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# STEP CHANGE

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AN ACTION  
AGENDA ON SAFE  
WALKING FOR  
AFRICA'S CHILDREN

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**AMEND**



**FOUNDATION**

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# CONTENTS

<b>INTRODUCTION</b>	<b>1</b>
<b>EXECUTIVE SUMMARY</b>	<b>3</b>
<b>AFRICA: YOUNG, AT RISK, &amp; ON THE MOVE</b>	<b>7</b>
<b>THE HUMAN COST OF UNSAFE STREETS</b>	<b>19</b>
<b>WALKING: A RIGHTS AGENDA</b>	<b>33</b>
<b>STEP CHANGE: A SAFE JOURNEY FOR EVERY CHILD</b>	<b>55</b>
<b>REFERENCES</b>	<b>57</b>
<b>ABOUT</b>	<b>59</b>



INTRODUCTION P1



AFRICA: YOUNG, AT RISK, & ON THE MOVE P7



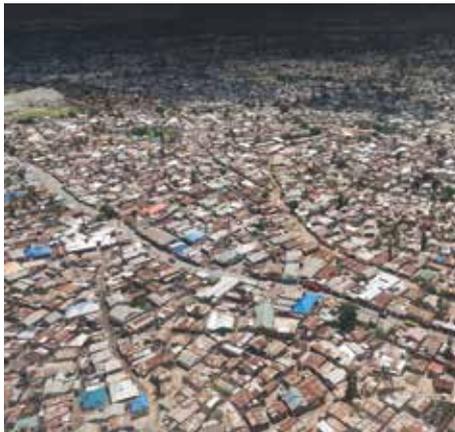
WALKING: A RIGHTS AGENDA P33



**EXECUTIVE SUMMARY P3**



**ZOLEKA MANDELA P5**



**THE HUMAN COST OF UNSAFE STREETS P19**



**CASE STUDIES P29**



**STEP CHANGE: A SAFE JOURNEY FOR EVERY CHILD P55**



**ABOUT P59**

# INTRODUCTION



To understand the destructive impact of Africa's hidden road traffic injury epidemic on its children, meet Michael.

Michael is a young boy from an ordinary family in Accra, Ghana – his father works for a trader in car spare parts, and his mother has a small business selling disposable cups, plates and cutlery.

Despite these somewhat humble beginnings, all of his teachers agree that he has a very promising future. They describe him as being bright, intelligent and confident.

However, in November 2015 he suffered a major setback when he was hit by a 'trostro' – a public minibus – on his way home from school. The roads around the school are busy at home-time, and there are no safe crossing places, so every day the pupils have to dart between traffic. The driver of the trostro was going fast and did not see Michael. Michael was dragged along underneath the vehicle for several metres before it eventually came to a stop.

All of the passengers disembarked and the trostro driver, with the assistance of one passenger, rushed Michael to hospital. One ankle, one hip and both of his knees were badly broken. He remained in hospital for two months, and had two major operations.

He is now back at home, but has not yet been able to return to school and has to visit the hospital twice a week. He cannot walk properly, and cannot play with his friends. But his biggest concern is to not fall behind in school. At home, he sticks strictly to the school timetable, using his books to teach himself. Incredibly, he remains cheerful and optimistic.

Michael's parents and extended family support him as well as their means allow. The medical bills and other expenses have come to over \$2,000, which was beyond the means of his parents, even more so as their combined monthly income of around \$125 reduced when Michael's mother had to leave her job to care for him. Michael's aunt took out a bank loan of around \$1,300 – with an astronomical interest rate. The National Health Insurance Scheme, with which Michael is registered, has covered very little of the costs. Recognising Michael's potential, his family are doing everything they can to support his education, even to the detriment of some of his siblings.

Michael's story is, unfortunately, not an isolated case. According to analysis from the Global Burden of Disease more than 85,000 African children and youth are killed or seriously injured on the continent's roads each year – a top five cause of death for the over-fives in many African countries. Many more

children have their life journey disrupted or set on a downward trajectory through loss or injury of a family breadwinner.

These brutalised children are the victims of dysfunctional mobility systems, poorly conceived urban planning decisions and political indifference. Despite high level recognition of the issue, and numerous policy statements and ministerial declarations little has yet changed. Now, with the advent of the Sustainable Development Goals – including targets for road traffic death reduction (3.6) and for improving the safety and sustainability of mobility in cities (11.2) – there is new international momentum for action. Now this needs to translate into real change for children like Michael.

We have the tools. In 2011 the UN Road Safety Collaboration adopted a Global Plan for the Decade of Action setting out the key measures that countries need to implement to take control of their road traffic injury situation.

This report argues that change can begin with simple steps to make walking safer for children across sub-Saharan Africa. More than three-quarters of children walk to and from school. Other journeys – to shop, collect water, or play with friends – are also overwhelmingly undertaken on foot. Prioritising investment for these journeys, through providing footpaths and safe crossing points, and through reducing vehicle speed by road design and traffic calming is a relatively low-cost but highly effective public health investment.

For example, interventions undertaken in Tanzania by Amend, with support from the FIA Foundation, have demonstrated that focusing relatively low cost infrastructure improvements on the schools with the highest road traffic injury rates prevents one road traffic injury for every 286 at-risk children, reducing injury rates by at least a quarter, and serious head injuries by half.

This approach benefits not only children, but all road users on a continent where at least 50% of people do not have access to a car. It is a health investment which also improves transport efficiency, urban liveability, local environmental quality and access to education. It can safeguard the productive future and economic potential of millions of children.

Africa's leaders and the international community have talked about road safety for long enough. Now is the time to walk the talk. This serious, and growing, epidemic threatens millions of lives. It is a civil rights issue for the 21st Century. We need a dramatic step change in response.

# EXECUTIVE SUMMARY



- A child in sub-Saharan Africa is twice as likely to die in a road crash as a child in any other world region.
- Africa has the lowest motorization rate, but the most dangerous roads. A higher proportion of pedestrians die on African roads than in any other part of the world.
- African cities are growing rapidly, with many major cities projected to double in size in the two decades between 2010 and 2030.
- This urbanization is being accompanied by an unprecedented demographic youth bulge.
- Sub-Saharan Africa has a vast income and mobility divide – a wealthy elite and small middle class while more than 90% of people earn less than \$10.
- Urban and mobility planning are designed for the car-using minority, not the walking majority, an approach endorsed and fueled by international development aid.
- Despite many high level political declarations on road safety by African ministers over the past decade, real political commitment and institutional capacity remains weak.
- With the adoption of the Sustainable Development Goals, including targets on road safety in the Health & Cities goals, there is new momentum for action.
- While a holistic approach will need to involve strengthening laws and their enforcement, and improving the quality of training, testing and licensing drivers, the significant institutional weakness, corruption and other challenges facing these components of road safety mean that, in many countries, they will take time to address.
- To tackle road traffic injury with results in the short-term, an exercise of triage should focus on improving safe walkability and reducing motor vehicle speeds in African urban and peri-urban areas.
- A priority should be to ensure every child has a safe and healthy journey to school, by targeting local infrastructure and traffic calming on routes to school. Such an approach is proven to be effective in reducing child injury, and has benefits for other policy agendas, including climate change, local air quality and tackling the epidemic of lifestyle diseases.
- International donors should scale up support for provision of pedestrian facilities and speed management: a safe footpath on every street; low urban speed limits and safe crossings, physically enforced through design change.
- African civil society, private sector and government can work together – supported by development partners – through national or city coalitions for safe journeys for children, building support and practical delivery of measures to protect and save lives.

**SAFE,  
ACCESSIBLE,  
LOW CARBON  
MOBILITY**



**CLEAN AIR  
AND A  
HEALTHY  
ENVIRONMENT**



**A SAFE AND  
HEALTHY  
JOURNEY  
TO SCHOOL**



BOX 1:

# SAFE AND HEALTHY STREETS FOR AFRICA'S CHILDREN



As a daughter of Africa, as a campaigner, and as the bereaved mother of a child lost in a road traffic crash, I urge policymakers to read and act on this report.

The recommendations it contains are so obvious that even a child could tell you what needs to be done. And indeed children have told us. Six year olds told us that they needed a safe crossing to get to school; little ones asked why there were no footpaths to help them avoid traffic; school kids asked for action against speeding and drink driving. Perhaps we should listen to our kids. If children find the answers self-evident, why are our leaders not doing more? How can there be so little action?

Just over five years ago, my life was shattered. My world was destroyed. It only took seconds. My daughter, Zenani Mandela Jnr, had been a teenager for just one day. One moment, my little girl who was full of hopes and dreams and laughter was with us. And then, in the few seconds it takes to crash a car - she was gone. You watch your children grow, you see them start to make their own lives. You never imagine it could end so suddenly.

So, for Zenani; for every child in our great continent taken too soon in a road traffic crash; for the thousands who survive but suffer life-changing injuries: we must act.

At the UN in the new Global Goals, all our governments -including all Africa's leaders - have now agreed a target to halve road deaths in the next five years. This target is simple, it is powerful, and it is highly ambitious. And yet, it is also achievable. My grandfather, Nelson Mandela, knew a bit about difficult challenges. As he famously said, "it always seems impossible, until it is done". What lies in front of us may be difficult, but it is far from impossible. This is a man-made epidemic and we don't need to look very far for the means to end it.

In November 2015, in Brazil, I was honoured to open the 2nd Global High Level Conference on Road Safety, which brought together two thousand ministers, officials, road safety activists and public health professionals to plan partnerships and ideas for meeting SDG targets 3.6 and 11.2. Speaking before an audience including many government ministers from Africa and across the world, I told them there was no excuse for inaction:

- All new cars meeting minimum UN standards by 2020 - no excuse;
- 100% seatbelt and motorcycle helmet use by 2020 - no excuse;
- At least three star safety on the highest risk roads by 2020 - no excuse;
- Lower speeds by all schools and residential areas - no excuse;
- Safe pavements and cycle lanes in all our cities - no excuse;
- A safe route to school for all our children - no excuse.



This report focuses in particular on the last three of these demands.

It calls for urgent action to provide footpaths on the 95% of high-speed roads used by pedestrians where there is no protection. It calls for urgent action to ensure safe at grade crossing points and traffic calming to reduce vehicle speeds. It calls for a policy reorientation by governments and donors alike to make the needs of the most vulnerable people the priority. We know this approach can work, and this report details some of the evidence.

I know it works from personal experience of joining with a great coalition of partners, local and global, to protect schoolchildren in South Africa. The demonstration projects we are implementing in Western Cape and Kwa-Zulu Natal are proving that a focus on footpaths, safe crossings and tackling vehicle speed can transform the daily journey to and from school and dramatically reduce the exposure to risk of our children.

We know how to do this. Having these tools to prevent injury and suffering at our disposal and failing to use them constitutes a violation of our children's rights. And it is incredible that such a violation is allowed to continue. This is not a society I want to live in. As a mother, I want a different future for my children, for all children.

That is why I am proud to be an ambassador for the new Global Initiative for Child Health & Mobility, which brings together global leaders on child protection and sustainable mobility with regional and local practitioners. The core vision is simple and yet powerful: a safe and healthy journey to school for every child. It is a programme to protect our children on the roads, to tackle air pollution, to promote walking and cycling for healthier lives. It is a partnership to push for delivery of the Sustainable Development Goals. It is an initiative for the health of future generations, for the right to an education, for the fight against poverty.

This is a social change movement that should inspire all of us: a movement for every child, on every journey. Let's work together for a better Africa. Let's make the change.

**Zoleka Mandela,  
Global Road Safety Advocate**

# AFRICA: YOUNG, AT RISK, & ON THE MOVE



## A growing, urbanising, younger continent

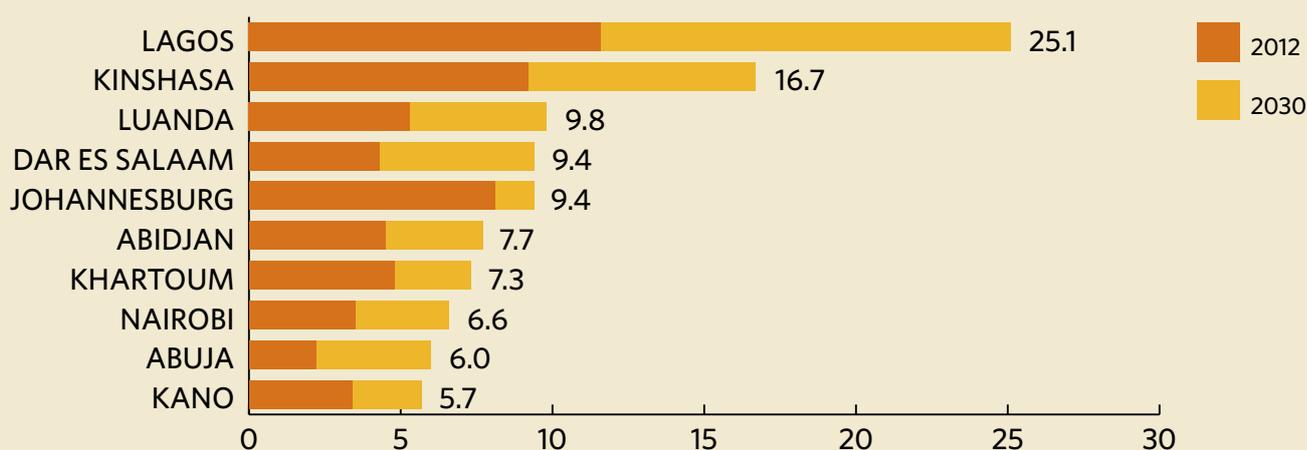
Sub-Saharan Africa is rapidly urbanising, with many of its major cities projected to double in size between 2012-2030 (Figure 1). The populations of these cities are also becoming younger, the result of a youth bulge which is already reshaping the demography of countries and is forecast to continue to grow significantly<sup>1</sup>. Over the next fifteen years, for example, in Niger, population growth is expected to be 79%, with Mali expecting a 61% increase and Zambia a 60% increase<sup>2</sup>. For this region, as with other low and middle income regions already suffering high numbers of child road deaths, demographic shifts combined with unplanned urbanisation, growing motorisation and low levels of safety are a toxic mix which should spur an urgent reaction.

Urbanisation is in part being spurred by economic growth in sub-Saharan Africa, which has averaged more than 5% for the past decade<sup>3</sup>. Meanwhile the number of vehicles in Africa has increased from 26 million in 2005 to 43 million in 2014. Yet the level of motorisation remains relatively low by global standards (still only averaging 44 vehicles per 1,000 population, compared with a global average of 180/1,000)<sup>4</sup>. Typically, car purchase accelerates



rapidly once average per capita income reaches \$10,000 pa<sup>5</sup>. Yet Africa still has a very small middle class, just around 6% of the population, while more than 90% of people earn less than \$10 a day<sup>6</sup>. This huge wealth inequality is preventing the explosion in vehicle numbers being experienced in much of Asia and Latin America, but it is also a factor in the proportionally high risk of road traffic death as those who cannot afford a car are left to walk or cycle on roads with no pedestrian or bicycle infrastructure, or to use often-dangerous public transport systems.

FIGURE 1: AFRICA'S EXPANDING CITIES (PROJECTED POPULATION GROWTH TO 2030, MILLIONS)



Data source: Godfrey, N and Zhao, X. (2015). The Contribution of African Cities to the Economy and Climate: Population, economic growth, and carbon.

# The most dangerous roads in the world

Africa already has the most dangerous roads in the world. The average rate of road death across the continent is 26.6 per 100,000 population (Figure 2). Globally, nine out of ten countries with the highest estimated rate of road traffic death are on the continent, with Libya -73 per 100,000 and Malawi, at 35/100,000, joining Thailand in the top three<sup>7</sup>. With an estimated 35,600 annual deaths Nigeria has the fifth highest real level of road traffic fatalities in the world (after China, India, Brazil and Indonesia), although the government's own official figures only recognise a toll of 6,450 (see box 9). As shown in Figure 3, when it comes to its children, sub-Saharan Africa suffers double the rate of death from road traffic crashes of the next worst region, South East Asia, which has a much higher vehicle to population average of 232 per 1,000.

Why is the road traffic danger situation so extreme in sub-Saharan Africa? There has been massive investment in African infrastructure, including highways and roads, since the early 2,000s,

FIGURE 2: ROAD TRAFFIC FATALITY RATES PER 100,000 POPULATION, BY WHO REGION

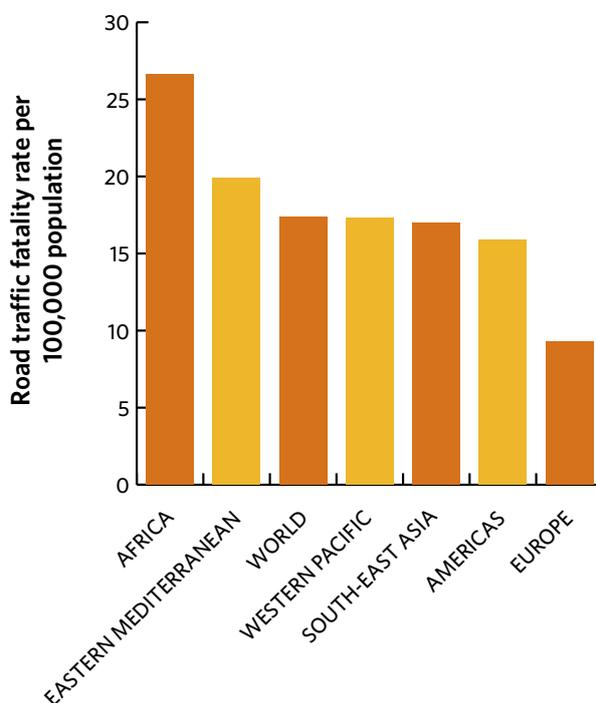
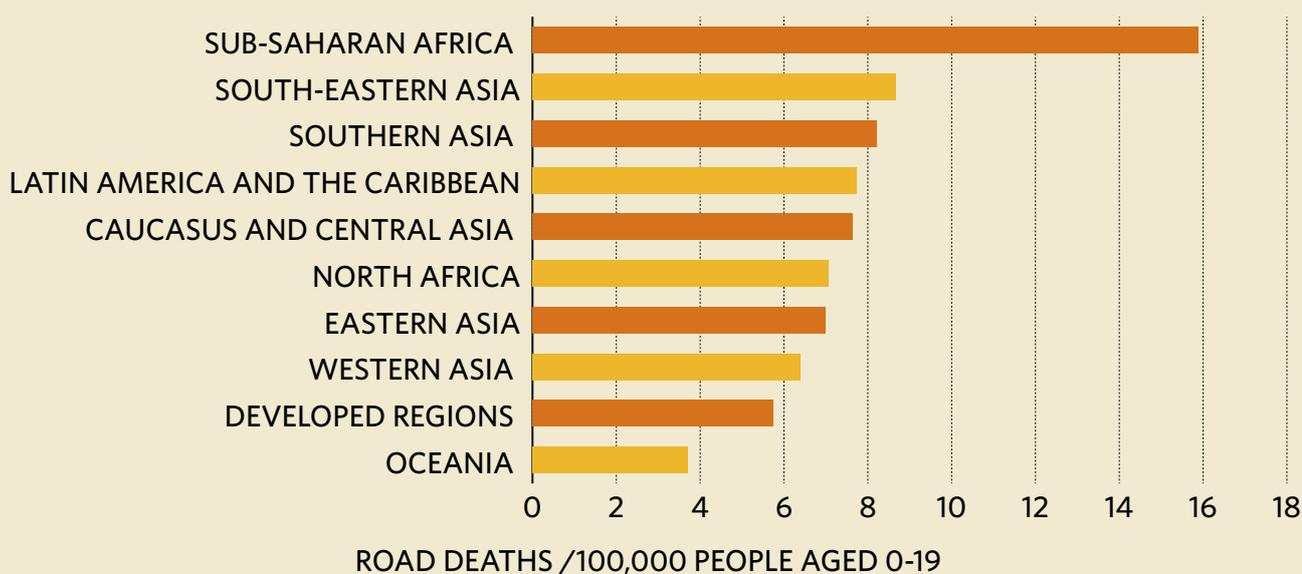


FIGURE 3: CHILD ROAD DEATHS IN WORLD REGIONS



Source: FIA Foundation analysis of IHME Global Burden of Disease data

honourably motivated by global efforts to reduce poverty and support economic development (see Figure 4). Spurred by African governments through groupings like the New Partnership for Economic Development (NEPAD)<sup>8</sup> and the Infrastructure Consortium for Africa<sup>9</sup>, fuelled with both overseas aid and inward investment by China and other trade partners, the continent has seen an increase in the length of its strategic road network and also rehabilitation of existing roads, enabling higher speeds and - in theory - faster delivery of goods.

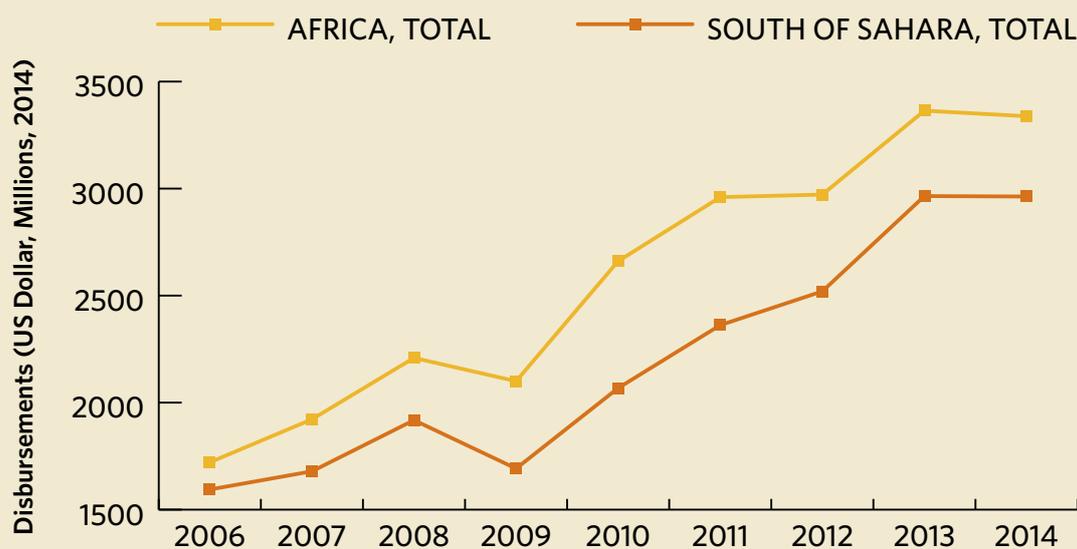
Yet for the vast majority of the population, those walking and cycling or using overcrowded and poorly regulated public transport or, increasingly, motorcycles, the level of protection afforded has not increased in tandem with the speed of development. While the focus of mobility planning is on catering for vehicles, the most vulnerable are left behind to largely fend for themselves. In the context of Africa's rapidly growing urban centres, where new dwellings develop alongside highways, or highways are forced through communities, the result can be chaotic and costly with highly detrimental health and environmental consequences. As the influential Africa Progress Panel, chaired by Kofi Annan, pointed out in its 2015 report 'Power, People, Planet':

"Cities built in this fashion haemorrhage economic opportunities and amplify social and environmental stress. Lacking access to modern energy, poor households resort to burning charcoal. Emissions of soot, traffic fumes and smoke have created dangerously high levels of particulate matter, which is linked to premature death, asthma, heart attacks and respiratory diseases."<sup>10</sup>

Kofi Annan's report goes on to highlight the impact of road traffic on the urban environment: "Road-traffic problems reinforce the costs of pollution. Sub-Saharan Africa has the world's lowest levels of car ownership, but the highest levels of road death (322 road deaths per 100,000 cars) and some of the world's most congested cities. One study in Lagos estimated that commuters lost 3 billion hours annually to congestion and that a 20 per cent reduction in congestion would save US\$1 billion every year."

Walk in any African city and the neglect of pedestrians is clear, in the absence of footpaths and safe crossings; the poor management or maintenance of those footpaths that do exist; the lack of street lighting; the lack of speed control (excepting the natural regulator of terrible traffic congestion). It is all too clear that the

**FIGURE 4: DONOR SPENDING ON AFRICA ROADS**



Source: OECD DAC CRS database

BOX 2:

# UNMAPPED CONTINENT: SUB-SAHARAN AFRICA'S PROBLEM WITH ROAD DEATH DATA

In order to track road death numbers over time and to compare numbers from country to country, the World Health Organization (WHO) publishes data for all countries in the biennial Global Status Reports on Road Safety. The WHO compiles the data through surveys involving numerous stakeholders in each country worldwide.

However, only one country in sub-Saharan Africa - South Africa - is classified by the WHO as having good death registration data.

All other sub-Saharan African countries fall into the WHO's category of 'Countries without eligible death registration data'. What this means is that the WHO recognises limitations in the official data that these countries publish on numbers of road deaths and injuries.

In such cases, the WHO uses sophisticated statistical models, developed from other areas of public health where data is simply unavailable, to estimate what it believes to be an accurate number of deaths. Sometimes, the difference between the WHO's estimate and the countries' official figures is large. As an example, the table below shows these differences for five countries: Ethiopia, Ghana, Nigeria, Tanzania and Zambia (2013 figures, from GSR, 2015).



	Nationally-reported number of deaths	WHO-estimated number of deaths	% difference
Ethiopia	3,362	23,837	709%
Ghana	2,240	6,789	303%
Nigeria	6,450	35,641	553%
Tanzania	4,002	16,211	405%
Zambia	1,851	3,586	194%

2013 figures, from GSR, 2015

### **BUT WHY IS THIS?**

Many sub-Saharan African countries do not have a strong lead agency for road safety. Rather, responsibility for road safety is divided between numerous government bodies. And often the communication between these different ministries, departments and agencies is poor. For example, the traffic police may record the numbers of deaths at the scene of a crash, but will not follow up with hospitals to find out if other victims died in the hours and days that followed.

In many countries, especially those where there is no lead agency for road safety, it is the traffic police who are the custodians of RTI data. However, police forces are often hugely under-resourced:

- Officers are poorly paid and so lack motivation and may be tempted to seek to supplement their income through other – corrupt – means, which can result in a lack of official reporting
- Officers are poorly trained and do not understand the importance of good data
- There is a lack of skilled, trained personnel with the ability to enter, analyse and interpret the data
- Basic equipment, including computers and internet access, is often lacking. Police stations in many African countries are characterised by pile-upon-pile of dog-eared traffic police reports, chalkboards with only the most basic of numbers written on, and mangled trucks, cars and motorcycles left to rust in the yard outside
- There is very little police presence in rural areas which, combined with the fact that the majority of drivers in rural areas lack driving licences and insurance, results in huge under-reporting. In the case of a crash – even when injuries or deaths have occurred – those involved will deliberately avoid contacting the authorities. The culpable driver will settle the matter with cash at the side of the road, or will simply flee the scene

Hospitals are often as under-resourced as the police and face similar challenges, so even if there is communication between the two, they will be compiling data from equally unreliable sources. A hospital's first priority is to treat the injured as they present. Since the health care infrastructure of many developing countries struggles to even achieve this mandate, they are unable to dedicate resources to accurate record-keeping.

As well as the lack of capacity within the government institutions responsible for RTI data, there is also a lack of capacity within civil society and the media. Civil society and media should be holding governments to account for the data that they publish, but largely they are quiet, sometimes because they are suppressed.

Even when the official statistics show huge inconsistencies – and in some cases, copy-and-paste from the previous year – there is no-one to question whether the data behind positive headlines such as “Police successful in reducing motorcycle deaths” and “Government strategies reduce road carnage” are accurate. No-one asks whether the errors in the data come as a result of incompetence or wilful manipulation for political reasons.

### **AND WHAT DOES IT MEAN FOR ROAD SAFETY?**

Without accurate data, it is impossible to develop effective road safety interventions, and it is impossible to evaluate the effectiveness of those interventions that are in place. In most sub-Saharan African countries, researchers cannot rely on the data available from government sources to accurately quantify the problem, measure the impact of injury prevention strategies, or appreciate how the patterns of injury evolve over time. The result is the dependence on primary data.

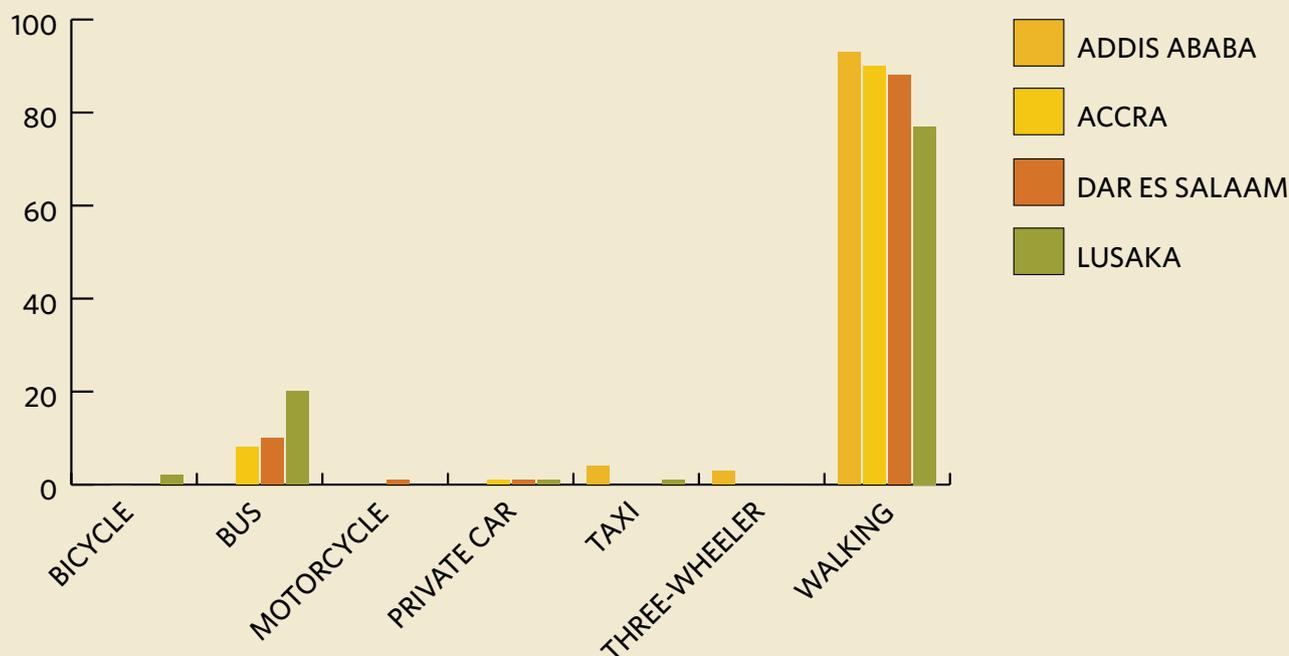
policymakers travel by car, and care little for those who walk. Consider that three-quarters of children travel to school on foot – most of them unaccompanied by adults – and the consequence of this neglect becomes alarming<sup>11</sup>. It is little wonder that so many child deaths, injuries and traumatic near-misses occur. In fact, half of all deaths in the region are among those – of all ages – with the least protection: pedestrians, cyclists and motorcyclists. At 39% of the total road toll, and much higher in some individual countries, the sub-Saharan African region has the highest proportion of pedestrian-related deaths in the world<sup>12</sup>.

This lack of provision of even basic amenities – surveys by the International Road Assessment Programme (iRAP) in several African countries have found that on roads with traffic speeds of more than 40km/h used by pedestrians fewer than 5% have functioning safe footpaths – is symptomatic of a wider dysfunction in urban and mobility planning<sup>13</sup>. This must be addressed not only to combat road traffic injury but also the global epidemic of lack of exercise and poor diet



leading to non-communicable ‘lifestyle’ diseases; the growing health burden of air pollution (in part caused by traffic emissions); and the challenge of re-tooling urban transport to prioritise low-carbon modes and encourage walking and cycling.

**FIGURE 5: HOW CHILDREN TRAVEL TO SCHOOL IN AFRICAN CITIES**



Source: Amend, 2016. Observational survey in four African cities

## The policy response: many words, too little action

How are African governments and international policy communities responding? Since 2005 there have been a number of declarations and proclamations on road traffic injuries by African ministers meeting under the auspices of the UN Economic Commission for Africa (UNECA)<sup>14</sup>, the sub-Saharan African Transport Programme (SSATP)<sup>15</sup>, and the African Union<sup>16</sup>. These declarations have all clearly delineated the scale of the epidemic, and the negative impact of road traffic injury on the economy and on wider development efforts.

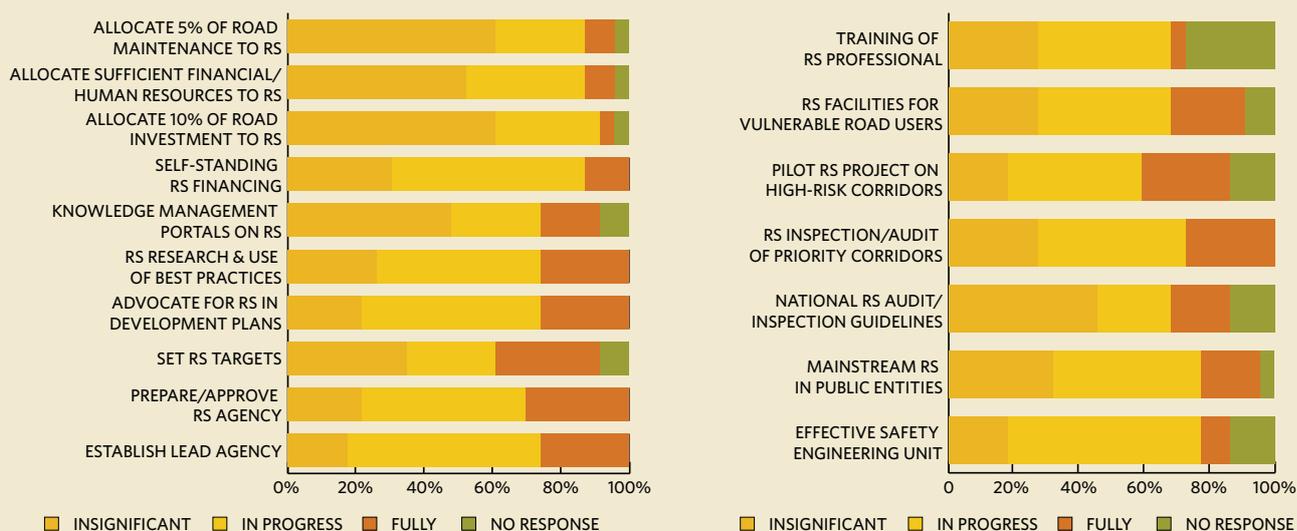
As long ago as 2007, for example, an African Road Safety Conference hosted by the Government of Ghana and UNECA approved the 'Accra Declaration'<sup>17</sup>, endorsed by ministers from 25 African countries, which called on the G8 to "recognize the urgent need to improve road safety in Africa, particularly in sub-Saharan Africa; systematically include road safety in the work of the Africa Infrastructure Consortium; the sub-Saharan Africa Transport Policy Programme; and in the development assistance programmes of the

G8 nations to ensure that new and improved roads in Africa do not increase road traffic death and injuries".

Words come easily. Translating communiqués of this type into real action, whether coordinated across the region or within countries, has proven to be more difficult. In 2015 UNECA published a report analysing the response of governments to the African Road Safety Action Plan, the continent's contribution to the UN Decade of Action for Road Safety, at roughly its mid-way point<sup>18</sup>. The report, covering the 23 countries which responded to a survey, highlights how little progress has been made in building institutions or implementing road safety measures (see Figure 6).

The report finds that, while some countries have established lead agencies or less formal road safety councils, few have well-functioning, well-funded strategies. Only a small minority of countries claim to have established a baseline for recording road traffic injuries or to meet international reporting standards. This is borne out in the self-reported tallies of road fatalities provided to the World Health Organization for its 2015 Global Status Report on Road Safety, where official figures are typically lower by a factor of at least three or four than the casualty levels modelled by WHO.

FIGURE 6: PERFORMANCE AND PROGRESS IN KEY AREAS OF INSTITUTIONAL STRENGTHENING AND INFRASTRUCTURE SAFETY



Source: UNECA 2015: Status of Implementation of the African Road Safety Action Plan (2011-2020)

BOX 3:

# GOVERNMENT LEADERSHIP: GHANA'S NATIONAL ROAD SAFETY COMMISSION

Ghana's National Road Safety Commission (NRSC) is an example of one of the most proactive government lead agencies for road safety in Africa.

The NRSC coordinates the road safety-related activities of all relevant government agencies as well as the Ghana Red Cross Society and Ghana St John's Ambulance. In consultation with these stakeholders, the NRSC formulates detailed action plans through which to deliver its strategy.

The NRSC is currently implementing its third strategy, which covers the years 2011 to 2020, and is in line with the goals of the United Nation's Decade of Action for Road Safety.

The current action plan is for the period from 2015 to 2017. Each stakeholder is tasked with reporting progress towards agreed targets at quarterly meetings organized by the NRSC. The current targets have a particular focus on pedestrian and passenger safety, in line with recent crash data which show high crash rates involving these two groups. The NRSC has embarked on a number of programmes aligned with this, including their 'fatigue driving', 'passenger empowerment' and 'pedestrian safety' campaigns.

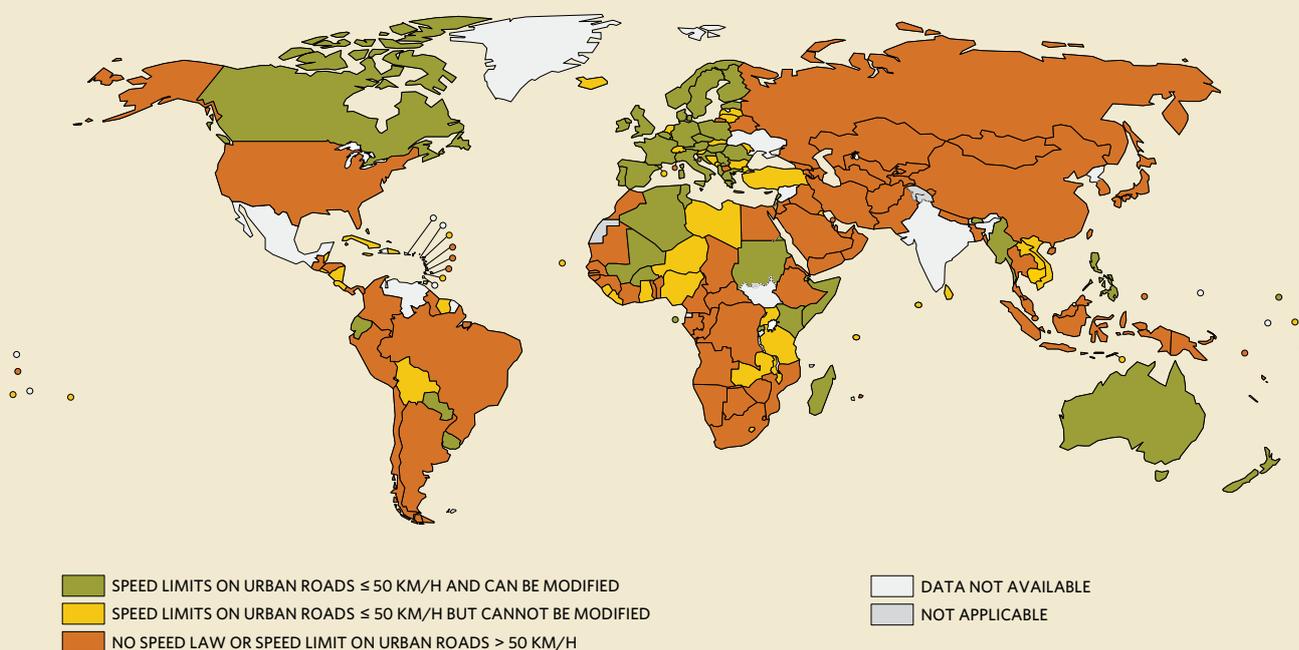
The NRSC has started a programme to provide 'lollipop stands' at key pedestrian crossing locations, such as schools. The stands are placed on either side of the road and hold lollipop signs, for use by pedestrians as a means of stopping drivers when crossing the road. The lollipop stand initiative was piloted by the NRSC in the Volta Region of the country, evaluated and found by the NRSC to have a positive impact. Various corporate groups have come on board to partner with the NRSC in the provision of these 'lollipop stands'.

Other current activities of the NRSC include training road safety instructors to provide road safety education to children in schools, and collaborating with the Ghana Education Service to publish road safety textbooks. 80,000 of these text books have been distributed in schools to date.

While the NRSC is widely recognised as being one of the most effective road safety lead agencies in Africa, it nonetheless faces challenges. For example, only currently having a mandate for coordination means that it is unable to hold others accountable, and so can struggle to push other government agencies to prioritise safety. This is a common problem faced by road safety agencies across the continent.



**FIGURE 7: URBAN SPEED LIMITS BY COUNTRY**



Source: WHO, Global Status Report on Road Safety 2015.

Without reliable data it is impossible to effectively target interventions, and there is evidence that the lack of data is being used as a reason (or excuse) for wider inaction. In the UNECA survey, many governments self-report that they have made ‘insignificant’ steps towards providing infrastructure facilities for vulnerable road users, or that such policies are ‘in progress’. Again, the findings are echoed in the WHO’s status report, which finds that there are only a handful of sub-Saharan African countries that meet best practice in urban speed management. It is a simple formula: no footpaths + no speed law = recipe for disaster.

While there are good, committed, road safety officials working within governments across the continent (see box 3), they need greater support from the international policy community and within their own national policy structures. Governments are more likely to prioritise an issue like safe mobility if there is an external impetus and motivation (like funding) or pressure to do so. But there is not yet a sufficiently compelling narrative for what is happening on the highways and streets of Africa to galvanise the sort of high level, coordinated response which is provided



Road safety officials meet at UNECA to review progress towards the African Road Safety Action Plan

for malaria, HIV/AIDS or other infectious diseases. Of the external voices that can create the enabling environment to make road safety an issue of concern, the WHO, which plays a leading role despite the limited internal funding for injury prevention available, is advocating for action globally and in the region to the best extent it can. The UN Secretary General’s Special Envoy for Road Safety, Jean Todt, is very active in meeting African heads of government and ministers

and proselytizing for action<sup>19</sup>. The African Union has included road safety within its coordination efforts, led by the AU Commissioner for Infrastructure & Energy, to support the African Road Safety Action Plan<sup>20</sup>. An African Sustainable Transport Forum, coordinated by the UN Environment Programme, was launched in 2014 at ministerial level and is working to coordinate country-level strategies for sustainable transport, accessibility, vehicle emissions control and energy efficiency, as well as road safety<sup>21</sup>.

Multilateral development banks and other development partners contribute vast sums of money to the development of Africa's road infrastructure. The World Bank, for example, supports urban development projects; the Chinese, Japanese, European Union and the African Development Bank support the construction of major highways; and the United Kingdom supports the development of rural roads.

As such, these partners have the opportunity to influence national governments' decisions on how money is spent. Some partners are very prescriptive about what they will fund, sometimes insisting that the design and even the construction are managed by firms from their own country. Other partners are far less prescriptive, and aim to build the capacity of local governments and construction sectors to be able to build their own roads to high standards.

Some development partners are strongly committed to road safety; others are not. Even those who are sometimes struggle to ensure that the roads they fund are safe, because the governments they support are not committed to road safety. The World Bank is trying to address this by providing institutional capacity support to some African governments<sup>22</sup>, and the safety quality of the Bank's own road sector lending is improving – all road projects are now required to include a road safety component, and a new Safeguards policy approved in August 2016, and for the first time specifically including road safety, is in the process of being operationalized<sup>23</sup>.

Funding is always an issue, for both national governments and development partners. Among the budgetary and other pressures that come with managing road construction projects, safety is too often side-lined – seen as a luxury that can be dropped if the funds get squeezed or if the timeframes slip. This is especially the case when it comes to safety for non-motorised users.

The 3-Star Coalition is a group that is advocating for the design and construction of safer roads in the developing world, including in Africa<sup>24</sup>. Specifically, the coalition advocates for all roads in developing





countries to be built to a minimum 3-star safety performance metric for all road users – as defined by the International Road Assessment Programme (iRAP). The coalition urges organisations such as the World Bank to formally adopt this metric. Such an approach will not only save lives but also provide substantial economic returns.

But still more must be done to ensure that all mobility investments are designed to protect the poorest and most vulnerable, and UNECA, the African Development Bank, the sub-Saharan African Transport Programme (SSATP) and the AU – as the key ‘homegrown’ institutions – must take a more proactive lead.

The need for a response becomes even more urgent because of the necessity to respond to the Sustainable Development Goals, and the targets on sustainable mobility, including a Health target on road safety (3.6) with a 2020 deadline and a 2030 Cities target (11.2) promoting safe and sustainable access to urban public transport<sup>25</sup>. Faced with the reality of weak institutions, lack of political prioritisation (to some extent understandable with so many competing social issues) and a challenging funding situation, it is extremely unlikely that many sub-Saharan African countries will suddenly transform their road safety situation. An exercise in ‘triage’ is needed, to identify the best, quickest and cheapest interventions that will stabilise road traffic casualties and contribute most to the wider health and environmental agendas within the 2020 and 2030 time horizons, and the aim of this report is to offer some suggestions. As we show in the following section, the human impact of transport dysfunction on Africa’s youngest and most vulnerable demands this urgent action.

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# THE HUMAN COST OF UNSAFE STREETS



## Sub-Saharan Africa: a burden on children in poverty

Across the world, it is the poorest communities that bear the brunt of dysfunctional urban and transport planning. Nowhere is this more evident than in the slums and informal settlements of sub-Saharan Africa, and in communities situated near high speed peri-urban roads, where there exists a largely unrecognized and untreated epidemic of road traffic injury.

Children are on the front line, exposed to the dangers of traffic each day on their journey to and from school, and on other trips, with little protection. Vulnerable on the roads, and unable to cope with the consequences following injury, as the following cases show, the poor and the young suffer multiple, ongoing impacts from road trauma. Of course it is not only children who are killed or injured, and

the loss of a parent, or other breadwinner, can have devastating effects on household economies, educational opportunities and can set a lifelong downward trajectory for families.

Africa is urbanising and motorising at a rapid pace. The future may be one of rapidly increased rates of motorisation in Africa, yet as we have seen, the region already has the highest rate of road death per population combined with the lowest current vehicle numbers. African urban populations are on the rise, many forecast to expand by over 60% over the next 15 years. These trends combined with a rapid increase in the number of young people in cities, the 'youth bulge', could create a perfect storm for road traffic injury in the future. But too many are already suffering the consequences today.

Dar es Salaam's sprawling network of informal settlements

## Dar es Salaam: low income, high risk

Dar es Salaam is urbanising at a staggering rate. The city is in the throes of a population explosion – currently just over 4 million, it is predicted to expand by 50% by 2025 according to the African Development Bank<sup>26</sup>. The city is on course to becoming Africa's fastest growing urban centre. With such urban growth comes the prospect of economic opportunity, and the most visible signs of development, the crane filled skyline, the expansion of the port and the proliferation of new infrastructure attest to this. Yet Dar es Salaam is also a city of crippling poverty. Urban planning has for many years struggled to cope with rapid population growth, and urban sprawl abounds. With this has come the burgeoning of urban slums and informal settlements, which account for over 70% of the city's population. For the urban poor, the public health challenges are immense. An estimated 40% of the city's population have no access to clean (but non-potable) tap water, and only 5% have access to a formal sewerage system<sup>27</sup>. The city environment exposes the vulnerable, and children in particular, to severe public health threats with cholera and typhoid outbreaks common. In such an environment, road traffic injury features all too prominently in the mosaic of public health threats – yet the immense burden it imposes on children and families is barely recognised. With negligible levels of safety for these communities comes intolerable exposure to road traffic injury.

On the streets of the many poor neighbourhoods of Dar es Salaam, children walk unaccompanied, exposed to fast moving traffic, forced to negotiate dangerous roads without separate footpaths or safe crossing points. Those that can afford to travel on some form of motorised transport face the combined threat of unsafe vehicles, excessive speeds and chaotic road conditions.

Road safety has a direct link to children's ability to get to school. Without safe places to cross roads and measures to reduce the speed of vehicles, many children arrive late. Others may be killed or injured. Some miss exams or key parts of their education, and others never recover to be able to return to school.

For children in Dar es Salaam, the journey to school is dangerous, as they face a chaotic mix of fast moving vehicles and a lack of safe routes for pedestrians. Everyone knows someone who has been killed or injured by a vehicle. Amend spoke to primary school children, who described feeling "scared" crossing roads near their schools. Many of these children will walk on their own, particularly on the way home from school, as parents are busy working or undertaking other daily tasks. In order to cross safely, the children have been trained to ask for help to cross the road, and most do so. In some areas crossing patrols have been established. Sometimes this is in response to a serious crash, and are organised by older children (aged 11 to 13) wearing reflective jackets. Yet most schools don't have crossing patrols - only around 10 of the 400 state primary schools in Dar es Salaam have them, and these only cover the roads directly outside the schools.



Pupils from Dar es Salaam's Mkoani Primary School

BOX 4:

# DART: ENSURING 'SUSTAINABLE' MOBILITY IS ALSO SAFE FOR ALL

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Africa is starting to follow in the footsteps of South America, and more recently Asia, with the development of bus rapid transit systems providing mass transit in major cities. Lagos's 'Lagbus' and Johannesburg's 'Rea Vaya' have been operating for several years.

The most recent edition is Dar es Salaam's 'DART', the first phase of which began operating in May 2016, with the infrastructure – including segregated bus lanes – funded by the World Bank, the African Development Bank, and the Government of Tanzania. Already, the system is proving popular with users as it has reduced journey times.

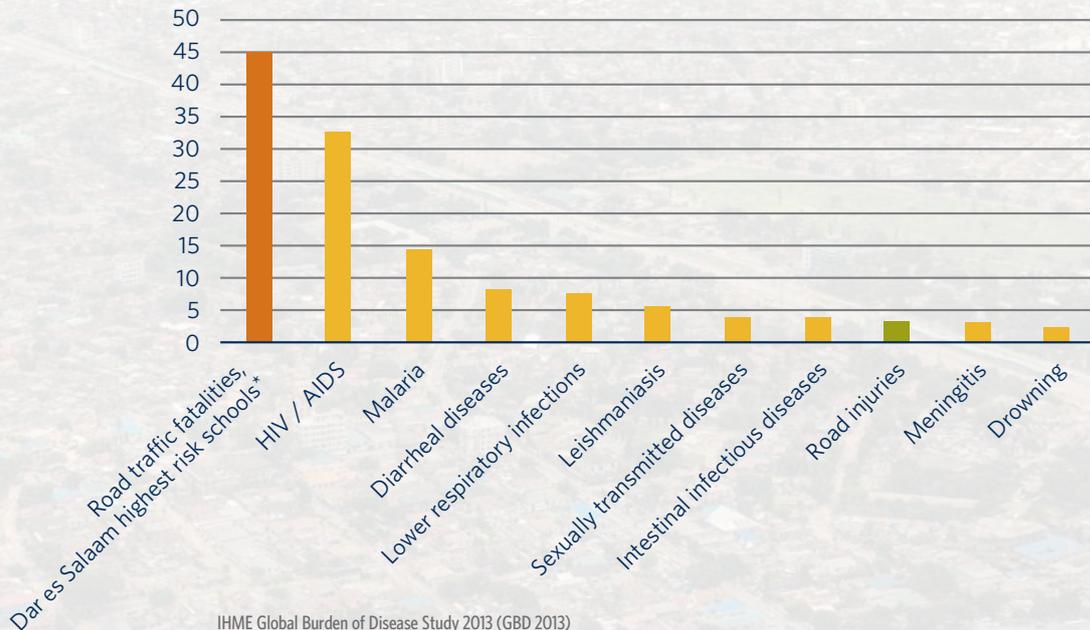
However, throughout the process of the development of DART, safety was often put on the back-burner. No road safety audit of the design was undertaken, and before the start of operations no comprehensive safety training was given to drivers and no awareness campaign was delivered to users.

In April 2016, a small amount of funding (around US\$70,000) was provided by the World Bank for a road safety capacity building project related to the first phase of DART (which had an overall budget of US\$134 million). Unfortunately, work on this small road safety project did not start until the buses were already operating. By the time the project began, numerous incidents had already occurred, including the death of a five-year-old boy who was a passenger on a motorcycle that was struck by one of the DART buses.

It seems that lessons have been learned in Dar es Salaam, as the African Development Bank has recently begun the tender process for a more comprehensive road safety project to be carried out during the planning stages of the second phase of DART. Through the Bloomberg Initiative for Global Road Safety, IRAP, the World Bank and the World Resources Institute are now advising BRT designers in some African cities on pedestrian safety.

With further bus rapid transit systems in the pipeline for cities across Africa – Accra, Kampala, Nairobi and others – the lessons from DART must be applied to prevent further unnecessary deaths while providing growing African cities with much-needed sustainable transport.

**FIGURE 8: TANZANIA - DEATHS / 100,000 POPULATION (5-14 YEARS)**



IHME Global Burden of Disease Study 2013 (GBD 2013)  
 \*The rate for highest risk schools is based on a sample of 15,000 children in 22 schools

Amend has undertaken extensive household survey research through a sample population of more than 15,000 children in 22 schools in Dar es Salaam. These children mostly come from low-income households - the average family income is Tsh 100,000 to Tsh 200,000 per month (about \$50 - \$100 per month). When calculated per 100,000 population the fatality rate experienced by these schools is high, comparable to the health burden caused by other major public health crises.

The rates for diseases shown in fig 4 are national while the road traffic fatality rate is localised according to the schools covered by the Amend research, but nevertheless the data does broadly illustrate the impact of road traffic injury on 5-14 year old children. This figure only covers fatalities from road traffic at 45/100,000 population. The injury rate for the Dar es Salaam schools is significantly higher with 1.3-1.4% of the sample suffering an injury, corresponding to 1,300 injuries per 100,000 population<sup>28</sup>.

Amend identified 199 road traffic injuries sustained during the twelve months from mid-2014 to mid-2015. Seven of the 199 injuries resulted in death, one resulted in an amputation, and thirteen resulted in broken bones.

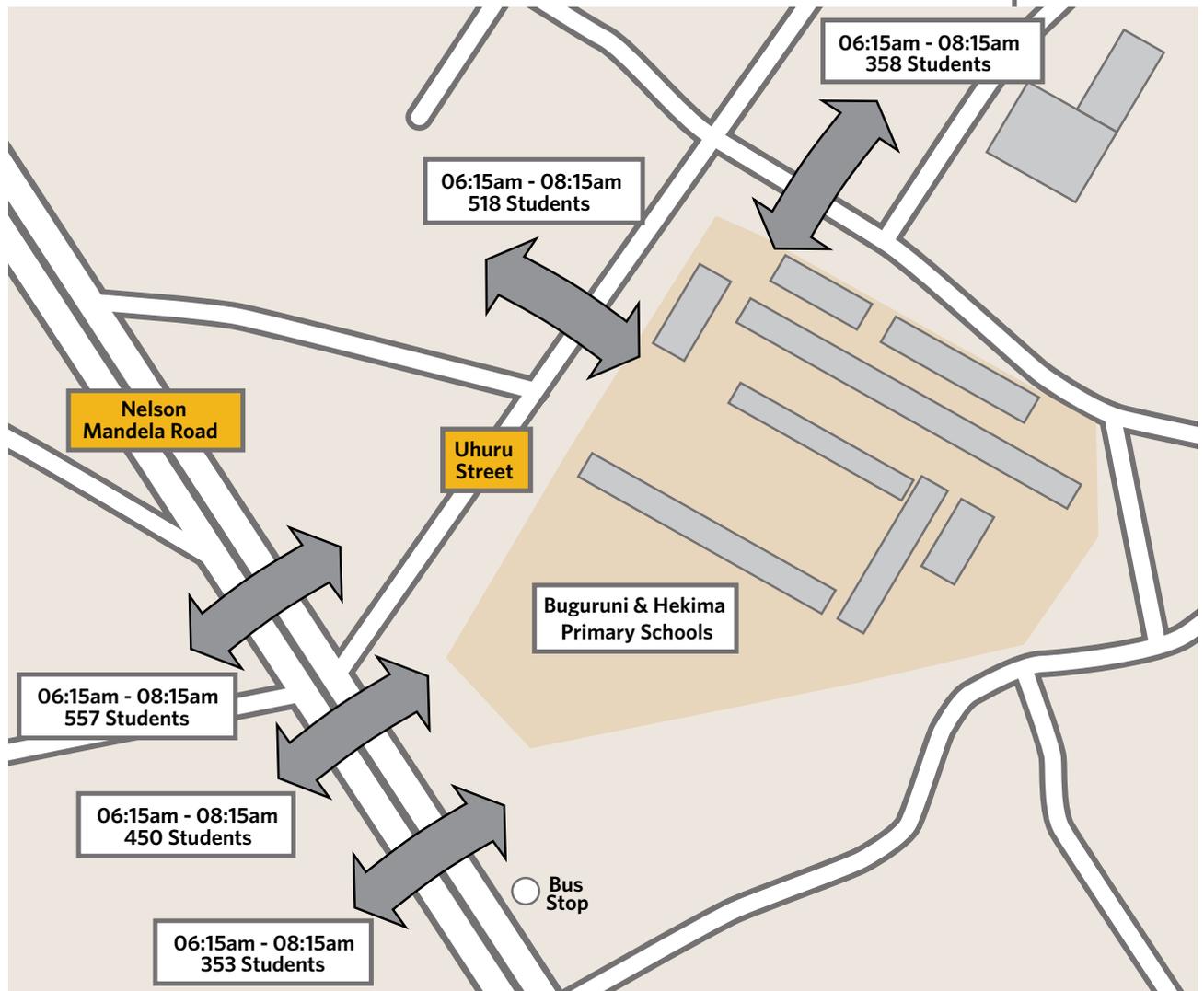
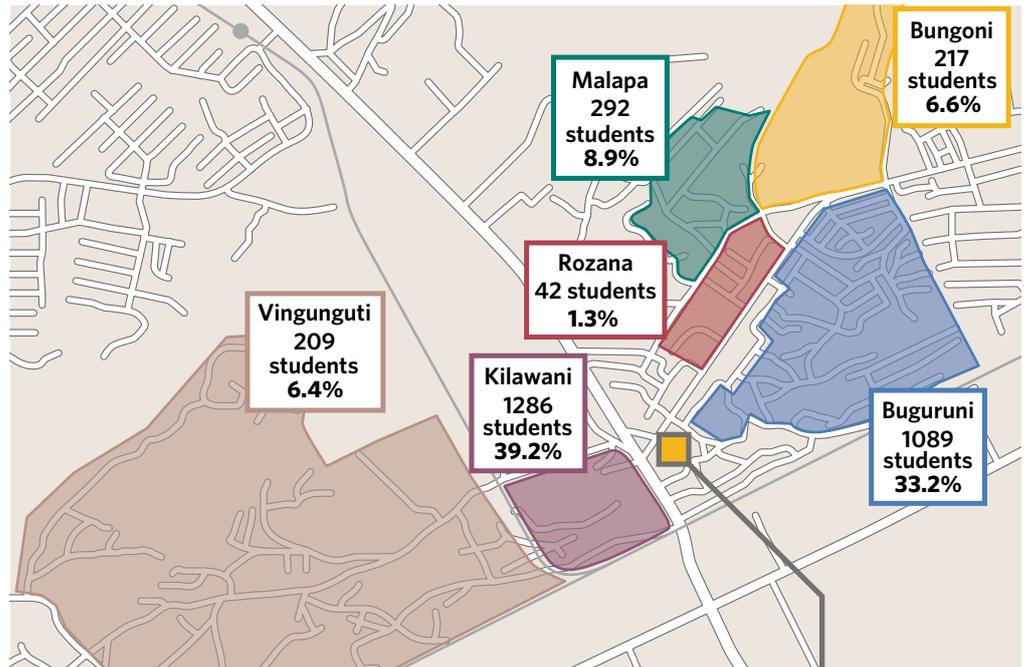


The study represented only around three per cent of all primary school children in Dar es Salaam, and covered only half of 2014 and half of 2015. However, it identified far more injuries than were reported to the traffic police in the entire city for the full two calendar years of 2014 and 2015: the official figures show just eight injuries and two deaths of school pupils in 2014 and just five injuries and one death of school pupils in 2015.

## THE BURDEN ON SCHOOLS

**Buguruni & Hekima Primary Schools, Dar es Salaam, TZ**

- Surrounded by two major dual carriageway highways & one single carriageway municipal road
- School Population (2014): 2,675
- RTI Injury Rate (2014): 2.2%
- Approx. 59 students injured (at least one killed) in 2014



## Hospital costs

Hospital costs can be a major burden for families of those with road traffic injuries. Hospital costs can average \$50 to \$100 per week for those with trauma injuries<sup>29</sup>. An x-ray alone can cost \$70, and surgery can be \$150 for a small procedure, and several hundred dollars for a more serious operation. Too often the costs of treatment will rob a family of their income for an extended period. In some cases, where the family cannot afford the surgery needed, doctors might choose to amputate. Others will have to borrow money or sell possessions in order to be able to afford treatment. Some may delay treatment, making the injuries worse and limiting the chance for a full recovery. Research assistants from Amend report such situations to be common following a road crash. If finances to pay for treatment are not available, doctors will wait as long as they can, but in order to deal with the succession of cases they will often be forced to make the decision to amputate rather than carry out the more complex and expensive surgery that's needed and would lead to greater chances of rehabilitation.

For the urban poor, who make up 70% of Dar es Salaam's population, even a minor road traffic injury can drain a family of several months' wages, and at the same time family members will typically be unable to work having instead to care for an injured relative. In this way, one road traffic injury can have multiple and much longer term effects, reducing family finances and resources, preventing continuing employment and imposing a severe debt burden. Education is also lost in cases where a severe injury leads to months off school for a child and also where a parent or carer is injured or killed.

In the poor neighbourhoods of Dar es Salaam protection for children on the roads is negligible, they face severe risks of road traffic injury each day, on every journey. And children face multiple burdens – from the injuries themselves, from loss of education and from the severe and ongoing economic impact. When road traffic injury hits, the effect on family life can be catastrophic, forcing families into greater levels of poverty. This situation is by no means limited to Dar es Salaam, and is endemic in towns and cities across much of sub-Saharan Africa.

In Addis Ababa, Amend met Solomon, a street vendor with only one leg. Both of Solomon's parents died when he was 10 years old. The local community helped him to continue his schooling for a couple of years, but when that support dried up, when he was aged 12, he dropped out of school. Playing football one day he chased the ball into a road and was struck by a car. He hadn't looked before running into the road, and the driver was going fast and didn't see him.

The driver picked Solomon up and put him in her car, bleeding badly. She rushed him to the nearest hospital. But his right leg was injured badly and despite the doctors' efforts, the entire leg had to be amputated. The driver gave Solomon a little money, and she had insurance which covered the costs of the medical treatment. Solomon now works as a street vendor, in the same part of Addis Ababa where he was injured. He earns about \$50 a month, selling cigarettes, chocolate, tissues and scratch cards. Solomon's story is all too common: road traffic injury resulting in life-long disability and poverty.



In Addis Ababa street vendor Solomon lives on less than \$2 a day following a childhood road traffic disability

## Nairobi: impacting the urban poor

Kibera on the outskirts of Nairobi is one of Africa's largest urban slums. Conditions are miserable with dire sanitation, poor nutrition, huge unemployment and high rates of disease such as malaria and typhoid. Kibera's infrastructure and road conditions are of the poorest quality. Communities accept road traffic injury as a fact of life, and although there is little formal data, even a brief investigation reveals road casualties to be commonplace. Survey interviews carried out at the Nesco School, one of the slum's poorest schools, indicated a high level of road traffic injury. Of 225 children interviewed across 8 classes at Nesco, nearly half had either suffered following a road crash or had a family member killed or injured. There is little to protect the children as they make their way to their classes each day. Most walk, footpaths are non-existent or in poor condition and there are no safe crossing points. Speed limits are absent or not enforced. According to head teacher Solomon Odhiambo, road injury is placing an intolerable burden:

"Just carrying out this survey on road injury was very tough. Children were shedding tears during the interviews. They still suffer after the trauma of what they themselves and their families have gone through. Then of course there are the physical effects. We don't have the facilities to properly provide access for the children who have become injured. We have had children who have missed long periods of school after they became injured. Too often we have children not attending school when their families are struggling to make ends meet after a parent or relative is killed or badly injured."

The families at the Nesco School are among the poorest in Nairobi. For those permanently employed, the average wage is \$2 a day. However, three-quarters of the parents at the school are unemployed and have no income. If families manage to find enough money for medical care following a road crash, they will often not be able to afford school books. And children will often miss school either as a result of their injuries or to help take care of other family members.

The situation is particularly acute in the peri-urban areas on the outskirts of Nairobi where there's a deadly combination of paved higher speed roads, growing population numbers in expanding settlements, a lack of any safety measures and extreme poverty.

St. Dominic's Primary School is located on a busy road with high speed traffic in Mwiki, Kasarani a sub-county of Nairobi. There are no safe crossings, few adequate

footpaths and no speed enforcement to keep the children of St. Dominic's safe. A mix of road users – vehicles, bodaboda motorcycles and street vendors fight for road space. There is no designated crossing for 1,994 children who walk to school each day.

Eunice Kerubo is 10 years' old and attends class three at St. Dominic's. One of three children, her family live off around \$3 per day, a typical income at the school. She was hit by a speeding 'matatu' minibus as she crossed to school. With multiple injuries to her leg, head and chest, Eunice was taken to hospital. As her parents could not afford an x-ray, Eunice went home without treatment. She waited four days before being seen by a medic and after a further four months her family was still trying to find money for medical care. In the absence of treatment, Eunice missed an entire three-month term. When she resumes school, it's quite likely she will struggle. St. Dominic's School reports three to four crashes involving their children each month. The situation at St. Dominic's is common. At many schools in poor neighbourhoods on the outskirts of Nairobi the basic measures to offer protection are lacking. And when affected by road traffic injury, families struggle to cope.

At Cheleta Primary School, also on Nairobi's outskirts, protection is virtually non-existent. Children are regularly hit, and the consequences are devastating. The story of 13 year old Robinson Ongae is typical. He was hit by a speeding car while crossing the road near his home. Robinson suffered severe head injuries and was transferred to Kenyatta General Hospital for surgery. Unlike Eunice, he received treatment but his family who earn barely \$3 a day, were left in debt as the medical costs were twenty times their monthly earnings. Robinson's school, relatives and friends contributed to the bill. However, the family are facing prolonged debt and are suffering even lower living standards as well as the trauma of coping with Robinson's injuries.



Eunice Kerubo and her mother

## Accra: Donors, dysfunction and death

Road traffic injury is one of the leading causes of premature deaths in Ghana. The World Health Organisation estimate that nearly 7,000 people die each year in the country, at cost to the country of 1.6% of its GDP<sup>30</sup>. The number of deaths has increased over the past decade, although the government latest figures for 2013 indicate a slight fall compared with 2012, which offers hope that the trend may be changing<sup>31</sup>. 42% of deaths are among pedestrians. Children are also particularly vulnerable. A study by Amend in Accra in 2009 interviewed over 5,000 children across two communities and found that 172 had been involved in an RTI in the previous 12 months<sup>32</sup>.

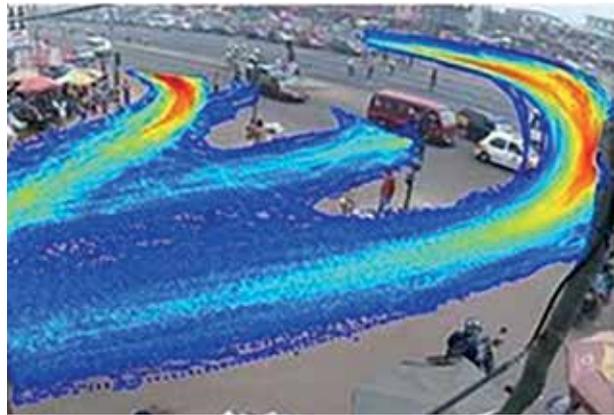
Of the ten areas with the most traffic crashes in Accra, six are on the N1 highway. This highway was rehabilitated with funding from the US Millennium Challenge Corporation and upgraded to a high-speed three lane 'George W. Bush' highway which opened in 2012. While the road has increased speeds and capacity, and many aspects of the design seek to incorporate improved safety features, there are particular challenges around junctions and conflicts between pedestrians and vehicles, particularly due to a lack of safe places to cross.

The Abeka area is in the north west of the city, to the South of the N1 highway. The neighbourhoods bordering the N1 highway from Kwashieman through to Lapaz and Abeka are classed as 'high poverty pockets'. Income levels in these neighbourhoods are mixed with some higher earners, but can be as low as \$2 per day for low income earners. Aggregate poverty across a range of indicators including income, waste facilities, water supply, urban services and housing give a high poverty classification. The N1 highway has been built through the centre of the Kwashieman community dividing it in two. Throughout the day, hundreds of people line up to cross the six lane highway with traffic travelling at speeds of up to 130km/h. Whole families stand by the road attempting to get across to their places of work, to services and schools.

iRAP has undertaken assessments of the roads in Accra. While it finds that some sections of the N1 road score the minimum 3-star safety level for vehicle occupants, the provision for pedestrians is poor and speeds are high resulting in the majority of the road only achieving one-star or two-star safety for the most vulnerable of road users.

The World Resources Institute (WRI) has undertaken analysis at the nearby Lapaz junction of the N1 at Abeka to study the conflicts between vehicles and pedestrians

at the junction. Data indicates that there were 38 crashes at this junction in 2013, the sixth highest of all areas in Accra although none were fatal. WRI's 'heat map' shows red areas which indicate greater areas of conflict between pedestrians and vehicles.



N1 heatmap of pedestrian-vehicle conflict (WRI)



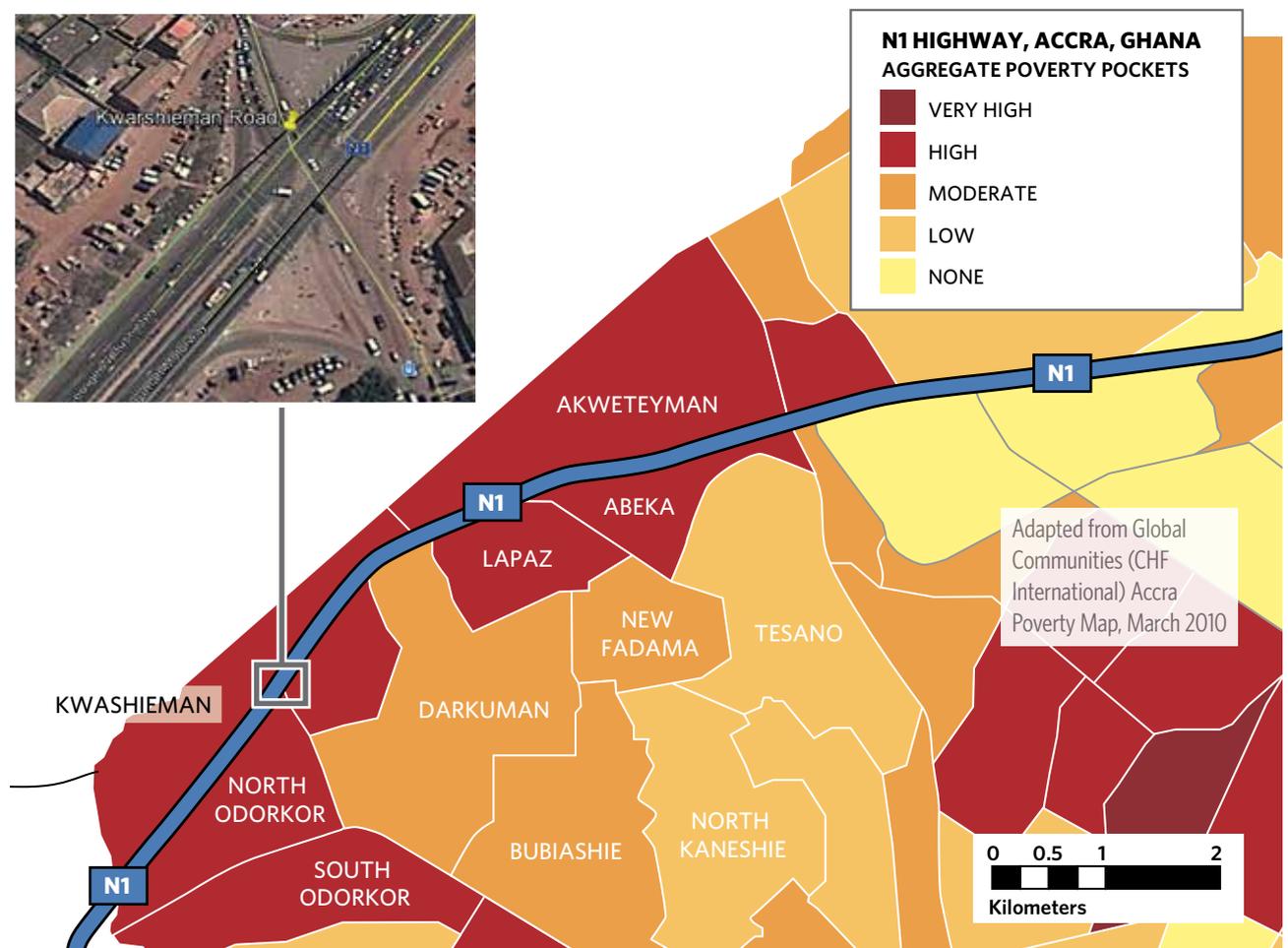
Ghanaian families in poverty lack protection on the roads

Children travelling to schools near the N1 highway are exposed to risks, even if they don't need to cross the highway itself, as fast-moving traffic leaves the motorway and joins local roads. Christ Mission School is only 750m from the N1. It has around 200 students, aged 5-15 years old, and there have been 3 road traffic injuries in the past 12 months. The children are generally from low-income households, with incomes ranging from \$2 to \$8 per day. The school has a single speed hump installed directly outside the school gate, but apart from this there are no other safety measures. On its own it has only limited impact, and a more complete speed management solution is necessary. A child at the Prince of Peace Basic school, which is 700m from the N1 has also suffered a serious road traffic injury in the past year, with many other incidents including children.

# THE HUMAN COST OF UNSAFE STREETS



Accra traffic, pedestrians and a mix of vehicles in close proximity



## CASE STUDY 1: Lucy, 10 years old, primary school pupil, Lusaka, Zambia

Ten year old Lucy lives with her widowed aunt and three other children in a small rented flat in a low-income area of Lusaka.

Every day, she walks with her friends to school, approximately one kilometre from her home. The journey takes them alongside and then across a busy road during morning rush hour.

One morning in July 2016, while Lucy was walking along this road she was hit by a driver who came off the main carriageway onto the dirt shoulder. The driver didn't stop, leaving Lucy lying in the dirt. Another driver stopped, put her in the car and rushed her to hospital. She has head and face injuries, and a broken leg.

Because their household's only income is from Lucy's aunt selling vegetables at the local market, Lucy's grandmother had to travel from her village over 600 kilometres to Lusaka to sit at her bedside in the hospital.

The hospital treatment, and Lucy's food there is free – provided by the government. But Lucy's grandmother does not receive food, so every day after finishing at the market, her aunt comes to the hospital to bring food. As well as the cost of the food, the transport costs are around \$2 per day, so the majority of the aunt's income – which is approximately \$100 per month – is spent in some way related to caring for Lucy.

On top of this, Lucy's grandmother is worried about the maize on her farm in her village, which she should by now have harvested and sold at the market. Both her aunt and grandmother are worried about how Lucy will cope when she is released from hospital, including whether she will be able to walk normally and whether she will have fallen behind her classmates at school.



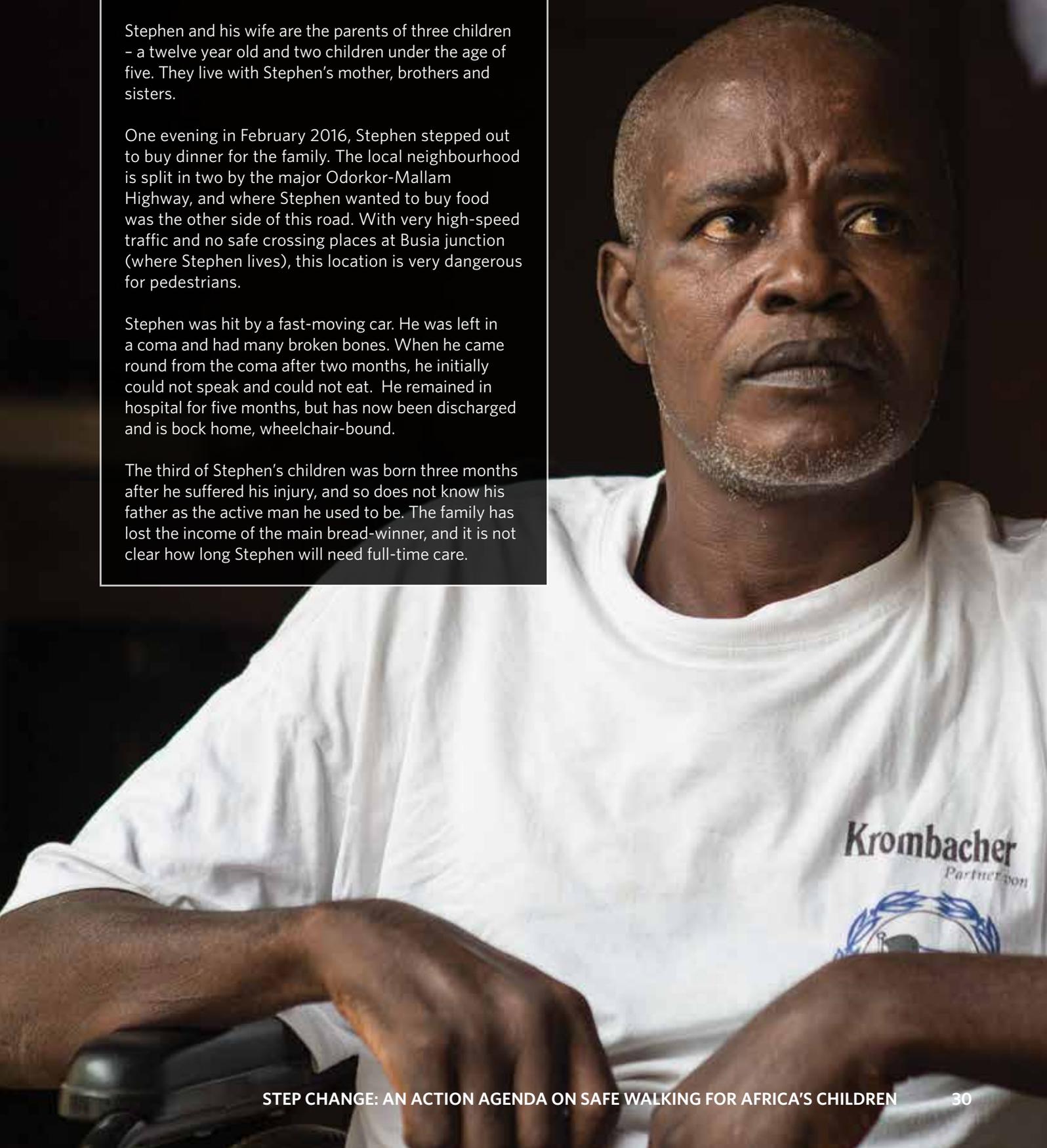
## **CASE STUDY 2: Stephen, 48 years old, carpenter, Accra, Ghana**

Stephen and his wife are the parents of three children – a twelve year old and two children under the age of five. They live with Stephen's mother, brothers and sisters.

One evening in February 2016, Stephen stepped out to buy dinner for the family. The local neighbourhood is split in two by the major Odorkor-Mallam Highway, and where Stephen wanted to buy food was the other side of this road. With very high-speed traffic and no safe crossing places at Busia junction (where Stephen lives), this location is very dangerous for pedestrians.

Stephen was hit by a fast-moving car. He was left in a coma and had many broken bones. When he came round from the coma after two months, he initially could not speak and could not eat. He remained in hospital for five months, but has now been discharged and is back home, wheelchair-bound.

The third of Stephen's children was born three months after he suffered his injury, and so does not know his father as the active man he used to be. The family has lost the income of the main bread-winner, and it is not clear how long Stephen will need full-time care.



### CASE STUDY 3:

## Cecilia, 10 years old, primary school pupil, Dar es Salaam, Tanzania

Cecilia is ten years old. She lives with her father and grandmother in a rented single room in a low-income area of Dar es Salaam. Every day she wakes up early to help her grandmother prepare chai before she gets herself ready for school.

Her father leaves early for work as a security guard, and her grandmother is too old to walk far, so Cecilia leaves for school alone. But she always meets friends along the way, and they talk and joke and laugh. One morning, early in 2016 she was hit by a speeding motorcycle that was driving on the footpath. She was knocked to the ground and hit her head. The driver did not stop.

Cecilia was rushed by a teacher to hospital, where she had an x-ray and had her wounds cleaned and dressed. She was discharged that evening, but returned to see a doctor numerous times over the following weeks for check-ups.

Cecilia's family's financial situation is precarious, with her father earning no more than \$100 per month. This is around average for low-income areas of Dar es Salaam. And it is children from families in such situations who are likely to be at greatest risk of being injured on the roads. The areas they live in are congested and the infrastructure is often neglected and sometimes willfully damaged. There is no culture of adhering to rules, including to the rules of the road, and the presence of Traffic Police is rare. Children lack good role models – including those who can show them to use the roads safely.

Cecilia's family struggled to pay the costs of the medical treatment. They had to borrow money from wider family and from neighbours, and are still in debt of more than \$100 – a full month's income for their household.

On top of the financial impact to the family, there is the emotional and educational impact to Cecilia herself. She missed around one month of school, and even though she's now back in class every day, she does not perform as well as she used to – she struggles to concentrate and has fallen behind her classmates.



### **CASE STUDY 4: Modester, 41 years old, volunteer health worker, Rufunsa, Zambia**

Modester is a 41 year old single mother with six children who lives in a rural district about 80 kilometres from Zambia's capital city, Lusaka. She is a volunteer at a local health clinic, through which she earns less than \$50 per month, and has a small business on the side to supplement her income.

In July 2016, she was travelling to a funeral in an overloaded shared taxi. The driver was travelling too fast, and failed to negotiate a car parked at the side of the highway. He lost control and went off the side of the road, and the car overturned and rolled three times before coming to a stop.

A passing driver saw the crash and rushed to help, loading the injured people into his vehicle and taking them to hospital. Modester had two broken arms, a broken leg and injuries to her neck and ribs. The doctors expect that she will remain in hospital for several months.

Modester's six children are being looked after by her mother, although she is unable to send money to help support them because she now has no income. Most of the hospital fees and medicines are free, and so is food. But other expenses, including those related to family coming to visit her, are being covered by family and friends.

Modester's biggest fear is that she will be left permanently disabled and unable to return to work and to provide for her children. As well as physically, the consequences of the crash are affecting her emotionally.



# WALKING: A RIGHTS AGENDA



A school child sits in the middle of a busy road in Dar es Salaam to protest an injury suffered by a fellow student

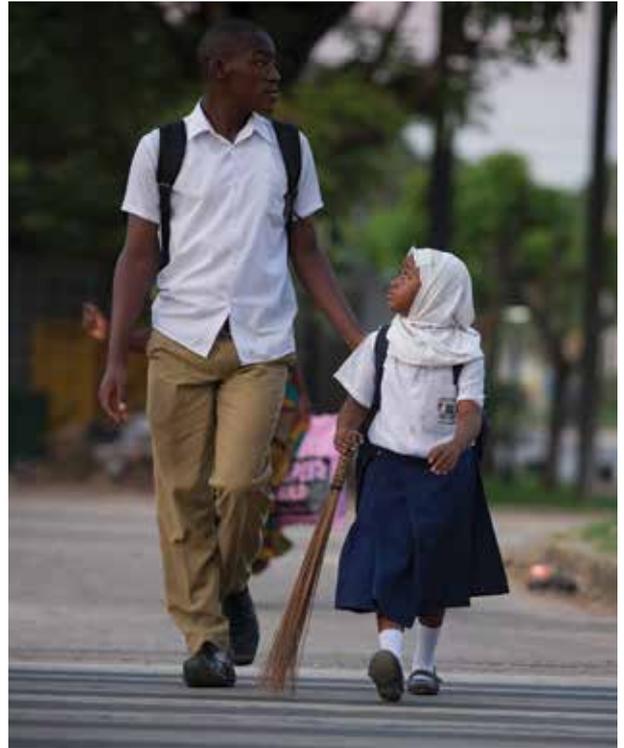
When a child has to sit in the middle of the road, to halt traffic, to protest about a speeding vehicle injuring a school friend, it is clear that something needs to change. In this case, in Dar es Salaam, an impromptu demonstration by the student colleagues of an injured child resulted in a speed hump being installed. But similar injuries, or deaths, and similar protests are occurring regularly across African cities. The right to walk in safety is a human right, a civil right, and it is a right that needs to be recognized and acted upon.

In the context of many sub-Saharan African countries, with limited institutional support or capacity for road safety interventions, a focus on ensuring that all urban roads and streets, where children are present as pedestrians, are safe and walkable, would contribute greatly to reducing road traffic injury and to encouraging continued non-motorised mobility. Taking action on a large scale over a five year timeframe to provide walkable footpaths and reduce urban speed through both physical traffic calming and street re-design could deliver immediate results and lay a foundation for further measures. What would this involve in practice?

### Political champions

Firstly, political support needs to be secured. Footpaths and cycle paths are 'poor relations' of bigger engineering projects, and lack the reputation-building potential of new highways or bridges. The perception of footpaths as a sideline needs to be changed, so that they are recognized and celebrated as a cornerstone of an urban liveability/public health strategic approach. For the international donor community, their national or city counterparts, and the charity-giving public, footpaths should be as compelling a solution as mosquito nets for malaria. The leaders of multi-lateral development banks, so vocal on many public health issues, are largely silent on this one which, ironically, perhaps most closely relates to their bread-and-butter lending portfolios. It is time for World Bank President Jim Kim and his counterparts to shout about the health-giving benefits of safe footpaths and reduced traffic speed.

Within countries there is often fragmentation of responsibility, so no natural champion makes the case for safe walking. For example in Kenya, responsibility for urban road construction and management is divided between the Kenya Urban Roads Authority, responsible for building urban roads, and the Kenya National Highway Authority, responsible for national roads. A third body, the National Transport Safety Authority (NTSA), is responsible for introducing and managing



road safety regulation but – as is often the case – the NTSA's focus is more on road user behaviour and less on fundamental system design, such as infrastructure. In the case of Kenya and many other countries establishing a coordinating body, whether a 'National Footpaths Authority' or a 'Safe & Healthy Schools Coalition', charged with delivering a comprehensive, safe, footpath network and ensuring that this is a core component of every transport and urban plan could keep the needs of pedestrians high on the policy and implementation agenda.

Building such a coalition of interest is part of the objective of the 'Share the Road' initiative led by the UN Environment Programme<sup>33</sup>. The initiative is working with African governments and city authorities to encourage the development and delivery of 'non-motorised transport', or active mobility, plans to make walking and cycling central to urban transport planning (see box 5). In Nairobi preparatory work to develop a strategic plan (which has now secured promise of significant funding from the city government) was co-funded by the UK Department for International Development through its Strengthening Adaptation and Resilience to Climate Change in Kenya Plus (StARCK+) programme. Promoting the benefits of active mobility for low carbon strategies, as well as for tackling non-communicable diseases through promoting exercise and reducing air pollution, can unlock new sources of political support and, crucially, financing.

BOX 5:

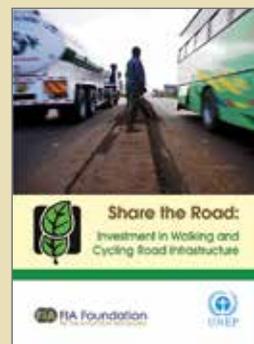
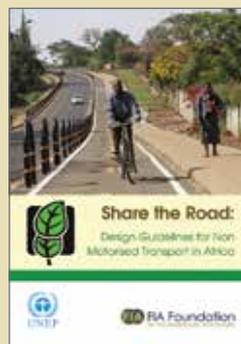
# UNEP: WORKING WITH PUBLIC AUTHORITIES TO 'SHARE THE ROAD'



Nairobi officials at the launch of the city's Non-Motorised Transport Strategy, March 2015

The importance of promoting safe walking and cycling infrastructure for a range of environmental policy goals, including reducing greenhouse gas emissions and improving air quality, has motivated the United Nations Environment Programme (UNEP) to establish the 'Share the Road' initiative. It works with governments and urban authorities around the world to encourage the development, funding and implementation of non-motorised transport (NMT) policies.

In Nairobi, where 500 pedestrians were killed in 2014 (out of 700 road deaths overall), UNEP has worked with the city authorities to develop an NMT policy to prioritise investment in walking and cycling infrastructure. Almost half of all road users in the Kenyan capital are pedestrians, but investment is disproportionately in favour of motorised vehicles. UNEP has articulated a strong equity message in advocating for pedestrian and cyclist investment. Now Nairobi City Council Government has committed to invest almost



20% of their road construction funds to NMT and related public transport infrastructure. The policy will act as a catalyst in creating a safe, cohesive and comfortable network of footpaths, cycling lanes and tracks, green areas, and other support amenities. It will also spearhead the introduction of laws and regulations to ensure that NMT facilities and areas are prioritised.

The Share the Road initiative, supported by donors including the FIA Foundation, DFID and GIZ, has worked with public authorities in other African cities including Kampala, Uganda; Kigali, Rwanda; and Bujumbura City, Burundi. Efforts include awareness raising events and seminars; demonstration projects to build support for active mobility investment, including reallocation of road space to footpaths and cycle lanes, and better inter-modal connection with public transport hubs; and larger scale strategic planning with the objective of scaled-up funding for active mobility. The initiative is now also providing support to public authorities in Nigeria where a cycling and walking policy for Lagos is expected to be developed before the end of 2016, as well as an amendment to the national transport plan. In Ghana there are plans to develop a similar cycling and walking policy in 2017.

Child-specific measures are also promoted as part of the Share the Road initiative, including tools to implement safe routes to school.

The motivation for the first Share the Road demonstration project – a new cycle path and footpath improvements to UN Avenue outside UN headquarters in Nairobi – came after the deaths of two schoolchildren on the road. And, with worsening traffic pollution in many African cities, the impact of poor air quality on children's health and lung development is an urgent reason for promoting sustainable modes of mobility. As motorisation increases, some estimates suggest Africa could generate 20% - 30% percent of the world's combustion driven sulphur dioxide and nitrogen oxides by 2030, up from about 5 percent each in 2005. Alongside efforts to remove lead and reduce sulphur content in fuel and require cleaner engine technology (with the UNEP-led Partnership for Clean Fuels & Vehicles achieving significant results across the continent) discouraging car dependency, by providing attractive, safe and easily accessible green alternatives, is a critical part of the policy response.



UNEP's Share the Road initiative transformed UN Avenue in Nairobi with a new cycle lane and improved footpath



Motorisation in cities like Nairobi is increasing exposure to air pollution caused by vehicle emissions

## Engineering a 'safe system'

There is little point in providing footpaths in isolation, without addressing the way pedestrians interact with other road users. So vehicle speed management should be at the heart of strategies to protect children, delivered through a 'safe system' approach of infrastructure and street re-design to provide a 'forgiving' environment. This can be buttressed by enforcement strategies, awareness raising and education of both drivers and children. But in the context of poor communities in low and middle-income African countries, where consistent and effective police enforcement may be difficult to guarantee, providing traffic calming measures which physically force vehicles to slow down - because there is no alternative - combined with separated footpaths and cycle-ways, and safe crossing points, is likely to be the most effective short term approach.

Using speed policy to minimise the kinetic energy released in a road traffic collision is essential to providing a forgiving road environment. This is especially important in urban and peri-urban areas, where motorised vehicles move in close proximity to large numbers of pedestrians, cyclists and other vulnerable road users. As described elsewhere in this report, surveys by iRAP in several

African countries show that more than 95% of roads with a speed limit of 40km/h or more where pedestrians are present do not have viable footpaths<sup>34</sup>. High vehicle speed combines with inadequate pedestrian facilities with appalling consequences.

The introduction of safe infrastructure has proved to be effective in all settings including low and middle income countries, and can provide a 'quick win' in improving safety for all road users including pedestrians and children. NGOs including Amend, iRAP, the Global Road Safety Partnership<sup>35</sup> and the World Resources Institute<sup>36</sup> are demonstrating, with projects in several countries across sub-Saharan Africa, that localised infrastructure solutions are effective in preventing both injury and stress for children, and reducing the economic and social burden that comes as a result of RTI.

There are a range of cost-effective infrastructure solutions for protecting pedestrians and vulnerable road users on all forms of road network including in local neighbourhoods and on routes to school. Infrastructure improvements to tackle speeding around schools include adequate street crossings, traffic signals, bicycle lanes, signage, speed humps, road markings, and pedestrian fencing, footpaths, and speed reduction programmes. The introduction of such countermeasures raises the safety level, or 'star rating' of a road. iRAP calculates that for each star rating improvement, road traffic fatalities decrease by half.





## Educating the engineers

While there is a wealth of excellent and highly transferable guidance on modern and inclusive street design including, for example, the Global Street Design Guidelines from NACTO<sup>37</sup>, or EMBARQ's 'Cities Safer By Design' toolkit<sup>38</sup>, too many road engineers are still working to outdated, automobile-centric, templates which exacerbate mobility dysfunction. In Kenya, for example, the road design manual is thirty years old. But this is not only an African issue – the same problems arise in cities from New York to New Delhi.

There needs to be a systematic effort to engage and educate at all levels. It is not enough to convince the politicians and officials at the top of the hierarchy, if the district engineer actually implementing schemes is unmoved. Proving the case with demonstration projects in order to show results and build trust is crucial. Working flexibly within the rhythms and practice of local authority engineers, rather than trying didactically to impose new ideas, may be time-consuming and sometimes frustrating but will hold better prospect of ultimate success. Workshops led by the World Resources Institute as part of the Bloomberg Philanthropies Global Road Safety Initiative, for example, are helping city engineers in Accra and Addis Ababa to translate new design solutions to local circumstance, and improving road conditions for children, and all vulnerable road users<sup>39</sup>.

In Tanzania, Amend has worked with the President's Office for Regional Administration and Local Government to develop detailed advice for local government District Engineers to enable and

encourage them to consider the specific safety issues related to motorcycles in rural areas. The advice was developed based on the findings of three years of research supported by the UK government's African Community Access Partnership. Similar initiatives are required to understand and develop guidance on safety issues facing vulnerable road users in African cities.

A lack of leaders is one of the major constraining factors for the entire transport sector in Africa, and this is particularly the case when it comes to road safety. As the numbers of vehicles, including the high-risk motorcycles, has increased dramatically in recent years, the transport sector has lacked leaders with the ability to keep up with the changes and to provide adequate infrastructure or regulation.

For many years, the development of Africa's roads has been led by a small cadre of technical experts who have travelled the continent advising governments and developing manuals. Many of these experts are now nearing retirement age, and the number of experts in the subsequent generations is insufficient to meet the increasing challenges that the continent will face.

The Transport Sector Leadership Development Programme, supported by the UK Department for International Development through the African Community Access Partnership<sup>40</sup>, is intended to address these challenges, to help to develop the next generations of skilled, professional leaders. Road safety is one of the key areas that must be included in the programme. More, many more, donor dollars from the bilateral and philanthropic sectors are needed to expand training and knowledge transfer.

BOX 6:

# DESIGN SOLUTIONS TO PROMOTE SAFER WALKING

The World Resources Institute global reference guide 'Cities Safer By Design' sets out clear advice on a toolkit of measures that urban planners and transport authorities can deploy to reduce road traffic injury and encourage walking and cycling. These approaches can be seen as a vaccine against traffic speed and road injury and should be adapted to local conditions and applied liberally in African urban centres. A few key examples of relatively simple road treatments from the report are described below. The guide is available at [www.wri.org](http://www.wri.org).

## THE BASICS OF SAFE SIDEWALKS

Sidewalks, pavement, or footpaths are portions of a street between the curb lines and the buildings for use by pedestrians. A well-equipped sidewalk accommodates pedestrian use and street furniture, as well as landscaping elements, including light poles, signs, fire hydrants, benches, mail boxes, newspaper boxes, parking meters, trash cans, etc.



## SPEED HUMPS

Speed humps are raised pavement that can reduce speeds to a certain limit based on the height and length of the hump. Humps are artificial elevations on the roadway. A hump is often designed as part of a circle, a trapeze, or as a sinusoidal curve. Speed humps can be designed for different target speeds, and are not limited to low traffic streets. Ideally, speed humps will enable vehicles to travel at a target speed consistently along a road, rather than slowing down and speeding up before and after each hump.

## SPEED CUSHIONS

Speed cushions are traffic calming devices designed as several small speed humps installed across the width of the road with spaces between them. Speed cushions force cars to slow down but are different from a speed hump as they can better allow movement of larger vehicles—such as buses or ambulances—by straddling the cushions.



## CHICANES

Chicanes are artificial turns created to slow traffic. They lead to a reduction in the width of the roadway, either on one side or on both sides or constructed in a zigzag, staggered pattern that directs drivers away from a straight line, which can reduce vehicular speeds on both one- and two-lane roads.

## SAFE PLACES TO LEARN AND PLAY

Zones around children's playgrounds, parks, schools, and community centers are areas that require special attention to pedestrian safety. Children are more vulnerable than adults to collisions with motor vehicles, because their activities and movements are more unpredictable.



BOX 7:

# STAR RATING FOR SAFETY: IRAP WORKING WITH LOCAL COMMUNITIES IN SOUTH AFRICA



The project team for the Khayelitsha pilot included local community leaders, police, road authorities, donors, public health experts, Takalani Sesame and iRAP advisers

In urban areas of Africa surveyed by the International Road Assessment Programme (iRAP) 95% of roads with speed flows at more than 40 km/h which are used by pedestrians have no formal footpath. In rural areas this rises to 99% of roads. iRAP, a UK-based international charity, has undertaken surveys in sub-Saharan African countries including Ethiopia, Kenya, Ghana, Nigeria, Tanzania and South Africa, working with road authorities to provide independent safety assessments of interurban highways and urban streets. iRAP uses risk analysis to provide 'star ratings' from 1 (most dangerous) to five (the safest) measuring the safety performance of a given road for all types of road user. In the sub-Saharan African countries surveyed, 94% of roads are rated either one or two star for pedestrian safety. iRAP methodology is now being widely used across the world, informing strategy and implementation in major road management and rehabilitation programmes in high income countries like the US, UK and Australia and rapidly motorising middle-income giants Brazil, Mexico, China and India.



iRAP's assessments often include roads running alongside schools. But in South Africa iRAP is part of a research project looking specifically at school journeys in urban communities. In pilot project work conducted with iRAP in Khayelitsha, South Africa, the introduction of a safe crossing for one school was calculated to reduce the risk of road traffic injury for school children by 85%. The project is an example of how infrastructure can be implemented effectively in a very low income community to improve protection.

The project in Khayelitsha, one of South Africa's most disadvantaged townships, was coordinated by local NGO ChildSafe, a member of the Safe Kids Worldwide network, with donor support from Janssen Pharmaceuticals, Worley Parsons and IVECO, via the Road Safety Fund, and from the FIA Foundation. Institutional support came from the City of Cape Town, and RTMC and SANRAL, the road authorities. The police also played an important role as part of the project coalition.

At one of the project schools, Sivile Primary, children face traffic travelling at 90 km/h as they cross the dangerous Jeff Masemola Highway on their daily journey to classes. Before the introduction of the Safe Schools initiative, a high level of road traffic injury was reported with over 15% of the children indicating they had suffered some degree of incident, and the vast majority reporting they wanted action to be taken to be kept safe on the roads. A 'conflict analysis' identified instances where children crossing to school were placed in danger by vehicles travelling at speed. During the peak hours on the daily journey to and from school an average of 39 'conflicts' were recorded.

The project combined assessment of the safety performance of local roads, and advocacy to persuade the local authority to implement improvements, together with a training package for teachers and a road safety curriculum for the children designed by Sesame Workshop's South African team, Takalani Sesame, to reflect local cultural and environmental conditions. IRAP's road assessments were conducted using a hand-held tablet computer. The project leveraged €86,000 investment in safer infrastructure around the pilot schools from the Cape Town local authority – principally a new lights-controlled crossing for children, combined with traffic calming measures - against an estimated €20,000 investment per school in assessment and training once one-off R&D costs were stripped out of the budget. Following the installation of the crossing the risk to children using the road is estimated to have been reduced by around 85%.

An expanded study with iRAP technical input is now underway at 10 schools in KwaZulu Natal province, coordinated by the Global Road Safety Partnership South Africa, again supported by Janssen Pharmaceuticals. With support from FedEx, iRAP is also developing an app-based tool for school route safety assessments, which could potentially empower local communities to rate safety performance and demand redress from public authorities, an important step to 'democratising' design.



Before: children were exposed to high speed traffic with no protection



After: a new lights controlled crossing and traffic calming is estimated to have reduced risk by up to 80%



Local engineers worked with iRAP to assess safety using hand-held tablet devices

BOX 8:

# 'SAFE TO SCHOOL, SAFE TO HOME' IN ZAMBIA WITH GRSP

The Global Road Safety Partnership (GRSP) has established a school-based child safety programme, 'Safe to School - Safe to Home' which is being piloted in a number of countries around the world. The programme incorporates assessment of road safety conditions, the installation of appropriate and low-cost local traffic engineering improvements, extensive road safety education for children, parents and the community, together with enhanced enforcement of helmet wearing, parking restrictions and speeding.

Safe to School - Safe to Home uses a step by step process that schools and local authorities can follow to make sure that key road safety issues are identified and a range of actions implemented to improve the safety of children. The programme recommends a range of actions that are complementary and focused on effective outcomes. Programme objectives are:

1. To reduce the speed of vehicles on roads around the school where children are walking and/or riding bicycles.
2. To improve safety for children crossing roads near the school or on preferred safer routes.
3. To encourage children who are walking or riding a bicycle to use safer routes when travelling to and from school.
4. To improve safety around the school entrance so children can be safely dropped off and picked up.
5. To improve safety for children being driven to school by increasing helmet wearing and/or seat belt use.

In sub-Saharan Africa GRSP has piloting the scheme in Lusaka City (Chilenje), Zambia. A large project team included GRSP Geneva, GRSP Zambia, the Zambian Road Transport and Safety Agency (RTSA), the Ministry of Transport, Works, Supply and Communications, the Road Development Agency, Ministry of Education, Ministry of Health, Zambia Red Cross, Zambia Police, Lusaka City and the parent teacher associations of the target schools. The project was financed by private sector donors Michelin, Shell, Toyota and Total.

The project team assessed risks relating to road use amongst children at the target schools, identifying lack of footpaths and safe crossings, and high vehicle speeds, as significant issues. Local infrastructure improvements were put in place to remedy these. Minibus safety for children being transported by bus to school was identified as another important safety issue, and driver training, including on vehicle maintenance and appropriate loading, was included in the project.

Alongside infrastructure improvements the GRSP team ran awareness raising initiatives at schools and in the local community. A key aim of 'Safe to school, Safe to home', is to build local capacity to enable replication and secure local support and/or funding to build sustainability in target schools.





Schoolchildren in Lusaka had to walk on unprotected verges (left). The footpaths installed as part of the GRSP project (right).



BOX 9:

# AMEND'S 'SARSAI' PROGRAMME SAVES LIVES

*"Before the zebra crossing and speed humps were put outside our school, vehicles would not stop to allow us to cross the road. We would ask the security man to help us cross the road... my friend, Amina, was once hit by a car and she bruised her left leg. Although they were minor injuries, after that, I was always scared crossing the road. Now I feel safer using the road, I know if I stand at the zebra crossing, vehicles will stop and allow me to cross and I will not be hit by a vehicle."*

**Rebecca Tumaini**

**Age 14, student at a SARSAI school in Dar es Salaam**

Amend's School Area Road Safety Assessments and Improvements (SARSAI) programme is focused on reducing road traffic injury around school areas in urban Africa where children are known to be at very high risk.

Amend maps and tracks the road safety situation around primary schools in the sub-Saharan African cities where they work, via in-person visits and phone calls to head teachers of every primary school. While all children in urban sub-Saharan Africa are at much greater risk of road traffic injury than their peers in the developed world, each city has a number of schools at which the injury figures are shocking.

For instance, Dar es Salaam, Tanzania has approximately 360 government-run primary schools. When Amend surveyed these schools, over 50% of them had at least one pupil who had been injured in road traffic in the last year. A closer look at the high-risk schools then showed that at least 22 schools have more than 1% of their pupil population injured in road traffic annually. It is at these extremely high-risk schools that Amend focuses its SARSAI programme.

SARSAI involves the systematic assessment of areas around schools, identification of measures to improve road safety, and the implementation of those measures. This work includes:

- A standardized assessment of school areas that looks at the existing behaviour of children, behaviour of drivers and other road users, and physical infrastructure,
- Government and community engagement,
- Identification of appropriate measures to improve safety, based on the assessment,
- Implementation of measures, including infrastructure improvements (such as speed humps, bollards to protect pedestrian areas, footpaths, signage, new school gates, etc.), and community and school road safety education, and
- Monitoring and evaluation

SARSAI is inexpensive, averaging just \$25,000 US per school area, and imminently feasible; it takes only days to implement the infrastructure once government approvals have been obtained and site analysis and community consultations completed.

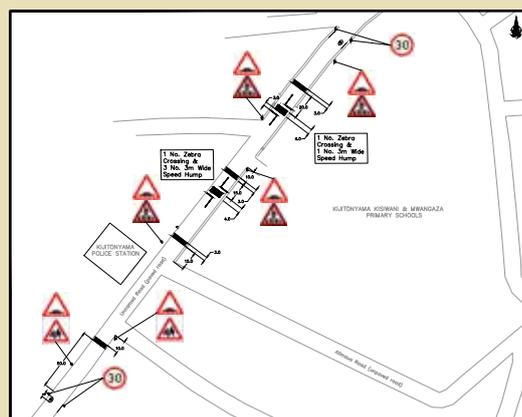


An example of cheap but effective traffic calming implemented as part of the SARSAI programme

Most importantly, SARSAI works. Amend, in partnership with the United States Centers for Disease Control and Prevention, conducted a multi-year population-based control study impact evaluation of SARSAI and found that the programme results in a statistically significant reduction in the number of children injured in road traffic. For every 286 children whose schools are part of the SARSAI programme, one RTI is prevented per year. This is the first road safety programme of any type proven to reduce RTI among children in sub-Saharan Africa.

Of course, over the long-term and at large scale, NGOs cannot be in the business of providing safe infrastructure. That is the job of governments. Therefore, Amend and its partners – including the FIA Foundation and the Global Initiative for Child Health & Mobility – are using the data-backed example of SARSAI to demonstrate to governments that effective, affordable, practical measures that save lives are readily available. Further, Amend and its partners are working with those governments to develop actionable plans for the provision of such measures at the schools that need them before children are injured.

In short, with SARSAI, Amend is saving lives today with proven solutions- at schools with the highest rates of RTI in the most at-risk cities in the most at-risk countries in the world – while advocating for the long-term, sustainable implementation of such measures in partnership with governments.



SARSAI pilot projects identify and implement infrastructure safety improvements

## Kijitonyama Kisiwani & Mwangaza Primary Schools

### SPEEDS BEFORE AND AFTER SARSAI IMPLEMENTATION (AT SCHOOL ENTRANCE)

#### 6:30am to 7:30am (Student Arrival Time)

	Before	After	% Difference
Average Speed	41 km/hr	17 km/hr	-59%
85% tile Speed	50 km/hr	21 km/hr	-58%

#### 2:00pm - 3:00pm (Student Departure Time)

	Before	After	% Difference
Average Speed	39 km/hr	18 km/hr	-54%
85% tile Speed	51 km/hr	21 km/hr	-59%

# Reducing vehicle speed

Alongside and in tandem with engineering solutions, speed enforcement is a vital component of strategies to reduce road traffic injury and protect children. Lower speeds around schools and neighbourhoods reduce crash frequency and ensure a lower risk of road traffic injury for pedestrians.

Lower vehicle speeds, especially those below 35 km/hr, have been found to drastically lessen the risk of fatalities (see Figure 8). Creating safer streets when cars are present means balancing the inherent tension between vehicle speeds and the safety of pedestrians, cyclists, and motor vehicle occupants alike. A range of tools can be used effectively to introduce speed management, including: enforcing a maximum speed limit on roads with high concentrations of pedestrians; time-based lower speed limits when students travel en route to school and back; and enforcing speed limits through the use of automatic speed cameras. In the most effective approaches, enforcement works in tandem with design and infrastructure measures.

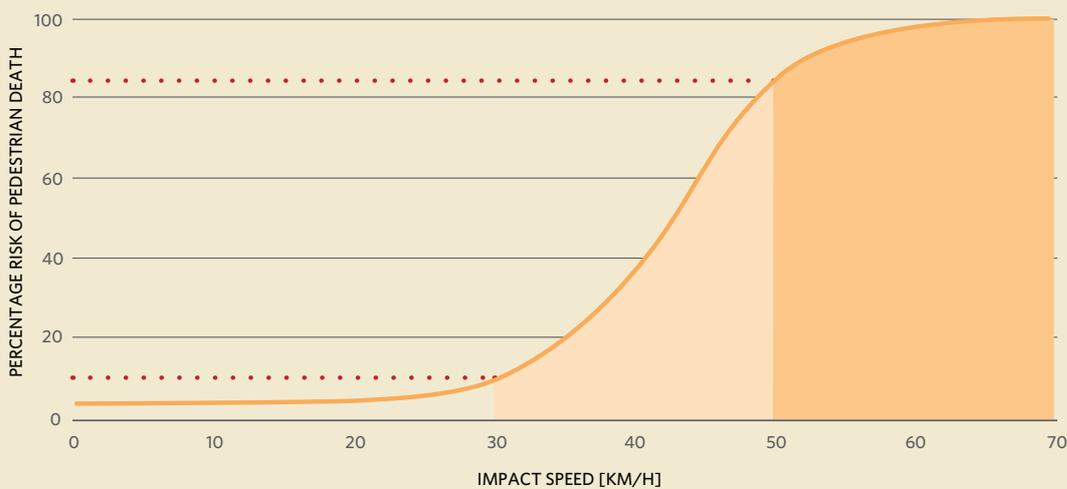
Low speed zones in urban settings also result in improved quality of life and community benefits, and encourage healthier and more sustainable transport modes such

as walking and cycling. Speed enforcement also tends to lend itself to greater public acceptance when focused on schools and neighbourhoods, and is therefore an effective approach to implementing road safety when taking into account political influences on decision making. Speed enforcement strategies are likely to be effective: when implemented in large scale over a sustained period of time; when clearly communicated to the public; and when they have effective detection systems to track violations and penalties in place.



With sufficient political commitment in place the approach is entirely applicable to the developing country context - in Ghana for example, the introduction of speed control measures on the Accra-Kumasi highway reduced crashes by 35% and fatalities by 55%<sup>41</sup>. Data collected over a two year period indicated that the 'speed factor' alone accounted for more than 50% of all Ghanaian road traffic crashes<sup>42</sup>. In this Ghanaian initiative, engineering was also an important component with traffic calming measures such as rumble strips a major contributor to the successful intervention.

**FIGURE 9: THE RELATIONSHIP BETWEEN PEDESTRIAN SAFETY AND THE IMPACT SPEED OF VEHICLES**



Based on crash data results, Tingvall and Haworth, 1999

BOX 10:

## CAMPAIGNING AND LEGISLATING FOR SPEED REDUCTION

The Global Road Safety Partnership and the World Health Organisation (WHO), supported with funding from Bloomberg Philanthropies, have worked in partnership with government ministries on speed management strategies in Kenya. Their work has helped to pave the way for a pending legislation that mandates reducing speed limits around schools to 30km/h. Focused on two sites, Thika and Naivasha, the project implemented speed reduction strategies including traffic calming, enforcement training for more than 1,300 police officers, and advertising campaigns which saw speed compliance rise from below 50% to more than 70%.



Bloomberg Philanthropies estimate that more than 100,000 children have been given greater protection as a result of the speed reduction and other measures of the project. According to testimony from project sites in Thika, the speed management measures have reduced incidents of road traffic injury for children attending local schools and attendance at school has increased post-intervention.

As part of the programme supported by Bloomberg Philanthropies a campaign was launched advocating for an amendment to the national Traffic Law traffic law limiting speed around all schools to below 30km/h and improving safety standards of school transport. Despite a bill being introduced into Parliament in 2014, the amendment has still not been approved. Kenyan NGOs including ASIRT Kenya and Safe Way Right Way continue to lobby for the speed reduction law, while the death toll continues to mount. The case demonstrates the need for long-term effort and donor support, and resilient NGO campaigns, to overcome the political sclerosis typical of so many African legislatures.

### Mobilising civil society

The little boy with whom we opened this chapter perceived a wrong and took a stand. By sitting down in the road, he joined the pantheon of civil rights campaigners who take action – even if just a silent and symbolic protest – to change the world. Because access to safe footpaths, walking free from traffic danger or toxic air pollution, is a basic human right. The right to a safe environment is enshrined in the UN Convention on the Rights of the Child. Governments that fail to provide a safe environment are in breach of the Convention. So, as an issue of global public policy and at the very practical level of local decisions on street priorities, this is an agenda on which civil society should be extremely active.

There is a network of road safety NGOs and other community activists across Africa which, in many cases, are working with government and succeeding in holding policymakers to account (see box 10). More needs to be done now to make common cause with NGOs also working on environmental issues, social justice, child rights, accessibility, surgical care and non-communicable diseases. Dialogue and collaboration between these diverse interest groups is happening at international level more and more, spurred by the SDG process and the imperative of achieving its ambitious targets. Strengthening the voice and flexing the muscle of civil society across borders within Africa will be vital if the walkability agenda is to progress.

BOX 11:

# AFRICAN LEADERS FOR AFRICA'S STREETS

Across Africa diverse voices are speaking out for safer streets, campaigning for speed reduction legislation, working for traffic calming measures in local communities or speaking up on global platforms to make the connections between reducing road traffic injury and powering economic development. Here we showcase some of the organisations, communities and individuals working for a better, fairer, safer future.

## Holding Government to Account in Zambia

The Zambia Road Safety Trust (ZRST) was formed in 2014, with the aim of advocating for road safety. It has a core of permanent staff as well as a network of over 1,000 volunteers all across the country.

Part of ZRST's mission is to raise awareness of the social and economic cost of what it sees as the government's failure to adequately address road safety. It does this through a concentrated media advocacy initiative, through which a press release is issued following each road traffic crash that results in multiple deaths or serious injuries. Each press release holds the government accountable through insufficient action to improve road safety, and stresses that road deaths and injuries are preventable, avoidable and predictable.

As well as distributing the press releases to national and international journalists, ZRST also developed a mailing list of over 1,000 contacts including senior government policy makers, the private sector, donor partners and civil society organisations.

ZRST's media advocacy efforts have resulted in unprecedented levels of news coverage for road safety in Zambia, including on television, radio, print media and online media.

## On the frontline in Ghana

Dr Nkechi 'Kemi Dike is an inspiration. Born, raised and educated between Nigeria and Ghana, she is currently a resident emergency medicine practitioner at Komfo Anokye Teaching Hospital in Kumasi, Ghana. She is also an assistant lecturer at the University of Cape Coast's School of Medical Sciences, where she inspires West Africa's budding doctors and surgeons.



Her interest in road safety began in Nigeria, where she found herself on the front line of treating road crash victims, having to perform amputations on a daily basis. Since transferring to Ghana, she has found a similar situation: motorcycles, high speeds, and low levels of helmet use, road infrastructure in terrible condition, and pedestrians at great risk. Her work strips away the abstract: late one night she saved the life of a road crash victim, later discovering he was the father of a close friend.

"It concerns me that in our part of the world, we take road traffic injury for granted. We see it happen to other people – and we see the physical, emotional, social and financial devastation that it brings to individuals and families – and all we do is pray that it will never happen to us. No public outcry, very poor enforcement of laws, no active behavioural changes advocated seriously, no rehabilitation for victims who have to live with disabilities."

"I was taught by my late uncle – a surgeon (and so much more) in rural Nigeria – to solve the problems facing our society and to leave positive footprints everywhere I go. Working to improve road safety in Africa, I hope to do exactly that and to inspire others to do likewise."

## School children demanding change

The New Kanyama Primary School in Lusaka, Zambia, has some very talented children. In 2015, the school choir won a national competition, and now the school's drama group, comprising students aged 10-16, is making headlines.



With the school located in a compound surrounded by dangerous roads, the children face the risk of injury every day. In 2014, the drama group wrote a play about road safety. The crash scene, when a brother and sister are both knocked down by a speeding driver, sends shivers down the spine. And the funeral scene, as the mother weeps, brings tears to the eyes.

But the most powerful part of the performance is when the children face the audience directly and tell them "You, Mother, you taught me to brush my teeth before I sleep, but you never taught me to cross the road safely", and "You, Mr Politician, you told me that road safety is everyone's responsibility, but you did not provide enough money for footpaths and pedestrian crossings."

The drama group first came to prominence when they performed at their school in front of a government minister in 2015. Since then, they have been invited to perform at numerous international road safety events, as well as at other schools and during Zambia's annual road safety week.

Hearing these words - these pleas - from the mouths of children, spoken so plainly and directly to adults, is an incredibly powerful form of advocacy.

## From the streets of Nairobi to the halls of the UN

Bright Oywaya is Executive Director of Kenyan NGO ASIRT Kenya. A former banker, she was paralysed in a road crash about 19 years ago and still bears the consequences. Now, a committed advocate for road safety and disability rights, she is a member of the board of the National Transport Safety Authority (NTSA). After retraining as a counselor, Bright works with road traffic victims in Kenya.



"Some family members don't help patients with a disability and instead lock them up. I visit them to show them that I have moved on, and so can their loved ones," Bright says. "Without hope, you can die. One of my patients died after years of counselling simply because she gave up. My involvement with people with spinal injuries was the beginning of my real life. Before, I lived in a cocoon where I thought that all there was to life was waking up, going to work and going back home."

Bright has been a leading advocate for legislation to lower speed limits around schools, and has taken the road safety message to the global stage. In January 2014 she spoke on a panel at UN Headquarters in New York alongside Kenya's Ambassador to the United Nations, Macharia Kamau - co-chair of the negotiations to agree the Sustainable Development Goals - on the need to include a road safety target in the SDGs. Direct and painful personal experience of road traffic injury, and the appalling impact it has on hundreds of thousands of ordinary Africans, provided compelling testimony for international policymakers.



A frame from Luc Besson's 'Save Kids Lives' film showing the reality of school journeys for many African children

The Global Alliance of NGOs for Road Safety ([www.roadssafetyngos.org](http://www.roadssafetyngos.org)), a vibrant and growing civil society network, includes more than 40 members across sub-Saharan Africa. While some of these NGOs are comparatively well-funded and influential, others struggle for resources and impact. The NGO Alliance is benefitting from significant private sector support, notably from FedEx and Allianz, to develop mentoring and training programmes and provide essential campaigning funds. At the 2nd Global High Level Conference on Road Safety in Brasilia in 2015 FedEx announced financial and logistical support for an Alliance Empowerment Programme, which is training NGO advocates. The NGO Alliance has spearheaded the 'Save Kids Lives' campaign, which promotes child traffic injury prevention and secured more than a million signatures for a petition ahead of the Brasilia Conference, and is also mobilising NGOs in support of the Three Star Coalition. The network of automobile clubs belonging to the non-profit Federation Internationale de l'Automobile (FIA) is another potentially powerful network in the region, with clubs working on mobility issues in a dozen sub-Saharan African countries. In 2015 the FIA and the FIA Foundation collaborated with the French movie director Luc Besson to produce a 'Save Kids Lives' advocacy film featuring the experience of South African children on their school journey. The film has been viewed by more than 15 million people and by leaders including Ban Ki Moon and His Holiness the Pope.

## Securing donor support

Private sector and philanthropic support for civil society is vital to develop and sustain advocacy voices within countries and across the region, and to support the demonstration projects which provide the evidence to fuel larger scale investment. The Bloomberg Initiative for Global Road Safety is the strongest example of a major private philanthropy investing in sub-Saharan Africa, with work in Kenya (see box 9) and Tanzania, and now in the cities of Addis Ababa and Accra, where city authorities are being supported to implement both behavioural awareness campaigns and infrastructure improvements. Bloomberg Philanthropies is also providing grants to NGOs in the African countries in which it operates, overseen by the Global Road Safety Partnership. In addition to its work with the Bloomberg initiative GRSP, a public-private partnership hosted at the International Federation of the Red Cross and Red Crescent, is supporting safe routes to school projects in South Africa and Zambia, with funding from Shell, Toyota and Total.

Examples of private sector involvement in road safety can be found all over Africa. Some companies recognise the direct benefit of safer roads on their business – they see the direct impact of their trucks being written off, their stock lost, or their employees killed on their bottom line. Other companies recognise

that by supporting road safety activities, they can engage the communities they work in, or have their brand associated with corporate social responsibility.

However, much of the private sector involvement is piecemeal – there is often little coordination with other road safety stakeholders or with wider road safety efforts, and sometimes the focus is more on publicity than on actually improving road safety. This can lead to repetition, competition and wasted effort: the whole being less than the sum of the parts. But this does not have to be the case.

One of the best examples of the private sector's involvement in promoting road safety can be found in Namibia, where the Private Sector Road Safety Forum (PSRSF), a voluntary collaboration of local businesses, is committed to improving road safety in the country. Its members come from the financial sector, the insurance sector, the alcohol industry (a not uncontroversial partner in the road safety sector) and the automotive industry. The forum coordinates with government and civil society organisations, to ensure that it is contributing to the delivery of Namibia's national road safety strategy, with activities including programmes on schools' road safety and the prevention of drink-driving, the establishment of a self-regulating organisation for the logistics industry, and development of a strategy to formalise the driving school sector. The overall administration and implementation of activities is managed by a small secretariat.

Another example of the private sector taking a more holistic and long-term approach to support for road safety is the Puma Energy Foundation. Puma Energy – an energy company with interests across the developing

world, including petrol stations – began working with Amend in 2013, funding improved pedestrian infrastructure around schools, the distribution of reflector-enhanced school bags and using drawing competitions to teach children how to stay safe on the roads. Since then, with support of the Puma Energy Foundation, based in Geneva, the partnership has expanded to activities in a dozen countries across Africa and growing. Together Puma Energy and Amend are implementing road safety interventions – with a focus on schools and children – and using the positive results of those interventions to advocate for increased political will for road safety and leverage increased funding.

Another energy company, Total, is also trying to play a strategic role, partnering with the World Bank in the 'Africa Road Safety Corridors Initiative', which aims to reduce fatalities along Africa's major transit corridors and road networks. The first corridor being targeted by the campaign is the Mombasa Kampala Northern Corridor, which is East Africa's deadliest corridor. As part of the initiative the Kenya NGO 'Safe Way Right Way' is being supported to implement road safety awareness amongst communities living along the corridor, and has advocated for the approval of new legislation to reduce traffic speeds around schools.

These are positive examples of the contribution being made by donors. But significantly more funding is needed, from private sector, philanthropic and bilateral sources if civil society is to be sufficiently strengthened to meet the challenge of the Sustainable Development Goals. Demonstrating impact and links to wider development, health and environment agendas will be critical to expanding the donor base and the scale of coordinated activity to protect Africa's children.



A school education programme in Namibia implemented by Amend with support from the Puma Energy Foundation

BOX 12:

## A NEW SDG PARTNERSHIP FOR CHILDREN

With at least 500 children killed every day on the world's roads, thousands more injured in road traffic crashes and millions suffering from chronic respiratory illness or stunting as a result of air pollution, a significant proportion of which can be attributed to motor vehicles, there is a clear need to make safe and sustainable mobility a priority policy issue. The Global Initiative for Child Health & Mobility is a partnership including founding members UNICEF, UNEP, Save the Children, Overseas Development Institute, the World Resources Institute and the FIA Foundation which is working to support three key rights of the child, consistent with the UN Convention on the Rights of the Child:



**GLOBAL INITIATIVE FOR  
CHILD HEALTH  
AND MOBILITY**

- Safe, accessible, low-carbon mobility to promote equity and combat poverty
- Clean air and a healthy environment;
- The role of safe and healthy mobility in enabling the right to an education.

This practical partnership for the Sustainable Development Goals is focusing on global advocacy; research and evidence building through demonstration programme implementation; and support to countries and cities through technical assistance and catalysing national action coalitions. The Initiative's work includes supporting national and regional partners showcased in this report – such as Amend and the International Road Assessment Programme – in securing policy change and financing to scale up proven road traffic injury interventions. The key objective is to promote the vision that by 2030 every child should enjoy a safe and healthy journey to school, free from traffic danger or harmful air pollution.

Components of the initiative include a partnership between UNICEF and the FIA Foundation to build road safety capacity and support for legislative change through UNICEF country offices in South America and South East Asia. Save the Children will also provide advocacy support. The World Resources Institute is focusing on assisting cities with urban design change to enable safe walking and cycling; while UNEP will work with countries to provide similar active mobility technical assistance, as well as undertaking air quality research and interventions. ODI is undertaking a two year research study on the political economy of implementing sustainable mobility change, which will include recommendations for specific cities.

In Africa, working with UNEP, WRI and with technical and regional partners including Amend, iRAP and GRSP South Africa, the initiative is focusing on building the evidence and making the case for safe walking and cycling infrastructure, emphasising the journey to and from school.

The Global Initiative for Child Health & Mobility welcomes interest from potential new partners able to make a technical or financial contribution to this effort to provide safe and health streets for every child.

[www.childhealthinitiative.org](http://www.childhealthinitiative.org)



Road safety advocate Zoleka Mandela speaking at the Child Health Initiative launch



Partner organisations in the Child Health Initiative include UNICEF, FIA Foundation, ODI, World Resources Institute, Save the Children & UNEP



The Child Health Initiative is focused on delivery of the Sustainable Development Goals



Cornelius Williams, UNICEF Global Chief of Child Protection, at a Child Health Initiative briefing on SDGs, UN Headquarters

# STEP CHANGE: A SAFE JOURNEY FOR EVERY CHILD



Every child deserves a safe and healthy journey to school, to play with their friends, to run household chores, to stretch their legs and flex their independence. It is their right. As Africa urbanises, as cities grow, as motorisation inevitably increases, as the population of young people expands, protecting this right becomes an urgent necessity. We face a fork in the road, towards either a future where children and young people are left to fend for themselves, forced to the exposed edges of ever busier roads; or towards a future of shared space, liveable cities, walkable streets, equitable transport, urban and social policies that put people first.

A step change in approach is needed, and the advent of the Sustainable Development Goals provides the necessary momentum. The inclusion of a specific road safety target in the Health Goal and a sustainable mobility target in the Cities Goal gives an international mandate for action. The deliberations of governments in defining the Habitat III 'New Urban Agenda'<sup>43</sup> have further demonstrated the relevance of active mobility policies for road traffic injury prevention, carbon emissions reduction, clean air strategies and combating non-communicable 'lifestyle' diseases.

Despite relatively low motorisation levels in sub-Saharan Africa, African children are twice as likely to die on the road as a child in any other part of the world. This is, quite simply, unacceptable. And it can, quite simply, be prevented.

This report has shown that focused action to improve walkability, at its essence to provide footpaths and streets and crossings protected by speed humps, has the potential to dramatically reduce the injury toll for children and to provide a safer and more pleasant environment for all. Applied research by Amend, iRAP, GRSP and others has demonstrated the effectiveness of a focus on school routes – from home to school gate – to ensure every child can reach their school, their education, their future, safely and in comfort. School catchment areas provide interlocking zones covering whole communities, whole cities. Taking a strategic approach to providing physical protection using school journeys as the map, the 'desire line' of a child's feet, should now be a priority. Promoting this approach is a key policy objective for the new Global Initiative for Child Health & Mobility, comprising several international agencies, donors and research partners (see box 11).

We don't underestimate the challenges, institutional, political, technical, financial, that governments and local authorities face. Africa has the world's most dangerous roads for a reason: a combination of

unprotected high speed roads running through pedestrian populations without the checks and balances of effective road safety management, enforcement or political commitment to preventing death and injury. This situation, and these structural weaknesses, will not change overnight, and it is ambitious to expect significant change in time to meet the 2020 SDG road safety target to halve road deaths.



But change has to start somewhere. And while tackling road user behaviour through licencing, training, awareness and enforcement is important, it is unlikely to be widely effective in the short term given the context of the weak institutional capacity in many African countries. What is needed now is a simple vaccine: a separated footpath on every street; physical traffic calming measures to slow traffic to within a safe tolerance for the unprotected human body; and safe crossing points, protected by physical calming measures, which reflect the practical needs of pedestrians rather than the mental contortions of car-centric highway engineers.

A concerted effort to implement such a programme would transform African cities and towns for the better. The tools, and the evidence that they work, are available. Now international health and environmental donors are needed to kick start the effort, to support governments with training and technical assistance, and communities with awareness raising and advocacy. Where such guidance is already being provided, for example through strategic support from UNEP's Share the Road initiative, and through the practical and technical advice offered by organisations such as the World Resources Institute, iRAP, GRSP and Amend, results are being quickly demonstrated. More funding is needed, the effort must be ramped up.

Ultimately it is for communities and their representatives to decide that protecting their children should be a priority. Establishing national or city coalitions to advocate for safe journeys for children, and then to put in place the practical decisions needed to deliver the objective, should be a first step. A first important step on a pathway to a safer, healthier, low carbon future. A step change for mobility policy, towards liveable, walkable streets. An agenda for Africa's children.

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# AMEND

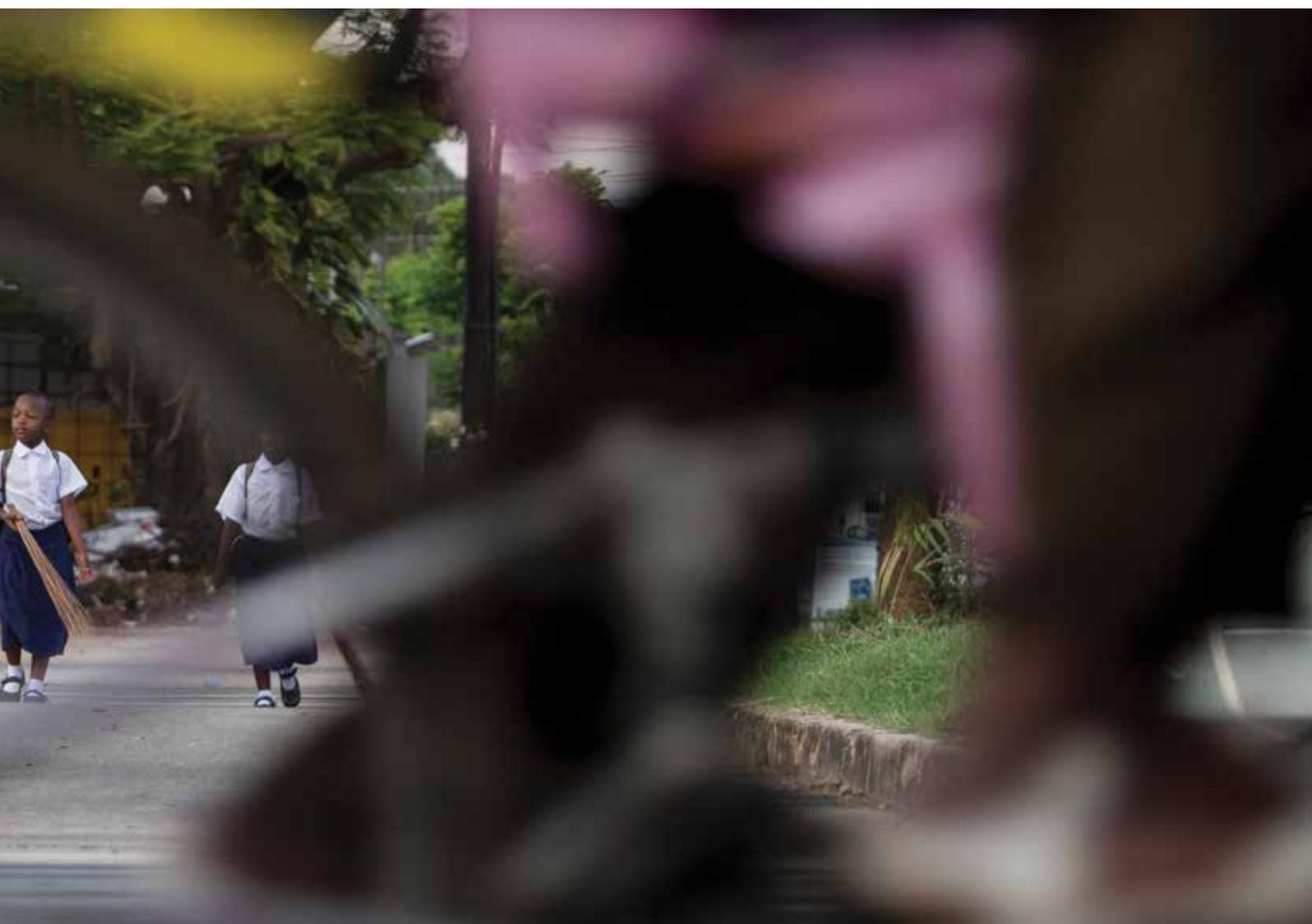
Amend's vision is a future in which vulnerable road users in sub-Saharan Africa are as safe as anywhere in the world. Our mission is to develop, implement, and evaluate evidence-based interventions to reduce the incidence of road traffic injury among the most vulnerable road users in Africa today while working to help create an environment for long-term, sustainable injury reduction.

Amend has offices in Ghana, Tanzania, and Mozambique, and we work throughout sub-Saharan Africa. Our wide-ranging road safety programs all have two things in common: a clear focus on preventing road traffic injuries in Africa's highest-risk populations, and a scientific basis. Visit [www.amend.org](http://www.amend.org)



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The FIA Foundation is an independent UK registered charity with an international reputation for innovative global road safety philanthropy; practical environmental research and interventions to improve air quality and tackle climate change; and high impact strategic advocacy in the areas of road traffic injury prevention and motor vehicle fuel efficiency. Our aim is to ensure 'Safe, Clean, Fair and Green' mobility for all, playing our part to ensure a sustainable future. Visit [www.fiafoundation.org](http://www.fiafoundation.org)









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