appears to be leading in the management of the motorcycle taxi sector, there are many areas in which improvements are needed.

The results of the study can be used by the Kenyan government and others to better understand the issues related to motorcycle taxis in rural areas and to develop policy and practice to maximise their benefits and minimise the disbenefits. This will include uptake of two manuals that have been developed as part of this project: a motorcycle taxi instructors' manual and an operating manual for motorcycle taxi associations.

## Key words

Motorcycles, Motorcycle taxis, Three-Wheelers, Rural transport, Rural access, Safety, Training, Regulatory framework, Enforcement, Kenya

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### 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](http://www.research4cap.org)

## Acronyms, units and currencies

AA	Automobile Association
AfCAP	Africa Community Access Partnership
AsCAP	Asia Community Access Partnership
BAK	Boda Boda Safety Association of Kenya
cc	Cubic capacity (engine size)
DFID	Department for International Development (United Kingdom)
GBP	British pound sterling
GPS	Global positioning system
km	Kilometre(s)
KES	Kenyan shilling (GBP 1 = KES 133.11, at 1 <sup>st</sup> July 2018)
LED	Light-emitting diode
MTRD	Materials Testing and Research Department (Kenya)
NGO	Non-governmental organisation
NTSA	National Transport & Safety Authority (Kenya)
PMU	Programme Management Unit (of ReCAP)
PPE	Personal protective equipment
ReCAP	Research for Community Access Partnership
SACCOS	Savings and Credit Cooperative Societies
SMS	Short message system
TRL	Transport Research Laboratory
UK	United Kingdom (of Great Britain and Northern Ireland)
UKAid	United Kingdom Aid (Department for International Development, UK)
UNICEF	The United Nations Children's Fund
USD	United States dollar (GBP 1 = USD 0.75724, at 1 <sup>st</sup> July 2018)
VAT	Value Added Tax
WHO	World Health Organization

## 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’ was carried out in Ghana, Kenya, Tanzania and Uganda between September 2017 and January 2019.

The use of motorcycles in many African countries has increased greatly in recent years. Motorcycles are often used as taxis, with riders<sup>1</sup> 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. As motorcycles often travel off the road, along paths and tracks, they have changed the nature of rural transport, effectively ‘widening’ the impact of roads.

Motorised three-wheelers are also used in some countries, although their numbers are far fewer, especially in rural areas.

In some African countries, including Ghana, the use of motorcycles and motorised three-wheelers to carry fare-paying passengers is banned, although these bans are not always enforced, especially in rural areas. In Uganda, the use of only motorised three-wheelers as taxis is banned. In Kenya, the use of both motorcycles and motorised three-wheelers as taxis is legal.

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.

This Kenya Country Report provides a brief introduction to the project and then describes the findings of the Kenya research activities. It presents brief conclusions and a set of recommendations specific to the Kenyan situation. However, for more detailed discussion and more comprehensive recommendations, the project’s Final Report will be of interest to readers.

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<sup>1</sup>Throughout this report, the term ‘rider’ is used to mean the driver or operator of a motorcycle or three-wheeler. The term rider does not include passengers.

## 1 Introduction

The research project ‘Enhancing understanding on safe motorcycle and three-wheeler use for rural transport and the implications for appropriate training and regulatory frameworks’ was carried out by a consortium led by Transaid and including Amend and TRL (the UK’s Transport Research Laboratory).

### 1.1 Research Objectives

The overall aim of the project was 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.

### 1.2 Research Countries

The research project covers four countries: Ghana, Kenya, Tanzania and Uganda, shown in Figure 1.



**Figure 1** The four project countries

According to the latest data available from the World Health Organization (WHO, 2015) at the time that this project was developed, motorcycles and motorised three-wheelers made up 23% of the total registered vehicle fleet in Ghana, 37% in Kenya and 34% in Tanzania. Comparable data was not available for Uganda at the time this project was developed, but more recent WHO data published during the course of this project put the figure for Uganda at 59% (WHO, 2018).

### 1.3 Research Methodology

Three main activities were conducted across all four project countries. These activities were:

- A review of motorcycle and three-wheeler taxi-related regulatory framework and enforcement methods
- A review of motorcycle and three-wheeler taxi rider training
- A survey of benefits and disbenefits of motorcycle and motorised three-wheeler taxis among riders and other users in rural areas

An investigation into the potential of technology to enhance safe motorcycle and three-wheeler use for rural transport was also carried out in three of the project countries – Kenya, Tanzania and Uganda – and also in Rwanda, which is known throughout Africa as a centre for mobile phone technology. Ghana was not included in this investigation.

In addition, country-specific activities were undertaken, addressing specific research gaps identified during the Inception Phase. These activities were:

- In Ghana, reanalysis of existing motorcycle and three-wheeler related data with a rural focus
- In Kenya, a study to understand the health-related benefits and impacts of motorcycle and three-wheeler use
- In Tanzania, the development of two manuals: one to improve the operations of motorcycle taxi associations, and one for rider training
- In Uganda, investigations to understand the barriers to motorcycle and three-wheeler taxi use faced by some members of the study communities

Following completion of the research activities, a draft country discussion paper was produced for each of the four countries, based on an initial analysis of the data.

These draft discussion papers were presented at a series of workshops – firstly a 4-day workshop that brought two key government stakeholders from each of the four countries together with the project team, and secondly four 1-day workshops (one in each country) of around 30 stakeholders each.

These workshops allowed the project team to present the initial findings of the different research activities, including comparisons between the four countries, and provided opportunity for questions to be asked and ideas to be shared.

#### **1.4 Background to Motorcycles and Three-Wheelers in Kenya**

The use of motorcycles as taxis was first noted in Kenya in the 1990s. They are known locally as ‘boda boda’, a term that has spread across East Africa from Uganda. Data from the WHO shows that by 2013, there were around 738,000 motorcycles and three-wheelers registered in Kenya (WHO, 2015).

Motorcycle taxis are popular in both urban and rural areas. In rural areas, they are the most commonly available form of motorised transport, and are closely associated with agriculture, being used to transport produce to markets.

The government regulates the commercial use of motorcycles and three-wheelers, seeing it as a form of revenue through fees and taxes. The government also recognises them as an important form of employment in rural areas.

## **2 Research Findings in Kenya**

### **2.1 Stakeholder Mapping and Engagement**

Early on in the project, during October and November 2017, difficulties were experienced in arranging to meet with Kenyan government stakeholders to introduce the project. This was due to instability surrounding the country’s general election. However, the project was introduced in person to Engineer Stephen Kogi, the representative of the AfCAP partner institution (the Materials Testing and Research Department), during a ReCAP meeting in Uganda. He expressed a particular interest in the relationship between motorcycle crashes and the condition of rural roads.

Other face-to-face meetings were held with the National Transport and Safety Authority (NTSA), the Ministry of Health, the company MondoRide, which runs a ride-hailing ‘app’, and the NGO HelpAge International.

In total, the stakeholder mapping exercise in Kenya identified a total of 16 stakeholders who have some responsibility or interest related to motorcycle and three-wheeler taxis in rural areas, representing government, private sector; and civil society. A full list of these stakeholders can be found in this project's Inception Report.<sup>2</sup>

## 2.2 Review of Regulatory Frameworks and Enforcement Methods

Motorcycle and three-wheeler related legislation is found in The Traffic Act 39 of 1953 (revised in 2015), the Traffic Act Chapter 403 - Revised Edition 2012, and the Operation of Motorcycles Regulations, 2014.

The use of both motorcycles and three-wheelers to carry passengers and/or goods for a fare is permitted in Kenya, on the condition that the vehicle is licensed by the regulatory body –NTSA. In comparison with the other three countries in this study, Kenyan legislation appears to be fairly comprehensive, including, for example, requirements for:

- Motorcycle and three-wheeler taxis to have special public service vehicle insurance
- Motorcycle taxi riders' helmets to be yellow and to be marked with the vehicle registration number
- Motorcycles not to be sold or transferred without two helmets being provided to the new owner
- Seat belts to be fitted for the driver and all passengers of three-wheelers
- Loads to be restricted by both weight and dimensions
- Motorcycle headlights to be turned on at all times while riding, including during daylight
- Motorcycle and three-wheeler taxi riders to be members of a registered association with a minimum of 100 members

Interviews with NTSA and the Traffic Police have revealed significant challenges in implementing and enforcing many of these laws. A general impression from the Traffic Police appears to be that by the time the Operation of Motorcycles Regulations, 2014 came into force (in 2015), many of the practices that became outlawed were so deeply ingrained within motorcycle and three-wheeler riders' common behaviour that strictly enforcing the law would have resulted in punishing every rider in the country. Rather, the approach to enforcing these regulations was described by one officer as "hitting them with soft gloves", often choosing to educate and encourage rather than punish.

NTSA officials have in the past complained about having too few officers to enforce the laws, especially in villages away from the main towns (The Nation newspaper, 2015). In an effort to address this, in 2016, NTSA, in conjunction with the Ministry of Transport, established Transport and Safety Committees in all of Kenya's 47 counties, to spearhead safety and regulatory measures amongst motorcycle taxi riders. Twenty-three of these committees are currently active and implementing the safety policies, albeit at a reportedly slow pace. The rest are still in their formative stages.

On 9<sup>th</sup> January 2018, the President of Kenya issued a directive that all NTSA officers should be withdrawn from the roads and that Traffic Police officers should take over all enforcement duties. NTSA can no longer directly enforce the law, it can only send advisory memos to the Traffic Police, who in turn can choose to act on the advice or not as they see fit. While this weakens NTSA, it may help to address the identified problem of both authorities being reluctant to take full responsibility for enforcement of motorcycle and three-wheeler-related legislation, so as not to be held fully accountable. Another disincentive to the authorities to enforce legislation is the fear of connections between motorcycle and three-wheeler taxi riders and operators and people in positions of power, "not knowing whose patch you might be treading on".

In some areas, from time to time police do hold campaigns, cracking down on motorcycle and three-wheeler taxi riders who are found to be breaking the law. During these campaigns, many riders are arrested and their motorcycles confiscated until a fine is paid. However, these motorcycles often remain impounded at the police station without anyone coming to claim them; this is reportedly often because they were

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<sup>2</sup><http://www.research4cap.org/Library/BishopBarber-AmendTransaid-2017-EnhancingUnderstandingSafeMotorcycleThreeWheelerUse-Inception-AfCAP-RAF2114A-180130.pdf>

stolen in the first place, so the rider was not the legal owner and so is unable to get the motorcycle released. In some areas, motorcycle theft is increasing, with reports of thieves posing as passengers, threatening the rider when they reach a remote part of the journey.

As well as theft of motorcycles, police officers interviewed through these investigations described crimes committed by motorcycle taxi riders. These include sexual assault of female passengers who cannot pay for their journey.

Police explained the difficulties of catching motorcycle taxi riders who commit crimes, especially in rural areas. Police (and also NTSA) believe that a rider who is a member of an association is easier to locate if he has committed a crime, and also believe that working with associations is an effective way of providing training. However, especially in rural areas, enforcing the requirement for taxi riders to be members of associations is very challenging. Police are also aware that it is common for motorcycle taxi riders to obtain their driving licence “through the back door”, without undergoing any training, but simply paying a driving school instead.

In one area included in the study, the police explained that they strictly enforce the use of helmets by riders, with fines of around KES 5,000 (around GBP 37.56) for riders found not wearing one. This has reportedly resulted in high rates of helmet use locally.

### 2.3 Review of Motorcycle and Three-Wheeler Taxi Rider Training

In Kenya, a motorcycle rider is not legally required to have undertaken any formal motorcycle training, although they are required to have a licence. The Traffic Act states: “(31)-(1) A licensing officer shall not grant an applicant a driving licence endorsed in respect of any class of motor vehicle unless the driver to be licensed satisfies the licensing officer that he has passed a test of competence to drive that class of motor vehicle conducted under section 39, or that he holds a certificate of competency for that class of motor vehicle.”<sup>3</sup>

The Traffic Act only requires a rider to have passed a driving test before being entitled to a full driving licence for that class. There is no requirement for rider training prior to testing. This scenario requires a robust testing process, which may not be in place or enforced. Training prior to testing would likely improve rider competency that may not currently be effectively assessed during testing.

NTSA has published a curriculum for driver training, testing and licensing, which includes a chapter on motorcycle riding. However, investigations have shown that this is not widely used, and that some training schools use other documents, such as the Highway Code, or develop their own training material.

The availability of motorcycle training is very largely focused on urban areas. In rural areas, there is little demand for motorcycle training. With no legal requirement to undertake training, and with the challenges of travelling to a town or city to access training and the cost of a training course, many riders do not see training as a priority.

There are many driving schools that offer motorcycle training in Nairobi, and some in other cities and towns, the most established institution being the Automobile Association (AA) of Kenya, which according to its website, has 22 branches across the country.

Glen Edmunds Advanced Driving has recently launched a motorcycle training course from Nairobi. The course is targeted towards riders who have at least one year’s riding experience with a valid licence and covers a wide range of topics from driving style to carrying passengers.

Savvy Riders, an organisation which manages a mobile phone ride-hailing application (or ‘app’) offers a training scheme for its riders in Nairobi. The company has developed its own professional training programme, which is mandatory for every rider and includes ongoing refresher sessions too. However, the organisation only accepts pre-qualified urban riders, which would rule out riders with only rural motorcycle experience.

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<sup>3</sup> The wording here is taken directly from the Traffic Act.

The Sensei Institute of Technology, at its Nakuru campus, offers a two-month course in motorcycle maintenance and mechanics, which also teaches the skills required to run a small motorcycle repair business. The course is offered for KES 55,000 (c.GBP 413), with an additional option to sit a motorcycle rider’s licence test for KES 7,000 (c.GBP 53). Given the location of its campus, the SIT would appear to have the potential to serve a rural catchment area.

The police conduct outreach programmes around the country, including in rural areas, sometimes in partnership with NTSA and other stakeholders. This initiative is driven by a Chief Inspector who is based at the Traffic Police headquarters in Nairobi, but who travels around the country delivering training. The training is largely theoretical rather than practical, and focuses on topics such as correct positioning of motorcycles on the highway (on the main carriageway, but to the left side), regulations on size and weight of loads, the safe carriage of passengers, and the use of helmets and reflective jackets. On some occasions, the Chief Inspector has been able to deliver training to groups of up to 300 riders at a time, through coordination with riders’ associations (SACCOS) and local police. However, the scale-up of such initiatives is currently hindered by high rates of turnover and transfers of police officers.

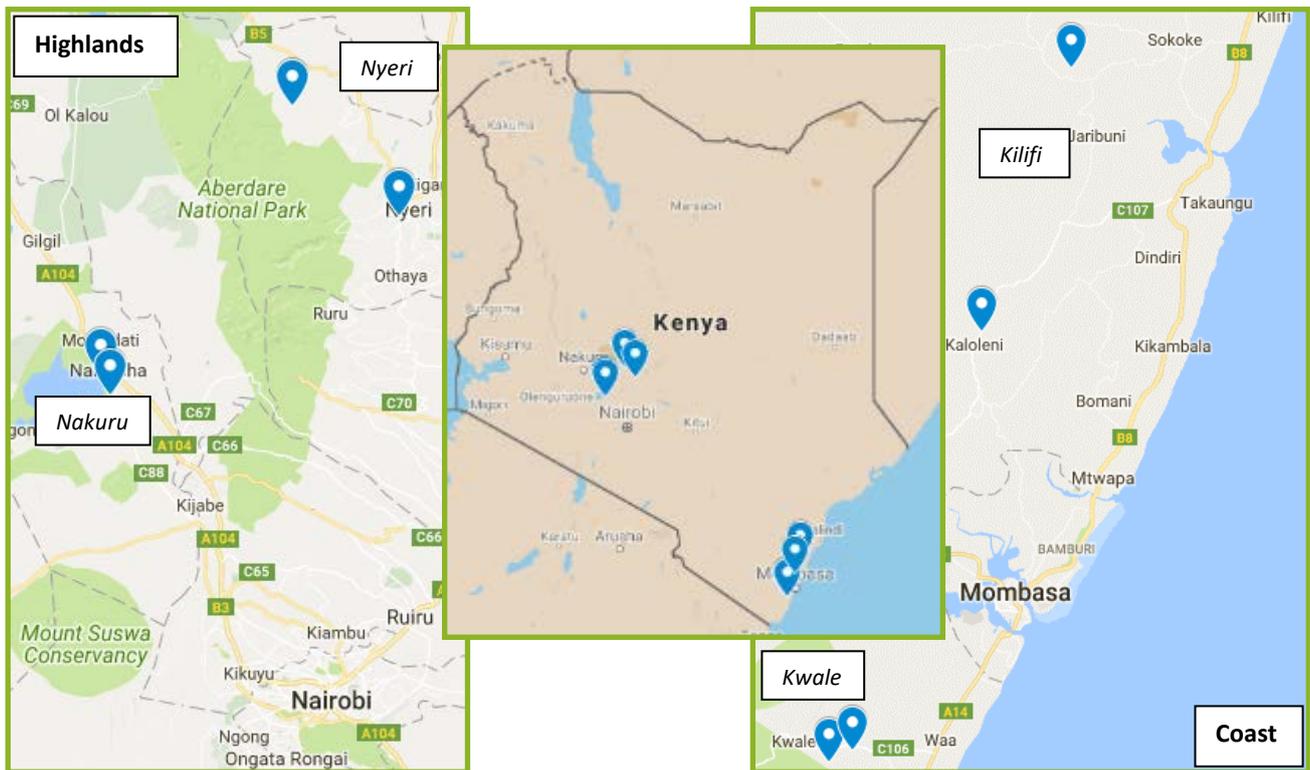
## 2.4 Survey of the Benefits and Disbenefits of Motorcycle and Three-Wheeler Taxis

### 2.4.1 Survey locations

The survey of benefits and disbenefits was carried out in eight different settlements across Kenya. Table 1 outlines the eight settlements, Figure 2 shows their locations within Kenya, and more detailed information is provided in Tables 2 to 5 and Figures 3 to 6.

**Table 1 Survey settlements, Kenya**

Agro-Ecological Zone	County	Settlement
Highlands	Nyeri	Gitero
Highlands	Nyeri	Nganoini
Highlands	Nakuru	Banda
Highlands	Nakuru	Karagita
Coast	Kilifi	Kaloleni
Coast	Kilifi	Kassava
Coast	Kwale	Tsimba
Coast	Kwale	Kivumoni



Source: Google Maps

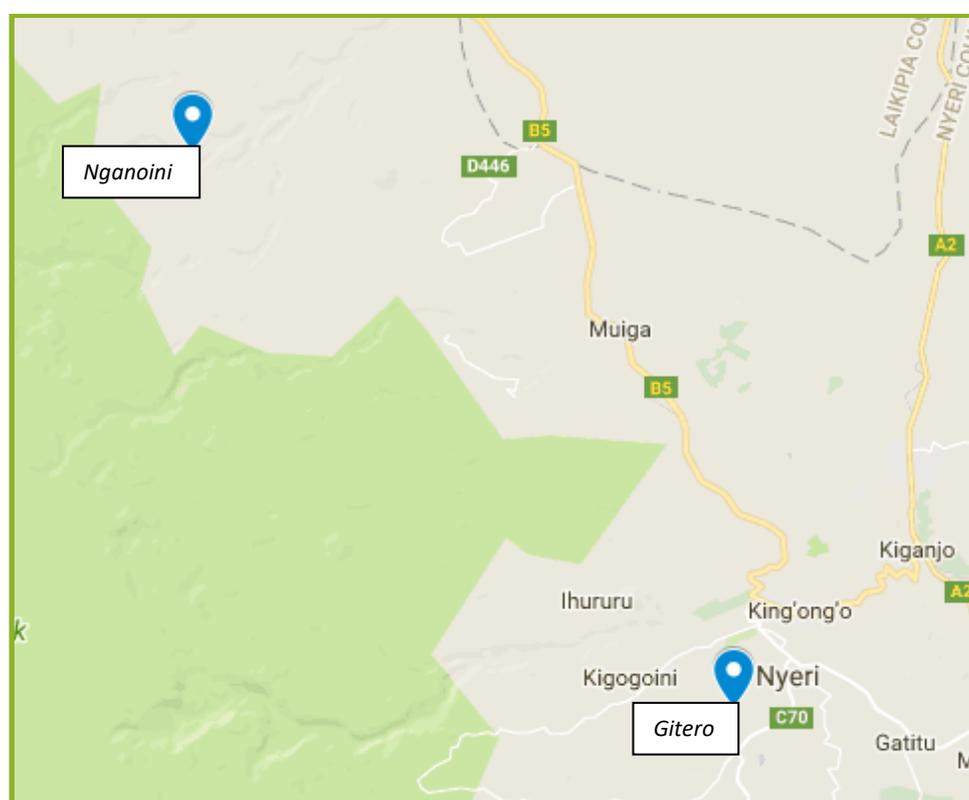
**Figure 2** Maps of Kenya, showing survey locations

*Note – due to the close proximity of the two settlements in Nakuru County and the two settlements in Kwale County, it is not possible to differentiate between their locations as shown by the markers on the map of the entire country.*

Information about the settlements was obtained through interviews with local leaders, discussions with local people and general observations 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 Nyeri County**

	<b>Gitero Village</b>	<b>Nganoini Village</b>
Location and access	<ul style="list-style-type: none"> <li>• 0 26 53.1S 36 56 18.8E</li> <li>• 150 km from Nairobi city</li> <li>• 5 km from district centre (Nyeri town)</li> <li>• 2 km from nearest sealed road</li> <li>• Less remote</li> </ul>	<ul style="list-style-type: none"> <li>• 0 15 16.8S 36 45 08.3E</li> <li>• 200 km from Nairobi city</li> <li>• 52 km from district centre (Nyeri town)</li> <li>• 10 km from nearest sealed road</li> <li>• More remote</li> </ul>
Transport options	<ul style="list-style-type: none"> <li>• Motorcycle taxis are predominant mode of transport</li> <li>• Recent introduction of 14-seat minibus operating between Gitero and Nyeri</li> <li>• One three-wheeler observed</li> <li>• Accessible year round due to good roads</li> </ul>	<ul style="list-style-type: none"> <li>• Motorcycle taxis are predominant mode of transport</li> <li>• Donkey use has declined as motorcycle taxis have increased</li> <li>• Four-wheel taxis can be called from nearby</li> <li>• Four-wheel access difficult year-round, especially in rainy season</li> </ul>
Population	<ul style="list-style-type: none"> <li>• 6,700 people approx.</li> <li>• Mix of ages</li> <li>• Majority are Kikuyu ethnic group</li> </ul>	<ul style="list-style-type: none"> <li>• 2,000 people approx.</li> <li>• Mix of ages</li> <li>• Majority are Kikuyu ethnic group</li> </ul>
Economy	<ul style="list-style-type: none"> <li>• Agriculture: coffee is traditionally the most important cash crop, but more recently it is maize and avocados</li> </ul>	<ul style="list-style-type: none"> <li>• Agriculture: onions and maize are most important local crops. Also potatoes, green peas and wheat</li> <li>• Some families keep cattle, goats and sheep for milk and meat</li> </ul>
Recent development	<ul style="list-style-type: none"> <li>• Improved road to Nyeri has brought greater access to farms and transport services</li> <li>• NGOs have provided training on farming techniques</li> </ul>	<ul style="list-style-type: none"> <li>• Community have built a local access road using stone excavated for water storage</li> <li>• Training on improved farming techniques has been carried out by NGOs</li> </ul>
Local issues	<ul style="list-style-type: none"> <li>• High unemployment among young men</li> </ul>	<ul style="list-style-type: none"> <li>• Seasonal water shortages</li> <li>• Cattle and crop disease</li> </ul>

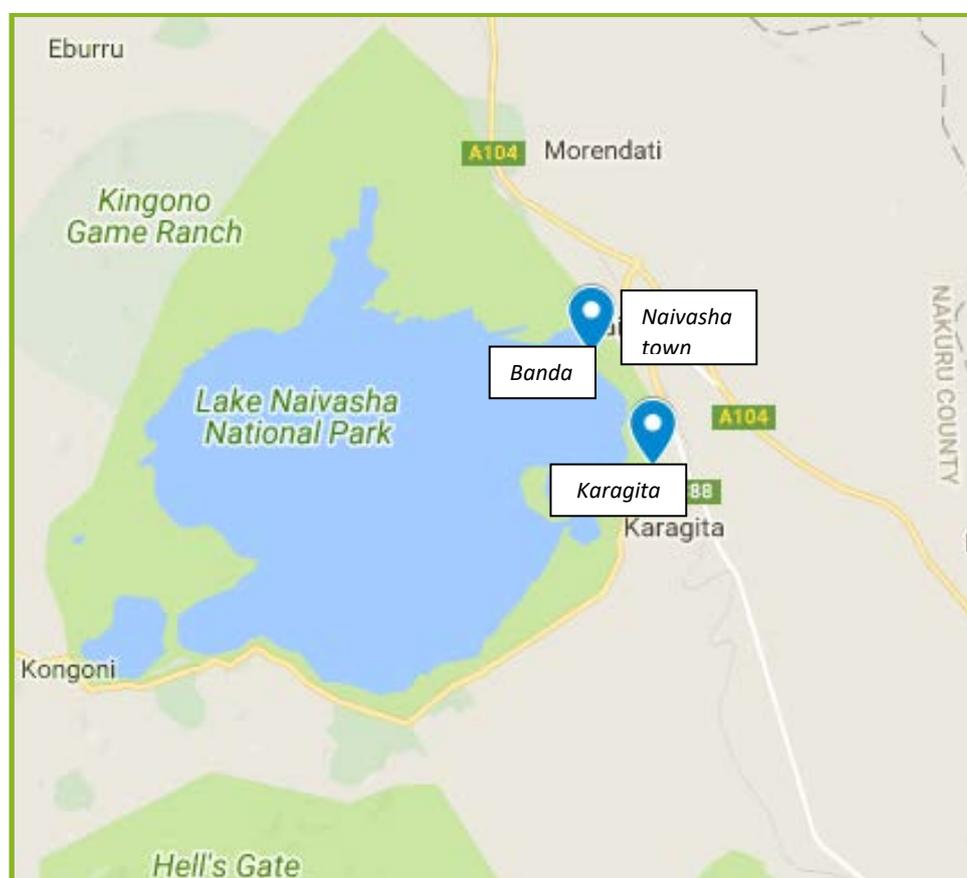


Source: Google Maps

**Figure 3 Map of Gitero and Nganoini**

**Table 3 Settlements in Nakuru County**

	<b>Banda Village</b>	<b>Karagita Village</b>
Location and access	<ul style="list-style-type: none"> <li>• 0 43 32.1S 36 24 57.7E</li> <li>• 100 km from Nairobi city</li> <li>• 72 km from county centre (Nakuru town)</li> <li>• 3 km from Naivasha town</li> <li>• 2 km from nearest sealed road</li> <li>• Less remote</li> </ul>	<ul style="list-style-type: none"> <li>• 0 45 35.9S 36 26 04.4E</li> <li>• 90 km from Nairobi city</li> <li>• 76 km from county centre (Nakuru town)</li> <li>• 5 km from Naivasha town</li> <li>• Sealed road passes through village</li> <li>• Less remote</li> </ul>
Transport options	<ul style="list-style-type: none"> <li>• Predominantly motorcycle taxis available</li> <li>• Three-wheelers available, but only for freight</li> <li>• Access difficult during rainy season</li> </ul>	<ul style="list-style-type: none"> <li>• Motorcycle taxis most popular form of transport</li> <li>• Minibuses available</li> <li>• Three-wheelers available, but only for freight</li> <li>• Accessible year round due to sealed road</li> <li>• Roads close to lake are poor, especially during rainy season</li> </ul>
Population	<ul style="list-style-type: none"> <li>• 1,000 people approx.</li> <li>• Many young adults and children</li> <li>• 70% Kikuyu, 20% Masai, 10% other ethnic groups</li> </ul>	<ul style="list-style-type: none"> <li>• 20,000 people approx.</li> <li>• Balanced across age groups</li> <li>• 70% Kikuyu, 20% Masai, 10% other ethnic groups</li> </ul>
Economy	<ul style="list-style-type: none"> <li>• Fishing, horticulture (especially flower farming), pastoralism</li> </ul>	<ul style="list-style-type: none"> <li>• Fishing, horticulture (especially flower farming)</li> </ul>
Recent development	<ul style="list-style-type: none"> <li>• Health education and efforts to eliminate illiteracy are underway</li> <li>• Recent improvements to some roads</li> </ul>	<ul style="list-style-type: none"> <li>• No current development programmes</li> <li>• Recent improvements to some roads</li> </ul>
Local issues	<ul style="list-style-type: none"> <li>• Poor roads and lack of sewer drainage</li> <li>• High crime rate</li> <li>• Seasonal flooding reduces access</li> </ul>	<ul style="list-style-type: none"> <li>• Poor roads and drainage</li> <li>• Prostitution and drug abuse</li> </ul>

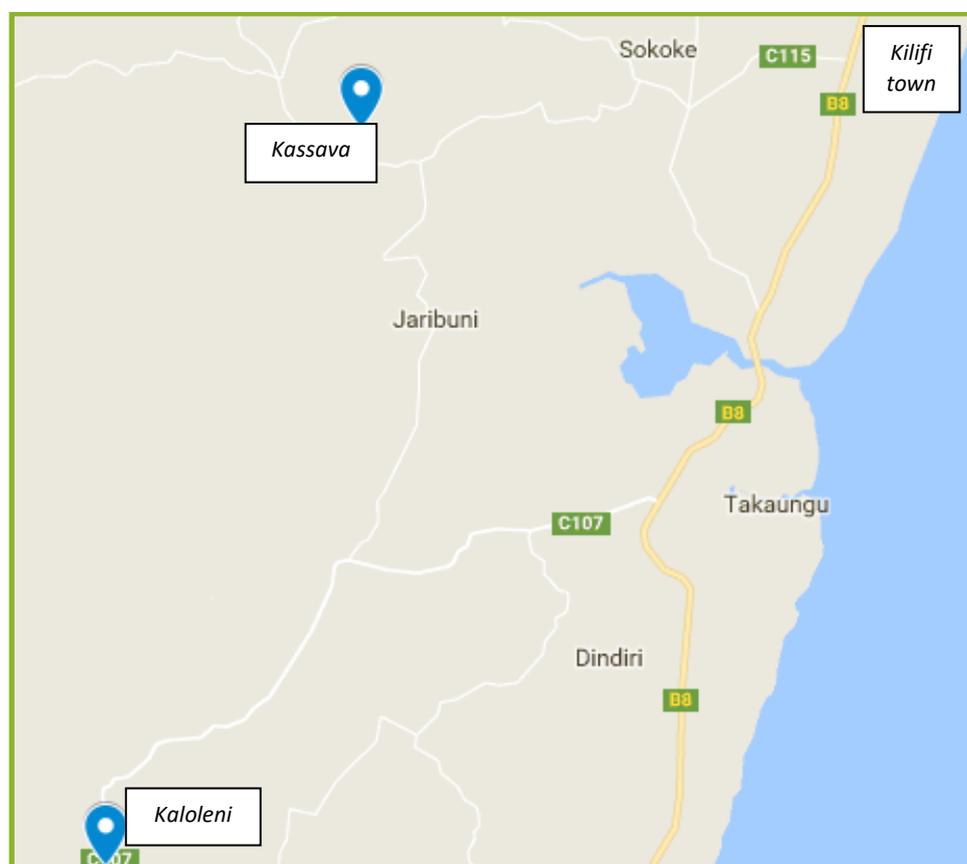


Source: Google Maps

**Figure 4 Map of Banda and Karagita**

**Table 4 Settlements in Kilifi County**

	<b>Kaloleni Village</b>	<b>Kassava Village</b>
Location and access	<ul style="list-style-type: none"> <li>• 3 48 07.8S 39 38 04.3E</li> <li>• 42 km from Mombasa city</li> <li>• 54 km from county centre (Kilifi Town)</li> <li>• 2 km from nearest sealed road</li> <li>• More remote</li> </ul>	<ul style="list-style-type: none"> <li>• 3 33 32.3S 39 43 05.9E</li> <li>• 77 km from Mombasa city</li> <li>• 29 km from county centre (Kilifi Town)</li> <li>• 6 km from nearest town (Ganze)</li> <li>• 2 km from nearest sealed road</li> <li>• Less remote</li> </ul>
Transport options	<ul style="list-style-type: none"> <li>• Motorcycles, three-wheelers, public minibuses and large buses are all available</li> <li>• Parts are sometimes inaccessible during rainy season, even to motorcycles</li> </ul>	<ul style="list-style-type: none"> <li>• Motorcycles, three-wheelers, public minibuses are all available</li> <li>• Parts are sometimes inaccessible during rainy season, even to motorcycles</li> </ul>
Population	<ul style="list-style-type: none"> <li>• 8,000 people approx.</li> <li>• Main ethnic groups are Giriama, Chaga and Taita</li> <li>• Young population</li> </ul>	<ul style="list-style-type: none"> <li>• 5,000 people approx.</li> <li>• Main ethnic groups are Chaga, Rabai and Taita</li> <li>• Young population</li> </ul>
Economy	<ul style="list-style-type: none"> <li>• Agriculture: wine tapping</li> </ul>	<ul style="list-style-type: none"> <li>• Agriculture: cassava and wine tapping</li> <li>• Many young men employed as motorcycle taxi riders</li> </ul>
Recent development	<ul style="list-style-type: none"> <li>• Recent introduction of a local market</li> <li>• Motorcycle taxis have improved accessibility</li> </ul>	<ul style="list-style-type: none"> <li>• Improvement of the main road to Ganze town</li> <li>• Plan International providing education to girls</li> </ul>
Local issues	<ul style="list-style-type: none"> <li>• High rates of poverty and illiteracy</li> <li>• No electricity</li> <li>• High rates of teenage pregnancy</li> <li>• Alcohol abuse among young men</li> </ul>	<ul style="list-style-type: none"> <li>• High rates of poverty</li> <li>• No electricity</li> <li>• High rates of school drop-out: males to take casual labour and females because of teenage pregnancy</li> <li>• Drug abuse among young men</li> </ul>

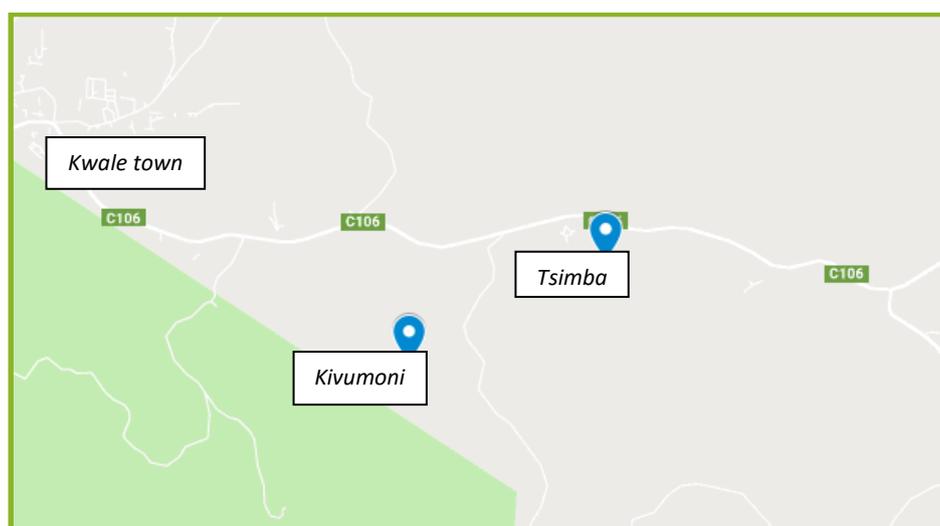


Source: Google Maps

**Figure 5 Map of Kaloleni and Kassava**

**Table 5 Settlements in Kwale County**

	<b>Tsimba Village</b>	<b>Kivumoni Village</b>
Location and access	<ul style="list-style-type: none"> <li>• 4 11 25.2S 39 30 49.1E</li> <li>• 29 km from Mombasa city</li> <li>• 7 km from county centre (Kwale Town)</li> <li>• 0.5 km from nearest sealed road</li> <li>• Less remote</li> </ul>	<ul style="list-style-type: none"> <li>• 4 12 05.3S 39 29 32.4E</li> <li>• 32 km from Mombasa city</li> <li>• 7 km from county centre (Kwale Town)</li> <li>• 2 km from nearest sealed road</li> <li>• Less remote</li> </ul>
Transport options	<ul style="list-style-type: none"> <li>• Motorcycles, three-wheelers and public minibuses easily available</li> <li>• Accessible year-round due to sealed road</li> </ul>	<ul style="list-style-type: none"> <li>• Motorcycles are the predominant mode of transport</li> <li>• Very few three-wheelers and public minibuses</li> <li>• Accessible year-round by motorcycle. Other modes can be difficult during rainy season</li> </ul>
Population	<ul style="list-style-type: none"> <li>• 10,000 people approx.</li> <li>• Mijikenda and Kamba are the main ethnic groups</li> <li>• Balanced population in terms of age</li> </ul>	<ul style="list-style-type: none"> <li>• 7,000 people approx.</li> <li>• Mijikenda and Kamba are the main ethnic groups</li> <li>• Young population</li> </ul>
Economy	<ul style="list-style-type: none"> <li>• Agriculture</li> <li>• Small business / petty trading</li> </ul>	<ul style="list-style-type: none"> <li>• Agriculture: predominantly maize</li> <li>• Many young men employed as motorcycle taxi riders</li> </ul>
Recent development	<ul style="list-style-type: none"> <li>• Upgrading of some of the rural roads</li> <li>• A referral hospital level 4 was recently opened in Kwale Town</li> <li>• Opening of a local police post has improved security</li> <li>• Plan International are active in the local area</li> </ul>	<ul style="list-style-type: none"> <li>• Improvements to rural roads. Combined with the availability of motorcycle taxis, this has greatly improved access</li> <li>• Recent introduction (2018) of three-wheelers, used for transporting passengers</li> <li>• A referral hospital level 4 was recently opened in Kwale Town</li> </ul>
Local issues	<ul style="list-style-type: none"> <li>• High rates of teenage pregnancy and girls marrying when very young</li> <li>• Drug abuse among young men</li> <li>• Street children and beggars</li> <li>• Women prefer to use three-wheelers than motorcycles, for cultural reasons</li> </ul>	<ul style="list-style-type: none"> <li>• High rates of poverty</li> <li>• No electricity</li> <li>• High rates of teenage pregnancy and girls marrying when very young</li> <li>• Drug abuse among young men</li> <li>• Fear of crime, including theft and rape</li> </ul>



Source: Google Maps

**Figure 6 Map of Tsimba and Kivumoni**

### 2.4.2 Survey respondents

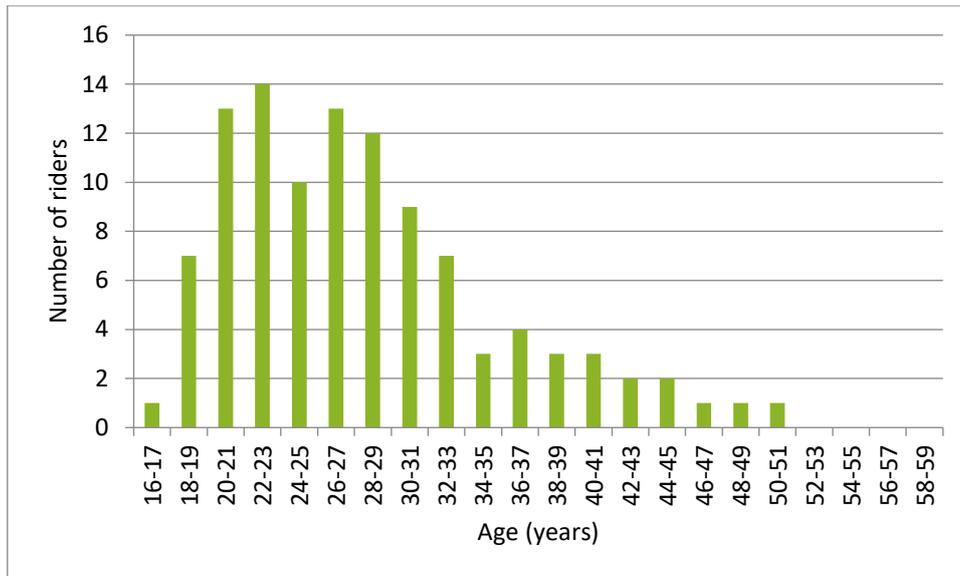
A total of 282 questionnaires were completed across the eight different Kenyan settlements. Table 6 shows the breakdown of the survey respondents.

**Table 6 Survey Respondents, Kenya**

	Motorcycle taxis				Motorised three-wheeler taxis				Non-users
	Riders	Passengers	Vehicle owners	Freight owners	Riders	Passengers	Vehicle owners	Freight owners	
Number of Respondents	102	100	23	22	2	6	0	3	24

It was notable that the survey team were able to locate very few motorised three-wheelers being used in the survey locations.

Figure 7 shows the age profile of the motorcycle and three-wheeler taxi riders.



**Figure 7 Age profile of riders interviewed, Kenya**

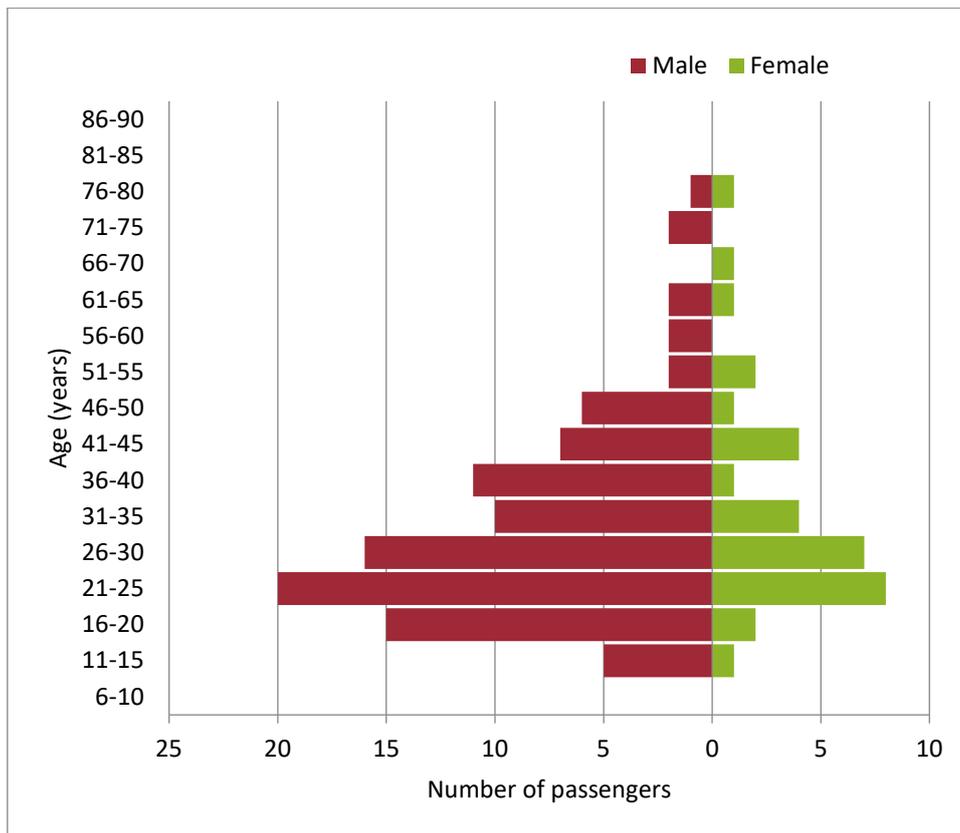
The chart shows that the majority of riders who were interviewed were between 20 and 30 years. They had an average age of 28 years. Of the 106 riders interviewed, all were male.

Fifty-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. However, the Kenyan riders had the highest education levels of the four study countries with 38% having completed secondary school and over 7% having completed university.

Fifty-four percent of riders said that they are members of a motorcycle taxi association – the highest across the four countries.

Eighty-five percent of all riders said they own a mobile phone in working order, and 45% of all riders said that they have access to internet on their phone.

Figure 8 shows the ages and gender balance of passengers.



**Figure 8 Age profile and gender of passengers interviewed, Kenya**

The chart shows that the majority of passengers were male and under 30 years old. The average age of female passengers interviewed was 34 years, and the average age of male passengers interviewed was 32 years. Sixty-nine percent of passengers interviewed were male, and 31% were female. This is different from other countries in the study, which showed a wider spread of ages and a more equal gender balance. Two percent of passengers interviewed were observed as having a form of disability.

Eighty-nine percent of passengers said that they owned a mobile phone in working order, with 47% having access to the internet.

The majority (70%) of survey respondents said that their overall opinion of motorcycle taxis is 'Excellent' or 'Good'. Only 4% said 'Very bad' or 'Bad', with the remaining 26% being ambivalent.

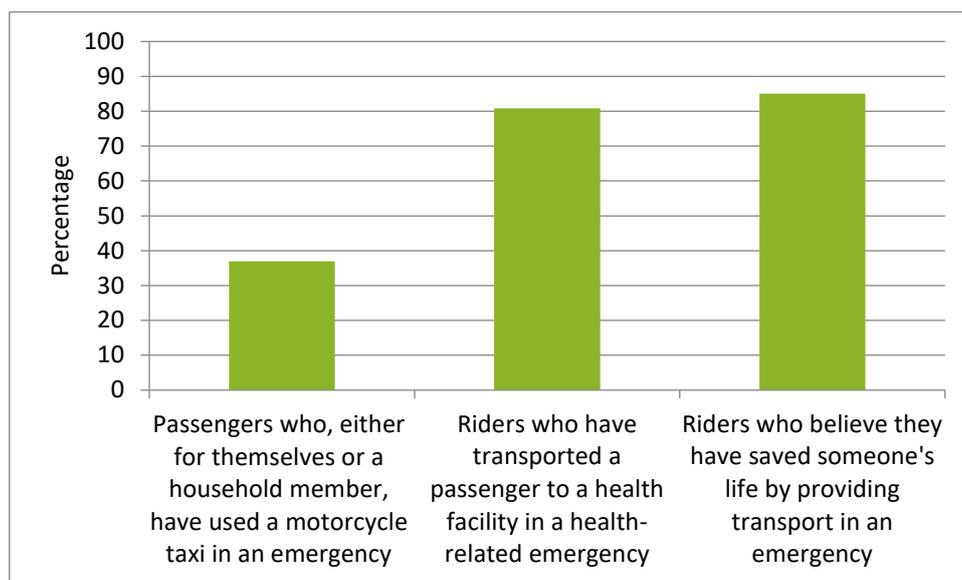
### 2.4.3 Access and mobility

Ninety-seven percent of passengers said it was either 'very easy' or 'quite easy' to access a motorcycle taxi and no passengers said it was 'very difficult'. The most common way that passengers summon riders is by mobile phone. Passengers said they value riders who they know and trust and who ride safely. They also value riders who charge a 'cheap price', who look 'respectable and sober' and someone 'older'.

Passengers said that the 'best thing about motorcycle taxis' is that they are convenient/easy (43%), they provide access where other vehicles cannot go (16%), they generate employment (11%) and they are fast (10%). The survey has also revealed that in some areas, motorcycles are the only type of motorised transport available.

The results of the survey show that motorcycle taxis are providing access to vital health services for rural communities, with 67% of passengers interviewed saying that they had used a motorcycle taxi to access a health facility in a non-emergency situation. Eighty-eight percent of motorcycle taxi riders said that they transport people to health facilities for non-emergency cases.

Motorcycle taxis are also used in emergency situations, as is shown in Figure 9. As is also the case in the other countries in this study, rural Kenya has limited ambulance services, especially between the home and the first level health centre.



**Figure 9 Use of motorcycle taxis in an emergency in Kenya**

Thirty-seven percent of passengers said either they or a member of their household had used a motorcycle taxi in an emergency, with the main reasons for emergency travel being reported as pregnancy related (25%), pneumonia (11%), severe diarrhoea (8%) and other illnesses/injuries.

Eighty-one percent of motorcycle taxi riders reported that they had transported a passenger to a health facility in an emergency. Thirty-six percent of these emergency trips were reported by riders to be for women during pregnancy, therefore providing transport to a vulnerable group at a crucial moment. Other reasons for emergency trips cited by riders included for people involved in a road crash (15%) and people suffering from pneumonia (6%).

While this is rider perception and has not been verified, 85% of riders believe they had saved a life by providing transport in an emergency.

As well as to access health facilities, survey results show that motorcycle taxis are an important mode for transporting freight. Of those who use motorcycles for this purpose, 72% were male. They were mainly farmers or business people who value the service for being convenient and fast and going where other vehicles cannot go. Among this group, most people contacted the motorcycle taxi operator by mobile phone. The main items being transported by motorcycle taxi were agricultural produce or items for sale in a shop.

***Motorcycle taxis 'open areas for business'***

One rider in Kenya explained a benefit of motorcycle taxis, as well as a challenge:

*"Motorcycles have opened up the area for business due to fish and flower farming, despite the poor state of roads."*

Passengers also use motorcycle taxis to travel to work and for social engagements.

Among people who said that they do not use motorcycle taxis, the most common reasons were related to safety: 42% said they were concerned for their personal safety, and 21% said they were afraid of crashing. Thirteen percent said that they have their own means of personal transport, while 8% said that they were unable to afford to use motorcycle taxis, and a further 8% said that they were physically unable to use them.

#### 2.4.4 Economics and finance

Motorcycle taxis are used to generate income for both riders and owners in rural areas. The majority of riders (68%) 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 KES 2,685 (GBP 20.17). Using the latest Gross National Income figures from the World Bank ([data.worldbank.org/country/kenya](http://data.worldbank.org/country/kenya)), average weekly income in Kenya in 2017 was around GBP 21.27 – although it should be noted that this includes both rural and urban populations. At GBP 20.17 for riders, the survey found that their weekly profits were around 95% of the national average.

The average reported daily profit – after paying all expenses – for riders in Kenya, according to the riders themselves, was around GBP 3.76. This compared to an average daily profit of GBP 2.02 that the riders reported earning from their previous jobs. Twenty one percent of riders said that they were a student directly before becoming a motorcycle taxi rider.

Of the 54% of riders who said that they belonged to a motorcycle taxi association, the majority paid both a one-off joining fee (an average of GBP 3.79) as well as a monthly membership fee (also of an average of around GBP 3.79). These monthly costs were the highest of the four countries. However, members of associations were also found to have earned far higher average profits in the last seven days: around GBP 27.50, compared to non-members with an average profit in the last seven days of GBP 11.30. This is shown in Figure 10.

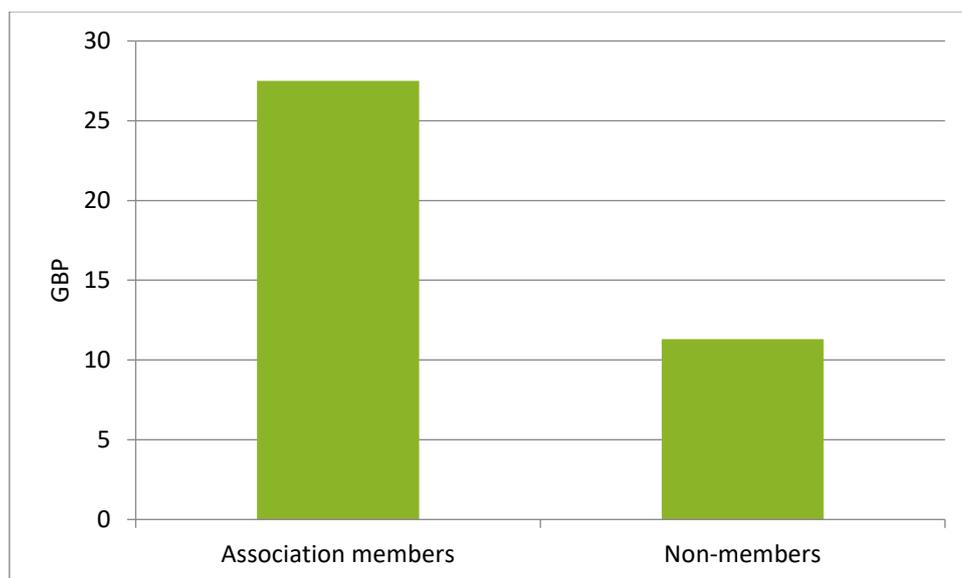


Figure 10 Rider profit in last seven days in Kenya

Sixty percent of riders said that they owned their own vehicle, while 36% said the vehicle they use was owned by a friend or family member. Very few riders were in a purely commercial arrangement with the owner of a vehicle.

The average purchase price of the motorcycle was around GBP 757, and 84% of riders who owned the vehicle themselves had bought it as a one-off, lump-sum purchase.

Riders said they pay an average of GBP 0.45 per day on official fines to police and/or other government officials. This is the highest amount of the four project countries, and for the majority of riders (excluding the small portion of riders who rent the vehicle), official fines constitute the second highest category of expense related to day-to-day operations (after fuel, at GBP 1.73 per day). Riders also pay an average of GBP 0.11 in unofficial bribes or ‘dashes’.

For passengers, the average cost of a trip is GBP 0.11 per kilometre. The average cost of transporting freight by motorcycle is GBP 0.0095 (0.95 pence) per kilogram kilometre.

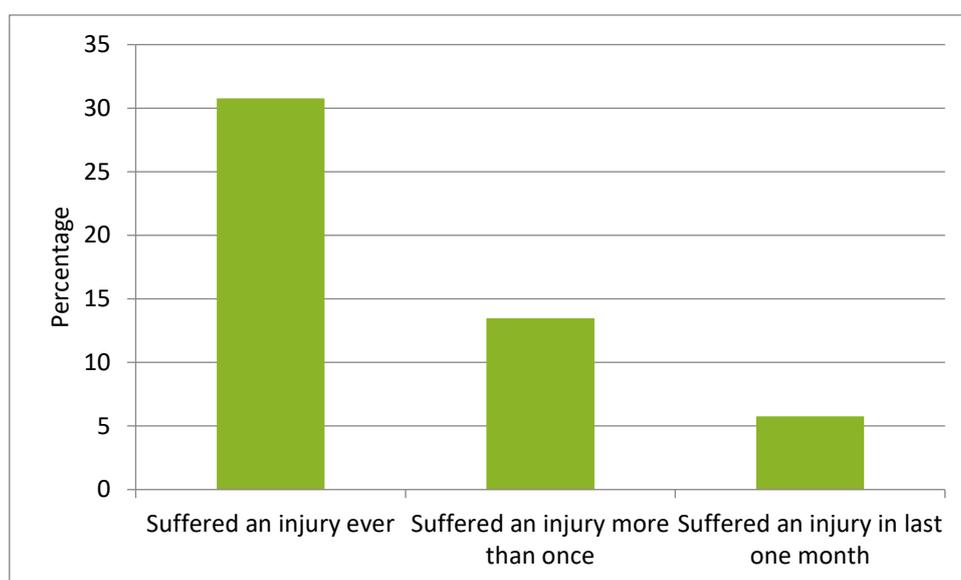
During both night-time and when it is wet, the average cost of a trip increases by around 50% in comparison to when it is day-time and when it is dry, respectively.

### 2.4.5 Injuries

Fifty-two percent of riders and 43% 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. While these were both the most common responses to this question, the percentage of respondents giving this answer was lower than for the other countries in the study. However, it emerged that both riders and passengers were also concerned about the safety of other road users, apart from those travelling on motorcycles (such as pedestrians and children).

In the study, data was collected only on injuries which riders said occurred while they were riding a motorcycle or three-wheeler taxi on a rural road, and which resulted in them either losing money, requiring medical attention or affecting their family life.

Figure 11 shows the frequency of injuries suffered by motorcycle taxi riders.



**Figure 11** Frequency of motorcycle taxi rider injuries in Kenya

The chart shows that 31% of motorcycle taxi riders said that they had suffered an injury ever. This was the lowest of the four countries involved in this study. Thirteen percent had suffered more than one injury, and 6% had suffered an injury within the last one month. Three of the riders had been injured on four separate occasions.

In the case of the worst injury suffered by riders within the last three years, 53% of riders said the most severely injured part of their body were the legs, feet or pelvis. The head, face or neck was the most severely injured part of the body in 6% of injuries. Seventy percent of all injuries were described by the rider as ‘Moderate’, with 13% as ‘Severe’ and 17% as ‘Minor’. Seventy-seven percent of the injuries sustained by riders were cuts, scrapes, scratches, sprains, strains or bruises.

Again, looking only at the worst injury suffered by riders within the last three years, 81% of riders missed at least one day of normal activity as a result of the injury. Of these, 62% missed more than one week of normal activity. One rider missed over one year. Twenty-two percent of riders said that they are still suffering some physical impact from the injury, and 3% said that they are still suffering some psychological impact. None said that they are still suffering any economic impact.

Of the riders who had suffered an injury, only 23% had been carrying a passenger at the time of the crash that resulted in the injury. ‘Single vehicle crash / fall’ (33%) was the most common type of incident, although ‘other road user action’ (30%) was the most common stated cause. Forty-three percent of riders

said that they had been travelling at over 50 kph at the time of the crash, and 13% had been travelling at over 80 kph.

Fifty-seven percent of riders said they were wearing a helmet at the time of the incident.

Eight percent of passengers reported that while travelling on a motorcycle taxi in a rural area they had suffered an injury that either resulted in them losing money, requiring medical attention or affecting their family life. Again, this was the lowest of the four countries involved in the study.

Passengers cited their injuries as cuts, scrapes and scratches, sprains, bruises, dislocation and burns. No passengers said that their injuries were severe despite none of them wearing a helmet at the time of the crash. Passengers judged 'rider error' to be the most common cause of crashes (43%).

Of the interviewees who said they very rarely or never use motorcycle taxis, 21% said that this is because they are afraid of crashing.

#### 2.4.6 Health issues

Twenty percent of riders said that they have suffered from health issues, which they attribute to riding a motorcycle in a rural area. Respiratory problems, eye problems and general pain were cited as the leading issues, with cold and dust being the leading causes.

This was explored in greater detail through focus group discussions with motorcycle taxi riders, and is covered later in this section.



Figure 12 A motorcycle taxi rider wrapped up against the cold in Nganoini

#### 2.4.7 Crime and personal security

Fourteen percent of riders and 9% of passengers think that the worst thing about motorcycle taxis is something related to crime.

Eight percent of riders said that they had been a victim of physical crime, verbal abuse or threats. This was the lowest of the four countries involved in the study. Riders said that crimes and abuse were mainly carried out by their passengers and some were carried out by other motorcycle riders. Robbery using force was the most common type of physical crime suffered by riders.

Meanwhile, 2% of passengers said they had been a victim of verbal abuse.

Of the interviewees who said they very rarely or never use motorcycle taxis, 42% said that this is because they fear for their personal security.

#### 2.4.8 Access to services and protective equipment

Thirty-three percent of riders described themselves as 'self-taught' with others being taught by friends and family. However, 20% said that at some point they had received formal training – by far the highest proportion of the four countries. The main reason cited for not undertaking formal training was cost, followed by a perception that there was no need for the training. Only 30% of riders said they had a driving licence and 24% had official paperwork to operate as a motorcycle taxi. Only 46% had insurance, although this is higher than in the other study countries.

##### ***Obtaining licence 'through the back door'***

One rider in Kenya explained that he obtained his licence fraudulently:

*"I paid KES 18,000 [around GBP 135], but I did not go to driving school. I obtained my driving licence through the back door."*

Only 26% of riders reported that they 'always' wear a helmet. Forty-nine percent of riders said they sometimes wear a helmet and 15% said they never wear a helmet. Sixty-eight percent of riders advised they own their own helmet. Riders advised that the leading reason they do not wear helmets is that they are uncomfortable and/or hot. Restrictions of hearing and/or vision were also cited. It is likely that there are issues with quality and fit of helmets that are locally available.

Seventy-one percent of riders said that passengers never ask for a helmet. Only ten percent of passengers said that they 'always' wear a helmet and fifty-four said they 'never' wear a helmet. The main reason provided for not wearing a helmet is that riders do not provide them (75%). Passengers described enforcement around helmets as 'weak' (85%).

## 2.5 Investigations into the Potential of Technology to Enhance Safe Motorcycle and Three-Wheeler Use

### 2.5.1 Mobile phone technology

The mobile phone technology identified as being used in relation to motorcycle and three-wheeler taxis in Kenya 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.

Companies that offer microfinance loans for motorcycle taxi riders to buy their own motorcycle use bulk SMS messaging to promote their services to riders.

### ***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.

Many ride-hailing apps exist in Kenya, including the global giants Uber and Taxify, and local equivalents such as Little Cabs, Mara Moja and Mondo Ride. The focus of most of these is on regular four-wheel car taxis, although they also offer motorcycle and three-wheeler taxi services. One – Savvy Riders – is exclusively for motorcycle taxis. Several of the Kenyan firms have extended their operations into neighbouring countries, including Little Cabs in Uganda and Rwanda, and Mondo Ride in Tanzania and Uganda.

Each of the apps offers different features, attempting to set them apart from their competitors. For example, Little Cabs, which is backed by telecoms operator Safaricom, allows female passengers to specifically request a female rider between 6pm and 6am, and it also has a hotline that can be used to request help in case of a crash or other issue. Savvy Riders markets itself as providing a higher level of safety than independent riders and riders registered with other apps – they provide their riders with safety training and personal protective equipment that is more robust than that commonly used in Kenya.

All of the ride-hailing apps 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 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.

### **2.5.2 Other forms of technology**

CladLight is a Kenyan company that manufactures wearable gadgets and lighting to increase riders' visibility during both day and night. Gadgets generally use reflectors and LEDs (light-emitting diodes) to show when a rider brakes or wants to turn left or right. Lights fitted on helmets and jackets are connected to the motorcycle indicator lights wirelessly.



**Figure 9 LED technology produced by Clad Light**

At the time of this research, the founder of the company was still making and selling gadgets, but working fulltime for the company SafeBoda in Uganda. Part of his decision to relocate from Nairobi to Kampala was poor sales of CladLight's products in Kenya. This could be attributed to the high cost of items - ranging between around GBP 25 for some lighting systems and GBP 140 for jackets.

## **2.6 Investigations into Health Impacts of Rural Motorcycle Taxi Use**

The discussions with motorcycle taxi riders and interviews with health workers covered topics including health issues directly associated with riding a motorcycle taxi, lifestyle factors perceived to affect riders' health and riders' ability to operate their motorcycles safely, and crashes and injuries. Riders were often keen to explain their experiences of helping passengers with day-to-day health issues as well as in health-related emergencies.

### **2.6.1 Riders' health issues**

Almost all riders mentioned health problems as an occupational hazard of riding motorcycle taxis in rural areas. Common complaints included pain in the lower back and pain and numbness in legs and hands (associated with sitting for a long time and/or vibrations riding on rough roads), and chest infections (associated with the cold, wind and dust). Other complaints included eye problems (associated with dust and bright sunlight), headaches and hearing problems (associated with vibrations on rough roads and ill-fitting helmets), and to a lesser extent skin infections (usually associated with sharing helmets).

Fatigue and exhaustion were also cited as issues by many of the riders.

Other studies have linked sexual promiscuity to motorcycle taxi riders due to their regular income, freedom of movement, and capacity to offer women and girls free trips (Nyanzi *et al*, 2009; Nkede Njie, 2012). Frequent casual and unprotected sex is associated with the spread of HIV/AIDS and other sexually transmitted infections, as well as teenage pregnancies, and hence has wide-ranging health (and social) impacts. However, many of the riders in this study did not agree that motorcycle taxi riders are more promiscuous than the general population, and felt these accusations to be unfair.

Riders reported that crashes - mostly minor, but also some more serious - are very common. Many of these were described as single-vehicle crashes resulting from loss of control. Older riders felt that most crashes occurred among young riders who were less experienced. Several riders commented that most new riders receive no more than a few tips from their friends before starting work and pointed out that the legal requirement to have formal training was not enforced.

In the case of a crash, riders reported being unable to continue working – both riding a motorcycle taxi and farming - for days, weeks or even longer, hence having economic as well as health impacts. One rider also pointed out that being involved in a crash can undermine a rider's reputation as a safe driver among potential clients, affecting his capacity to earn money in the short- to medium-term.

A number of riders described the different efforts that they take to mitigate against health issues and injuries. Older riders in particular are more willing than younger riders to wear helmets, despite the fact that they are often said to be ill-fitting, to obscure vision and to be expensive. Riders often wear a hat underneath the helmet to create a tighter fit and so reduce vibrations, and they also believe that the hats can reduce the risk of skin infections when sharing helmets with other people.

Some older riders also explained how they wear sunglasses to reduce dust and glare, and knee pads and multiple layers of clothing to reduce the wind and cold and to minimise the severity of injury in the case of a crash. Some of the older riders also indicated that they limit the number of hours they work so they do not get tired. Younger riders are far less likely to make any efforts to mitigate against health issues and injuries.

Health workers interviewed as part of the research confirmed the wide range of health problems for which riders sought treatment. They attributed the muscular pain and aches experienced by riders to the poor quality roads, conditions that were compounded by the lack of (or inadequacy of) shock absorbers on many motorcycles. They acknowledged that erectile dysfunction was common (mostly reported by wives asking how they could help their husbands), but felt that there was inadequate information available on the relationship between this condition and motorcycle use.

Health workers mentioned other lifestyle issues that impact on riders' health and their capacity to safely operate their vehicles. These included use of drugs (such as marijuana and khat) and alcohol (especially hard liquor). Some riders were thought by the health workers to use these to ease pain, or to ease stress and other worries. These issues were not mentioned by any of the riders participating in the research.

At Kwale Level 4 Hospital, which provides services for communities in the rural areas surrounding Kwale town, as well as the town itself, health workers said that a lack of training contributes to the high numbers of crashes, and a failure to wear protective clothing increases the severity of injuries. It was evident that some health workers assume riders are at fault when they have been involved in a crash and hence are to blame for their injuries. This may affect their willingness to provide respectful healthcare.

### **2.6.2 Use of motorcycle taxis for day-to-day health issues and in health-related emergencies**

From the discussions with riders and interviews with health workers, it was clear that motorcycle taxis play a vital role in transporting patients to and from health facilities; all riders said that their vehicles had been used for this purpose.

Pregnant women and women with small children are the most frequent users of motorcycle taxis for health-related trips. Riders also said that they provide services for patients with chronic health conditions (such as diabetes, HIV/AIDS, high blood pressure) and for elderly people with reduced mobility. Aware of the needs of these passengers, older riders in particular mentioned that they tend to take more care when transporting vulnerable people to health facilities, driving slowly and avoiding bumps in the road.

Although acknowledging that motorcycles are not always a comfortable or safe mode of transport for sick patients or heavily pregnant women, riders pointed out that the vehicles were often the only convenient and affordable form of transport available, and so play an important, if not vital, role in the health referral system. Motorcycle taxi riders reported that they are also involved in prescription drugs distribution, by collecting drugs from dispensaries and health centres and distributing these to patients.

Motorcycle taxis are also frequently used in health emergencies, and were described by one group of riders as 'a modern ambulance'. Passengers travelling for health-related reasons commonly require a second passenger to accompany them on the same motorcycle. Many of the riders were able to cite examples of how they had transported patients in an emergency, including women in labour, accident victims and severely sick children. Riders explained how they had found themselves in situations where they have

provided advice or first aid to injured or sick passengers, including assisting women to give birth at the roadside.

#### ***Motorcycle taxis: A 'modern ambulance'***

A group of young riders recounted how they had transported passengers in health emergencies. One rider was rushing a pregnant woman to the hospital, but she ended up delivering by the side of the road, assisted by the family member who had accompanied her; one had taken a passenger with a broken leg to a health facility; another had transported a child who had been taken seriously ill at night. In the absence of a formal ambulance system in rural areas, motorcycle taxis are often the only choice for many people to access health care in an emergency.

Health workers indicated that they rely heavily on motorcycle taxis to visit patients at home, to make other official visits, and to transport patients from lower to higher level health facilities in a context where ambulances are not available. Motorcycle taxis therefore seem to play an important stop-gap role in the health sector in a context where there are inadequate official vehicles to transport patients or health personnel.

### **3 Stakeholder Consultation**

A series of workshops was held in September 2018, to present the draft Country Discussion Papers and share the initial findings from the research activities. Firstly a 4-day workshop was held in Ghana, bringing two key government stakeholders from each of the four countries together with the project team. Secondly, a 1-day workshop was held in each of the four project countries, each one bringing together between 20 and 30 key local stakeholders.

#### **3.1 Draft Country Discussion Papers**

Upon completion of the Research Phase, four Country Discussion Papers were drafted – one for each country. These summarised the initial findings of the research, and were presented ideas for points of discussion at the stakeholder workshops.

The points for discussion arising from the research activities in Kenya were identified as:

- The critical importance of motorcycle taxis for rural transport
- The need to scale up rider training
- The opportunities for enforcement through associations
- The need to consider health issues of riders and passengers
- The need to support innovation in the motorcycle taxi sector

#### **3.2 4-Day, 4-Country Workshop**

The 4-day, 4-country workshop was held from Monday 3<sup>rd</sup> to Thursday 6<sup>th</sup> September 2018, in Ghana.

A summary of discussions at this workshop is included in the full Final Report for this project.

#### **3.3 1-Day Kenya Workshop**

The 1-day Kenya workshop was held on Tuesday 25<sup>th</sup> September, in Nairobi.

The workshop allowed the project team to present the initial findings of the different research activities, including comparisons between the four countries, and provided opportunity for questions to be asked and ideas to be shared. A list of attendees of this workshop is included in Annex 1.

### 3.3.1 Summary of workshop discussion

#### **Training**

With the initial analysis of the data having identified that, in comparison to the other countries in this study, Kenya had a higher percentage of riders who had first learned to ride through attending a course at a driving school, and also had the lowest percentage to riders and passengers who had suffered an injury, much of the workshop discussion was around rider training.

The General Manager of Pettans Driving School explained that they have been able to access funding from county-level government bursaries and community development funds to fund the training of rural riders. With this funding, they are able to offer training at a reduced price, recognising that riders in rural areas would otherwise not be able to afford to pay. He also explained that they are able to coordinate with motorcycle taxi associations, whose leaders arrange for members to attend training sessions.

The representative of Kenya Police stressed the need for training to cover laws and regulations – not only to explain to riders what the laws are, but also to explain the reasons behind the laws so that riders understand the benefits of adhering to them. He also gave his opinion that training should be delivered in a manner that is appropriate to the local culture, recognising that Kenya has many different ethnic groups with different cultures. He emphasised the need to involve local chiefs in the arrangements for training activities.

It was agreed that sensitisation needs to be carried out at the local level, by local people who understand the culture and ways to communicate effectively with the diverse groups of people across Kenya. Local leaders and community-level engagement was seen to be very important. It was also noted that laws need to be translated into local languages.

There was also agreement that awareness-raising on motorcycle-taxi related issues should be included in secondary school education. This would not extend to rider training, but rather focus on issues such as how to be safe as a passenger and what to look out for from your motorcycle taxi and rider. It was suggested that handling such topics carefully could prevent school drop-outs (by youths who see motorcycle riding as more attractive than staying in education), and address some of the safety and lifestyle concerns.

#### **Enforcement**

The Manager of Strategies and County Coordination at the NTSA advised that strong enforcement is needed to act as a deterrent against failure to adhere to laws and regulations. It was noted that there is a Chiefs Act, which governs the powers of local chiefs to enforce certain laws. It was recommended that this law be reviewed and amended to give chiefs the power to enforce motorcycle-related by-laws.

There has been success in engaging traditional leaders in this way and enforcing by-laws to reduce gender-based violence and a similar strategy could be employed.

#### **Formal registration of riders**

BAK is currently working to register all motorcycle taxi riders. They have a card with an electronic chip and QR code (a 'Quick Response Code', similar to a two-dimensional barcode), which can be scanned to reveal details such as next of kin, insurance, stand, etc. The police recognise this will be useful to improve enforcement, but the challenge is funding to be able to implement this nationwide.

The registration of riders is seen as part of a wider need to professionalise the motorcycle taxi industry. This is seen as a key way of improving relationships between authorities and riders, changing current riders' perceptions that they are victimised by police and changing current perceptions among some officials, and some members of the public, that motorcycle taxi riders are reckless.

#### **Health**

Riders' health conditions were discussed, with the study revealing that 20% of riders in Kenya saying that they have suffered from a health condition that they attributed to working as a motorcycle taxi rider. Participants suggested that motorcycle taxi associations should sensitise riders and link them with health

services, that the availability of personal protective equipment should be increased in rural areas, and that roads and tracks should be improved to minimise potholes, bumps, corrugations and dust.

### 3.3.2 Workshop evaluation

An evaluation of the workshop was carried out. The results of this evaluation are included in Annex 2 of this report.

## 4 Conclusions and Recommendations

The project's full Final Report contains detailed discussion that pulls together the findings from the four project countries, and provides recommendations.

The discussion covers how motorcycle taxis are of critical importance for rural transport in all four countries, and explains how rural communities in Kenya – in comparison to the other three countries – appear to be benefitting the most from motorcycle taxis. For example:

- In Kenya, motorcycle taxis are highly popular, highly available and highly profitable to the riders.
- Kenya has the highest proportion of riders who have a driving licence and insurance.
- It has the highest proportion of riders who first learned to ride in a driving school and the highest proportion of riders who are members of a motorcycle taxi association.
- Kenya has the lowest proportion of riders who have ever been injured and the lowest proportion of riders who describe their worst injury as severe.

Still, the majority of riders in Kenya are untrained, have no licence and no insurance, and are not members of an association.

Of the recommendations made in the Final Report, the following are of particular relevance to Kenya:

- Careful consideration should be given to the most effective legal framework for allowing motorcycle and three-wheeler taxis to operate on low volume rural roads, without leading to their unmanaged use on highways and in urban or peri-urban areas. This may involve the use of local bylaws.
- Driving schools' capacity to operate in rural areas should also be increased, for example through the provision of local government bursaries.
- The government should require that motorcycle taxi riders belong to associations, support the continuation of the work by the Boda Boda Safety Association of Kenya, requiring motorcycle taxi riders to belong to associations. Associations should be supported and overseen by local government authorities, and supported through the adoption of the associations' manual developed as part of this project.
- Enforcement should be applied gradually, supported by sensitisation activities.
- The distinction between training and sensitisation must be understood. Sensitisation has a role to play, but is no substitute for training. Driving licences should not be issued to drivers who complete a session or course of sensitisation.
- Consideration of motorcycles should be required through guidance provided to local government engineers, as was the case with the Tanzanian Ministry of Works' Low Volume Roads Design Manual.
- Efforts should be made to reduce the risk and severity of crashes, including through training and use of personal protective equipment, especially helmets.

- Rural health workers should be trained in how to deal with motorcycle rider health issues.
- Research should be carried out into the use of motorcycles and three-wheelers in urban areas and on highways.

Kenyan regulation related to motorcycle and three-wheeler taxis is stronger than the other countries in this study, and the benefits that motorcycle taxis bring to rural communities appear to be more evident and disbenefits appear to be less evident in comparison to Ghana, Uganda and Tanzania. However, the continued strengthening of support for the sector – most importantly through bringing training to rural riders and supporting associations – will improve the operations of motorcycle and three-wheeler taxis, and will improve the lives of rural people.

The two manuals – one for motorcycle instructors and one for associations – which were developed through this project’s Tanzania-specific activities, are currently being standardised for use in other African countries and elsewhere. These will assist government and other stakeholders in strengthening training and improving the operations of associations.

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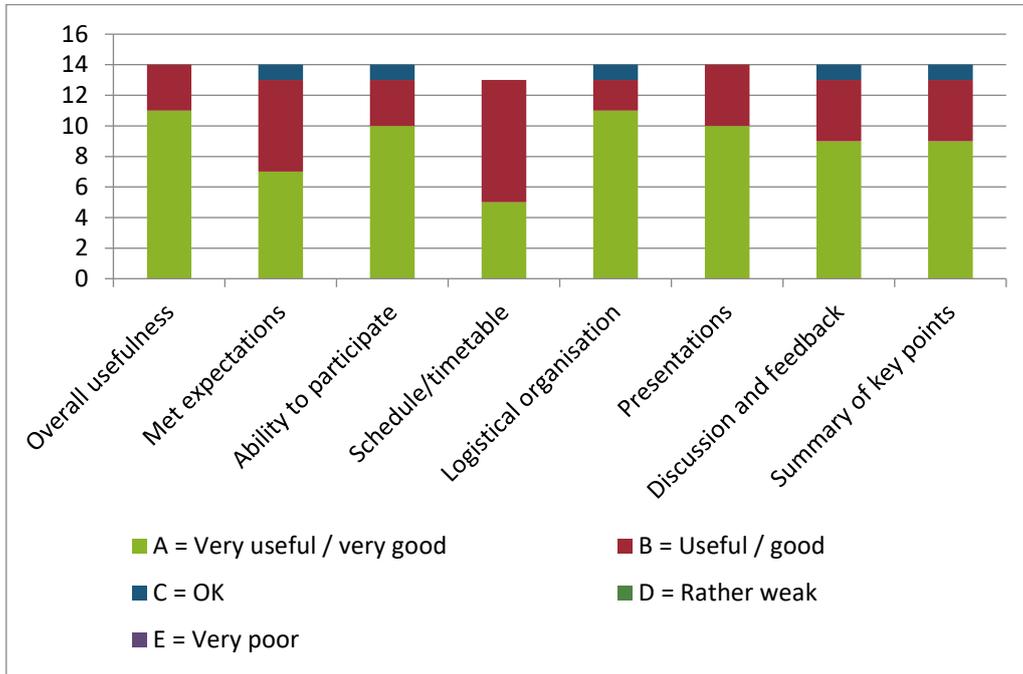
## Annex 1 1-Day Kenya Workshop Attendees

	Name	Organisation	Position
1	John Boino, on behalf of Joseph Omukuta	Kenya Police	Officer in Charge, Nairobi Area County
2	Rosemary Njogu	National Health Insurance Fund	Registration and Compliance Officer
3	Eng. Stephen Kogi	Materials Testing and Research Department	Chief Engineer
4	Eng. Gladwell Ng'ang'a	Kenya Rural Roads Authority	Engineer
5	Dr Gladwell Gathecha	Ministry of Health	Head of Violence and Injury Prevention
6	Samuel Musumba	National Transport and Safety Authority	Manager - Strategies and County Coordination
7	Javan Mwiti	Pettans Driving School	Group General Manager
8	Eva Mwai	North Star Alliance	Regional Director - East Africa
9	Mary Mwangi	Flone Initiative	Programmes Manager
10	Kevin Mubadi	Boda Boda Safety Association of Kenya	National Chairman / CEO
11	Alex Musembi	Boda Boda Safety Association of Kenya	Member
12	Caroline Mbugua	IDX	Research Executive
13	Francis Jaramba	Gitero community	Bodaboda association leader
14	Samuel Kingori	Ngainoini community	Local leader
15	Eric Wahome	Banda community	Bodaboda association leader
16	Simon Macharia	Karagita community	Bodaboda association leader
17	Abubakar Ngari	Kaloleni community	Bodaboda association leader
18	Joseph Fama	Kassava community	Local leader
19	Kevin Kariuki	Tsimba community	Bodaboda association leader
20	Meg Klahu Abdala	Kivumoni community	Local leader
21	Tom Bishop	Amend	Project Team Leader
22	Grace Muhia	Amend	Project Kenya National Expert

A representative of the Automobile Association of Kenya was invited, but did not attend the workshop.

## Annex 2 1-Day Kenya Workshop Evaluation

This chart shows the responses to the evaluation form completed by the participants in the one-day workshop. (It should be noted that several of the participants did not complete the evaluation form.)



All participants (100%) rated the overall usefulness of the workshop as 'Very useful' or 'Useful'.