Road Traffic Injury on Rural Roads in Tanzania: A population-based control study assessing Road Traffic Injury on rural roads in Tanzania and the effectiveness of road safety measures at reducing injury rates

Project Reference Number: AFCAP/GEN/060/G

Implementation of the Road Safety Programme for the Bago to Talawanda Road
v1.0, 31 January 2013

Prepared By: Tom Bishop, Deepani Jinadasa and Josh Palfreman
Prepared For: Gina Porter, AFCAP
This project was funded by the Africa Community Access Programme (AFCAP) which promotes safe and sustainable access to markets, healthcare, education, employment and social and political networks for rural communities in Africa.

Launched in June 2008 and managed by Crown Agents, the five year long, UK government (DFID) funded project, supports research and knowledge sharing between participating countries to enhance the uptake of low cost, proven solutions for rural access that maximise the use of local resources.

The programme is currently active in Ethiopia, Kenya, Ghana, Malawi, Mozambique, Tanzania, Zambia, South Africa, Democratic Republic of Congo and South Sudan and is developing relationships with a number of other countries and regional organisations across Africa.

This material has been funded by UKaid from the Department for International Development, however the views expressed do not necessarily reflect the department’s or the managing agent’s official policies.

For further information visit https://www.afcap.org

Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>INTRODUCTION</td>
<td>3</td>
</tr>
<tr>
<td>CONTEXT</td>
<td>3</td>
</tr>
<tr>
<td>PROJECT BACKGROUND</td>
<td>4</td>
</tr>
<tr>
<td>PURPOSE OF THIS REPORT</td>
<td>4</td>
</tr>
<tr>
<td>IMPLEMENTATION OF ROAD SAFETY PROGRAMME FOR THE BAGO TO TALAWANDA ROAD</td>
<td>5</td>
</tr>
<tr>
<td>Measure 1: Community Road Safety Awareness Week</td>
<td>5</td>
</tr>
<tr>
<td>Measure 2: Employment of Local Road Safety Champions</td>
<td>6</td>
</tr>
<tr>
<td>Measure 3: Motorcycle Driver Training and Licensing</td>
<td>7</td>
</tr>
<tr>
<td>Measure 4: Distribution of Motorcycle Driver Safety Equipment</td>
<td>10</td>
</tr>
<tr>
<td>Measure 5: Increasing Conspicuity</td>
<td>13</td>
</tr>
<tr>
<td>Measure 6: Road Safety Education in Schools</td>
<td>17</td>
</tr>
<tr>
<td>Measure 7: Community Road Safety Education</td>
<td>21</td>
</tr>
<tr>
<td>CONCLUSION</td>
<td>24</td>
</tr>
<tr>
<td>ANNEXES</td>
<td>25</td>
</tr>
<tr>
<td>Annex A – Knowledge Retention Survey for Motorcycle Taxi Drivers</td>
<td>25</td>
</tr>
<tr>
<td>Annex B – Knowledge Retention Survey for Primary School Pupils</td>
<td>27</td>
</tr>
</tbody>
</table>
Introduction

Context

Over 90% of the world’s traffic fatalities occur in low- and middle-income countries. Sub-Saharan Africa has some of the most dangerous roads in the world, with a road fatality rate of 28.3 per 100,000 people. It is estimated that the situation in sub-Saharan Africa will become worse in the upcoming years. By 2050, the population of Africa will grow by more than a billion people. Africa’s rate of motorisation is one of the fastest in the world, with thousands of vehicles added to the roads every day. Globally, the number of private motor vehicles is forecast to triple by 2050. Two-thirds of this explosive growth will take place in non-OECD (Organisation for Economic Cooperation and Development) countries such as those in sub-Saharan Africa.

With more vehicles, there will be a greater risk of injury and death, unless proper measures are taken to improve road safety. Official statistics from the Tanzanian Traffic Police show that in 2011, there was a total of 3,981 deaths and 20,802 injuries on Tanzania’s roads. However, due to the lack of a comprehensive data collection system, it is possible that these numbers are considerably lower than the actual figures.

Amend conducts a variety of activities relating to road safety in Africa including: scientific studies, advocacy for road safety, its School Area Road Safety Assessment and Implementation programme, the production of road safety events, road safety media campaigns, road safety education, the social marketing of reflector-enhanced schoolbags, project design and management, and more.

The Africa Community Access Programme’s (AFCAP) goal is to provide reliable access for poor communities in sub-Saharan Africa. This includes the construction and upgrading of low-volume roads designed to alleviate poverty in rural areas. So as to not undermine this work, these roads must not have a negative safety impact on communities. Currently, there is little evidence available about the impact that rural roads have on injury rates in sub-Saharan African countries.

While it is possible that rural roads pose safety risks to those who use them and the communities who live along them, the outcomes of this project will allow these road users and community members to be educated about the risks and adapt to the changes. This project will enable AFCAP to develop a strategy for ensuring the safety of rural communities.

The results of this research will be of use to those responsible for rural roads, transport, and public health in Tanzania, as well as contributing valuable data to the currently under-stocked library of sub-Saharan African road safety knowledge. The results will be shared directly with the Tanzanian Prime Minister’s Office for Regional Administration and Local Government, and the ministries of Works, Transport and Health, and will be submitted for publication in peer-reviewed public health journals.

The research will support the goal and objectives of the UN-endorsed Decade of Action for Road Safety, 2011 to 2020, and Tanzania’s National Road Safety Strategy.
Project Background

Amend is currently undertaking a research study into road traffic injury (RTI) on rural roads in Tanzania, under the African Community Access Programme (AFCAP). The title of the research study is ‘A population-based control study assessing road traffic injury on rural roads in Tanzania and the effectiveness of road safety measures at reducing injury rates’. It investigates road traffic injury rates on three low-volume rural roads: Bago to Talawanda, Kikaro to Mihuga and Lawate to Kibong’oto.

The study methodology is comprised of the following tasks:

- Task 1 – Identification of Sites
- Task 2 – Obtain Ethical Clearance
- Task 3 – Pilot Testing of Data Collection
- Task 4 – Collection and Analysis of Baseline Data
- Task 5 – Identification and Implementation of Road Safety Measures at the Bago to Talawanda Road
- Task 6 – Collection of Follow-Up Data
- Task 7 – Identification and Implementation of Road Safety Measures at Other Sites
- Task 8 – Data Analysis and Preparation of Final Report and Study Papers
- Task 9 – Dissemination of Results

Tasks 1 to 4 have been completed, and are detailed in the study’s Interim Report and Baseline Report.

Through the analysis of the baseline data collected during Task 4, and through community feedback sessions, we identified appropriate road safety measures to make up a community road safety programme for the Bago to Talawanda road. On 5th September 2012, we submitted to AFCAP a proposal for these road safety measures. This proposal was accepted by AFCAP on 13th September.

The identification of the road safety measures for the Bago to Talawanda road, and their subsequent implementation, comprise Task 5 of the study methodology.

Purpose of this Report

This report details the implementation of the road safety programme for the Bago to Talawanda road. As well as providing information on each of the measures carried out during the programme, it also presents results of an evaluation of the usage and retention of the materials distributed and knowledge taught during the programme, three months later.
Implementation of Road Safety Programme for the Bago to Talawanda Road

The road safety programme was implemented during September and October 2012. It comprised seven different measures, in line with the proposal accepted by AFCAP. Each of these measures is detailed below.

Measure 1: Community Road Safety Awareness Week

Implementation

Analysis of this study’s baseline data identified that general levels of road safety awareness are low among road users and community members of the Bago to Talawanda road.

The road safety programme was launched through a week of activities designed to raise awareness of road safety in the communities along the road and to promote the programme’s measures. These activities included:

- Enrolment of motorcycle drivers in a training course
- Community meetings to discuss road safety, including at public places such as markets and places of worship
- Promotional events in schools
- Initial distribution of some of the materials detailed in this proposal, such as the reflector-enhanced school bags
- Recruitment and training of Local Road Safety Champions

*Picture 1 – Community sensitisation during Road Safety Awareness Week*
Measure 2: Employment of Local Road Safety Champions

Implementation

Two members of the local communities (one Christian female and one Muslim male) were employed to be Road Safety Champions, to assist Amend staff with the implementation of the road safety programme.

We provided training to the Road Safety Champions, giving them an understanding of rural road safety, and enabling them to assist us with the implementation of specific measures of the road safety programme. Tasks performed by the Road Safety Champions during the course of the programme included:

- Day-to-day communication with motorcycle drivers participating in the training programme
- Assisting with training school teachers on road safety education
- Assisting with teaching school children road safety education, including teaching a road safety song
- Helping to distribute reflector-enhanced bags to school children
- Distributing posters and calendars in local communities
- Talking to members of the local communities about the importance of safe road behaviour

Having given them an understanding of rural road safety, we encouraged the Road Safety Champions to continue speaking to local people about the importance of safe road behaviour beyond the end of road safety programme.

Picture 2: Road Safety Champion, Siabo, mounting a teaching poster
Measure 3: Motorcycle Driver Training and Licensing

Implementation

The baseline data showed that those road users at greatest risk of being injured on the Bago to Talawanda road are drivers and passengers of motorcycles. Of all injuries identified in our baseline data for the three study sites, 65% were sustained by either the driver or passenger of a motorcycle.

The majority of motorcycle drivers who we spoke to during the baseline data collection exercise had received no formal training and had no driving licence.

In collaboration with the Tanzanian Vocational Education and Training Authority (VETA) and the Centre for Practical Development and Training, we provided motorcycle driver training to 100 ‘boda-boda’ (motorcycle taxi) drivers who regularly use the Bago to Talawanda road.

The training course included theoretical and practical elements, and covered the following topics:

- Road signs, signals and markings
- Road traffic law and regulations
- Defensive driving
- Motorcycle documentation
- Practical driving
- Customer care and entrepreneurship
- Preventive maintenance

![Boda-boda drivers during theoretical training](image)

Having completed the training course, we provided transport and accommodation for all of the drivers to enable them to undertake the necessary administrative tasks to obtain their driving licence from the nearest testing and licensing centre in Kibaha.
All 100 drivers passed the training course and obtained their driving licence.

**Usage and Retention**

In order to evaluate how effectively the drivers retained the lessons they were taught during the training course, a sample of eleven drivers was selected to take a simple knowledge retention survey. This survey assessed the knowledge of the drivers shortly after completing the course and again three months later, by administering a simple written test in the local language, Swahili, using the same questions both times.

A copy of the test, translated into English, is included in Annex A. The test was scored out of 29 points.

The results of the survey are shown in the table below.
### Table 1 – Results of boda-boda driver knowledge retention surveys

<table>
<thead>
<tr>
<th>Driver Name</th>
<th>Test Score – Immediately After Training</th>
<th>Test Score – 3 Months After Training</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rajabu Ramadhani Fungo</td>
<td>22</td>
<td>23</td>
<td>+1</td>
</tr>
<tr>
<td>Herman Albert Bugia</td>
<td>22</td>
<td>18</td>
<td>-4</td>
</tr>
<tr>
<td>Selemani Kassamba Kaunganya</td>
<td>26</td>
<td>22</td>
<td>-4</td>
</tr>
<tr>
<td>Eugen Paschal Mazuma</td>
<td>27</td>
<td>24</td>
<td>-3</td>
</tr>
<tr>
<td>Mwanahamisi Omary Saidi</td>
<td>25</td>
<td>23</td>
<td>-2</td>
</tr>
<tr>
<td>Hamisi J. Kimeza</td>
<td>23</td>
<td>22</td>
<td>-1</td>
</tr>
<tr>
<td>Mrisho Ally Makelele</td>
<td>17</td>
<td>20</td>
<td>+3</td>
</tr>
<tr>
<td>Ramadhani M. Samdeli</td>
<td>20</td>
<td>22</td>
<td>+2</td>
</tr>
<tr>
<td>Denis Joseph Mwingwa</td>
<td>22</td>
<td>20</td>
<td>-2</td>
</tr>
<tr>
<td>Idd Shida Amani</td>
<td>24</td>
<td>22</td>
<td>-2</td>
</tr>
<tr>
<td>Ally Omary Kisina</td>
<td>22</td>
<td>4</td>
<td>-18</td>
</tr>
</tbody>
</table>

The majority of the drivers (7 out of 11) scored between 60% and 85% on the knowledge retention survey given immediately after the training, with 3 out of 11 scoring above 85% correct, and one scoring below 60% correct. Three months later, most drivers had retained their knowledge at approximately the same level (within 10%), suggesting good retention of the information. For those drivers whose scores did not remain at approximately the same level, the scores decreased, which can be expected due to memory loss over time.

As well as the knowledge retention survey, we asked 50 of the drivers who completed the training course to fill in a simple questionnaire, to obtain their perceptions of the course. A selection of questions and answers from drivers’ perceptions are given here.

---

**Q: How relevant was the content of the training to your daily activities?**

**A: This has helped me to take extra precaution regarding safety while on the road and for my passengers as well.**

---

**Q: Did the training improve your knowledge of safety on the roads? If yes, how?**
A: Yes. Now I follow road traffic laws for example using indicators, how to and how not to overtake.

Q: How would you rate the quality of the programme: good, average or poor? What did you like/not like?

A: This programme is good and should continue to other drivers, you did well to train 100 drivers but what about all the other drivers that are causing the accidents and problems for us?

Overall perceptions from the drivers were positive, with indications that this training could also be useful for other boda-boda drivers in Tanzania.

**Measure 4: Distribution of Motorcycle Driver Safety Equipment**

**Motorcycle Helmets**

**Implementation**

The helmet-use surveys of the baseline data collection showed that over 50% of motorcycle drivers and passengers did not wear a helmet while riding along the Bago to Talawanda road. Of the 100 motorcycle drivers who participated in the training, only ten said that they owned a helmet themselves. 73 of the 100 said that they never wore a helmet, and all 100 said that their passengers never wore helmets.

As an incentive to the boda-boda drivers who participated in the motorcycle training, two helmets – one for themselves and one for a passenger – were distributed to each of the drivers who completed the course and obtained their licence.

The helmets distributed were the ‘Disco’ model, manufactured by the not-for-profit company Protec ([www.protec.com.vn/web/en](http://www.protec.com.vn/web/en)), in Vietnam. These helmets are specially designed for tropical countries, and several million have been distributed in South-East Asia. Several hundred have previously been distributed to the Tanzanian Police Force by the NGO Helmet Vaccine Initiative (Tanzania). The Disco conforms to international design and safety standards, and is currently being assessed by the Tanzanian Bureau of Standards as it writes the Tanzanian national standards for motorcycle helmets.

As well as distributing the helmets, Amend staff explained to the drivers the importance of using them and encouraging their passengers to do likewise. Our staff demonstrated how to adjust and attach the chin and head straps and how to remove the inner lining, so as to be able to wash it.

Upon receiving the helmets, drivers were required to sign to say that they would keep them and not sell them.

It should be noted that due to the length of time needed to have these helmets manufactured in Vietnam, shipped to Tanzania and cleared through the port in Dar es Salaam, they were not available
for distribution during the course of the road safety programme. They were distributed later, on 16\textsuperscript{th} and 17\textsuperscript{th} January 2013.

Usage and Retention

As the helmets were not distributed until mid-January 2013, we do not have information on their 3-month usage and retention at the time of producing this report.

However, information from traffic counts revealed that of 89 motorcycles seen riding on the Bago to Talawanda road before the helmet distribution, 10 drivers and 1 passenger were observed wearing helmets, while of 123 motorcycles seen four days after the helmet distribution, 43 drivers and 0 passengers were observed wearing helmets. This represents an increase in usage among drivers from 9\% to 35\%. Among passengers, helmet usage reduced from 1\% to 0\%.

It should be noted that, as motorcycle drivers are a very mobile population, we can have no certainty that those drivers seen in the traffic count are the same as those to whom we provided helmets.

Further information on usage and retention of the helmets will be collected in April 2013 and included in the final report for this study.
Back Supports

Implementation

During focus groups and key informant interviews carried out to identify the measures of the road safety programme, *boda-boda* drivers and passengers told us about injuries sustained when passengers, often trying to carry heavy loads, lose balance and either fall off the back of the motorcycle or cause the driver to lose control, causing the motorcycle to crash.

Back supports are designed to provide stability for motorcycle passengers, to help them to maintain balance.

In the proposal for the Bago to Talawanda road safety programme, we included the purchase and installation of 100 back supports. After having initially bought one as a trial, we bought a further 60 for the first round of distribution.

However, when we distributed back supports to *boda-boda* drivers, we encountered two problems. Firstly, many drivers, having previously told us that back supports would help them, in fact did not want them attached to their motorcycles, primarily because they thought that they would reduce their ability to carry multiple passengers or bulky loads. Secondly, due either to design or damage to the motorcycles, back supports could not be fitted to many of the motorcycles.

In total, we distributed and fitted only 26 back supports.

*Picture 6 – A back support being fitted to a boda-boda*
Usage and Retention

During follow-up usage and retention data collection three months after the road safety programme, all 26 drivers who had received a back support confirmed still having their back support attached to their motorcycles.

However, traffic counts carried out three months after the programme identified only one out of 123 motorcycles using the Bago to Talawanda road had a back support. This could be explained by the fact that motorcycle drivers are a highly mobile population, and the 26 who had received back supports perhaps did not pass along the road during the time of the traffic counts.

Measure 5: Increasing Conspicuity

Reflector-Enhanced School Bags

Implementation

Pedestrians are common along the Bago to Talawanda road, and with no designated footway, they share road space with motorcycles and other vehicles. The pedestrian counts of our baseline data collection showed that pedestrians use the road before dawn and after dusk, travelling between their homes and, for example, farms, water sources and schools.

In the dark, pedestrians can be difficult for other road users to see. Reflectors have been proven to make pedestrians up to 400% more visible, reducing their risk of being struck by other road users, including motorcycles. Studies have shown that reflectors improve visibility during daylight hours, as well as at dawn, dusk and night.

As part of the road safety programme, we distributed a total of 2,150 reflector-enhanced school bags – one to each pupil at the following six schools along the Bago to Talawanda road:

<table>
<thead>
<tr>
<th>School Name</th>
<th>Number of Bags Distributed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bago Primary School</td>
<td>599</td>
</tr>
<tr>
<td>Kiwangwa Secondary School</td>
<td>693</td>
</tr>
<tr>
<td>Ludiga Primary School</td>
<td>186</td>
</tr>
<tr>
<td>Msigi Primary School</td>
<td>288</td>
</tr>
<tr>
<td>Msinune Primary School</td>
<td>231</td>
</tr>
<tr>
<td>Talawanda Primary School</td>
<td>153</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2,150</strong></td>
</tr>
</tbody>
</table>

Table 2 – Bags Distributed at Schools

These bags are specially-designed for Africa – they are durable and attractive to children, and have reflectors on the back, the straps and the webbing to increase the visibility of children.

The bags were distributed at each school on the same day as road safety education lessons were delivered to pupils, and these lessons included teaching about the importance of using the bags at all times when walking along the roads, but especially at dawn, dusk and during the night.
Usage and Retention

Three months after the distribution of the reflector-enhanced school bags, we went back to the primary schools to count the number of bags that had been retained by the pupils. Although we found that many pupils were not present at school during the time of our follow-up, of those who were present there were very high retention rates of the bags. This is shown in Table 3 below.

Note that we were unable to collect this data for Kiwangwa Secondary School.

<table>
<thead>
<tr>
<th>School Name</th>
<th>Number of Bags Distributed</th>
<th>Number of Bags Retained / Number of Pupils Present</th>
<th>Percentage Retention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bago Primary School</td>
<td>153</td>
<td>50 / 53</td>
<td>94%</td>
</tr>
<tr>
<td>Ludiga Primary School</td>
<td>186</td>
<td>111 / 113</td>
<td>98%</td>
</tr>
<tr>
<td>Msigi Primary School</td>
<td>231</td>
<td>93 / 112</td>
<td>83%</td>
</tr>
<tr>
<td>Msinune Primary School</td>
<td>599</td>
<td>284 / 326</td>
<td>87%</td>
</tr>
<tr>
<td>Talawanda Primary School</td>
<td>288</td>
<td>172 / 174</td>
<td>99%</td>
</tr>
</tbody>
</table>

*Table 3 – Retention of Reflector-Enhanced School Bags*
We identified that several of the bags were dirty and damaged. This was especially the case for the bags of younger children, in Standards 1 to 3. The bags distributed to most of the older children, in Standards 4 to 7, were still in good condition.

**Reflective Stickers**

**Implementation**

While school bags are appropriate for distribution to children, bags are not commonly used by adults using the Bago to Talawanda road. For other types of vulnerable road user, including adults pedestrians and cyclists, we considered reflective stickers to be more appropriate and so included these within our proposal.

During the course of the road safety programme, we distributed a total of over 1,000 reflective stickers to pedestrians and cyclists. As well as distributing the stickers, Amend staff helped people to identify suitable places to stick them, such as on water buckets and on bicycle frames and handles. While doing so, we also explained the benefits of using reflective stickers.

**Usage and Retention**

In following up to check the condition of stickers distributed, we found them still stuck to many of the bicycles. We found no evidence of stickers stuck to other materials, such as plastic buckets.
High-Visibility Vests for Motorcycles

Implementation

Through the vehicle counts conducted during our baseline data collection, we identified that motorcycle drivers use the Bago to Talawanda road both before dawn and after dusk. Adding to this the dust thrown up by vehicles and tall grasses at the sides of the road, the vision and visibility of road users can often be impaired.

As part of the road safety programme, we distributed 100 high-visibility reflective vests to the boda-boda drivers who completed the driver training activity.

*Picture 9 – A high-visibility vest being given to a boda-boda driver*
Usage and Retention

A survey of the 100 motorcycle drivers who participated in the training course identified that none of them owned or used high-visibility vests prior to the road safety programme. Three months after the distribution of the vests, we asked the drivers if they still owned and used them, to which 91% responded that they used them ‘most of the time’.

However, the traffic count carried out on the Bago to Talawanda road three months after the road safety programme was implemented, identified that none of 123 drivers was wearing a high-visibility vest. But, as with the helmets and back supports, this can perhaps be explained by the fact that motorcycle drivers are a highly mobile population and perhaps those who received the vests did not pass along the Bago to Talawanda road during the time of the traffic count.

Measure 6: Road Safety Education in Schools

Implementation

Our baseline data collection revealed that members of the communities living along the Bago to Talawanda road, including children, do not regularly practice safe road behaviour. Road safety education is especially important for children, as their small stature and incomplete cognitive development makes them particularly vulnerable to road traffic injury.

As part of the road safety programme, Amend designed a road safety lesson plan tailored to the specific environment and risks faced by children who go to school along or close to the Bago to Talawanda road. This lesson plan included:
How to walk safely along a rural road, including walking facing the traffic
- How to identify safe and dangerous places to cross the road
- How to identify blind corners
- How to herd animals safely
- How to be seen by other road users, especially drivers
- How and why to use the reflector-enhanced school bags distributed as part of the road safety programme

Amend trained a total of 56 teachers at the six schools along the Bago to Talawanda road in how to teach this lesson plan to pupils. These teachers, supervised by experienced Amend staff, then taught a total of 2,150 pupils – the same pupils who received the reflector-enhanced school bags.

Teaching used both theoretical lessons in the classroom and practical lessons in the school yards. All teaching was carried out in the local language, Swahili.

To support the road safety education, we designed and printed small road safety posters and larger teaching banners. These featured drawings demonstrating safe and dangerous behaviour, produced by local artists. Examples of these drawings and their use are shown below.
Picture 12 – Drawing demonstrating the importance of walking off the road, where possible

Picture 13 – Drawing demonstrating how to be seen at night

Picture 14 – Road safety teaching poster
A total of 200 small posters and six larger banners were distributed at the six schools.

**Usage and Retention**

In order to assess the effectiveness of the road safety education, a sample of 141 pupils from across the five primary schools took part in a simple knowledge retention survey. The same questions were asked shortly before, immediately after and again three months after the lessons were taught. A copy of this survey is included in Annex B of this report. The test was scored out of 10 points.

The results of the survey are shown in the table below.

<table>
<thead>
<tr>
<th>Number of Questions Answered Correctly</th>
<th>Immediately Before Lesson</th>
<th>Immediately After Lesson</th>
<th>Three Months After Lesson</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-4 (poor to fair)</td>
<td>8</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>5-7 (good)</td>
<td>80</td>
<td>19</td>
<td>26</td>
</tr>
<tr>
<td>8-10 (very good)</td>
<td>53</td>
<td>119</td>
<td>109</td>
</tr>
</tbody>
</table>

*Table 4 – Results of Road Safety Education Knowledge Retention Surveys*

It can be seen from these test results that the road safety lessons substantially improved the pupils’ knowledge of road safety. The majority of scores fell in the average range prior to the road safety lessons, and increased to the very good range after the lessons were taught. In addition, many pupils had retained much of their knowledge three months later.
During the collection of data on usage and retention of the road safety programme’s materials, we observed that many of the small teaching posters which had been put up in the classrooms were missing or damaged. Teachers told us that some had fallen down because the surfaces of the walls they were applied to were dirty, and others had been damaged by pupils.

We found that all schools had retained their large teaching banners, and that these were in good condition. However, we found little evidence that these had been used for further teaching beyond the end of the road safety programme.

**Measure 7: Community Road Safety Education**

**Implementation**

In order to increase general road safety awareness among adults living alongside the Bago to Talawanda road, we held a series of ten community road safety events at five different locations. These sessions reached a total of 195 people.

Many of the messages taught focused on *boda-boda* safety, as motorcycle taxis are one of the most common modes of transport for people using the Bago to Talawanda road, and also one of the most dangerous.

To support the community road safety education, we produced and distributed 300 calendars for 2012/13, which displayed road safety messages. The reason for producing calendars rather than simple posters, was to give them extra value in the eyes of the community members, and so increase the likelihood that they will be kept, not discarded.
Examples of the images used on the calendars are shown below.

Picture 17 – Drawing demonstrating safe boda-boda use

Picture 18 – Drawing demonstrating dangerous boda-boda use

Picture 19 – Drawing demonstrating dangerous boda-boda use
**Usage and Retention**

We did not evaluate usage and retention of any element of the community road safety education.
Conclusion

The road safety programme at the Bago to Talawanda road is complete, and so Task 5 of the research study’s methodology has now been completed.

Task 6, the collection of follow-up data on road traffic injuries and road use, will be carried out in February and March 2013.
Annexes

Annex A – Knowledge Retention Survey for Motorcycle Taxi Drivers

Motorcycle Drivers Training: Knowledge Retention Test

Name: ____________________
Village: ____________________
Mobile number: _______________
Date: ______________________

1. Safety is categorised in four groups, those are;
   ____________________
   ____________________
   ____________________
   ____________________

2. When the motorcycle catches fire, you can stop it by using;
   a. Sand
   b. Water
   c. Towel
   d. All of the above

3. Which categories of liquid can cause fire easily?
   _______________________

4. Fire is the combination of three things, those are;
   ____________________
   ____________________
   ____________________

5. Road safety is divided into four main groups, those are;
   ____________________
   ____________________
6. There are six things to consider before you start using your motorcycle:

7. Fire in a motorcycle is always caused by:
   a. Lights of the motorcycle
   b. Hitting from engine
   c. Battery
   d. A leak in oil tank

8. You are supposed to change the oil every after:
   a. 300km travel
   b. Three months
   c. An accident
   d. Seven days

9. Five areas that you are supposed to slow down are:

10. Rearrange the following colours from the highest reflective;
    White and Yellow cloths
    Black and Blue cloths
    Things that reflects
Annex B – Knowledge Retention Survey for Primary School Pupils

Knowledge Retention Test

Name: 
School: 
Class: 
Date: 

Questions

1. It is safe to play on the road
   True or False?

2. White clothes help the drivers to see us easily
   True or False?

3. We are supposed to cross the road in a straight line because the distance becomes shorter than when crossing diagonally
   True or False?

4. The safe way to cross the road is to run so that you will not get hit by a car
   True or False?

5. We are supposed to walk facing traffic so that we can see oncoming vehicles hence escape from any dangerous situation
   True or False?

6. We are not to hold hands when crossing the road except with the younger ones when helping them to cross
   True or False?

7. It is safe to play on the road because the driver usually blow horns when they see you
   True or False?

8. We are to cross the road at the corner, junction or at the parked vehicles because the drivers can clearly see us
   True or False?

9. If there is no zebra crossing we are supposed to find a place where there is a straight line so as the drivers of vehicles can see us, and we can see oncoming vehicles
   True or False?

10. If there is no zebra/pedestrian crossing we are supposed to find a place where there is a clear vision
    True or False?