



---

# SAFE TO LEARN

---

SAFE JOURNEYS  
TO SCHOOL ARE  
A CHILD'S RIGHT

---

unicef 

 FOUNDATION

# Acknowledgements

**Authors:** Avi Silverman and Saul Billingsley

**Design:** John Pap and Diana Fauner

**Grateful thanks to the following people for assistance and technical contributions:** Monalisa Adhikari, Programmes Coordinator, FIA Foundation; Nicholas Alipui, Director Post-2015, UNICEF; Ketan Chitnis Director, C4D UNICEF Vietnam; Richard Clarke, Researcher, FIA Foundation; Chiedza Mavengere, Project Manager, Childsafe South Africa/Red Cross Memorial Children's Hospital Cape Town; Rob McNerney, CEO, iRAP; Ayikai Mills-Tettey, Amend School Area Road Safety Assessments and Improvements (SARSAI) Manager; Valeria Motta, Co - Director, Ejecutivo Comunicación & Alianzas Fundacion Gonzalo Rodriguez; Bright Oywaya, Executive Director, ASIRT Kenya; Maria Quattri, Researcher, Overseas Development Institute (ODI); Nani Rodriguez, CEO, Fundación Gonzalo Rodríguez; Richard Stanley; Bui Van Truong, Regional Monitoring and Evaluation Manager, AIP Foundation; Kevin Watkins, Executive Director Overseas Development Institute (ODI); Jeffrey Witte, Executive Director, Amend; Allison Zerkowitz, Thailand Country Director, Save the Children.

**Photography credits:** Cover photo Georgina Goodwin for FIA Foundation; AIP Foundation; Peter Amos, Amend; Walter Bibikow, Getty; Matilde Campodónico, Fundacion Gonzalo Rodriguez; claudiolivizia, Thinkstock; Diverse Images, Getty; Edward Echalalu, Amend; gbh007, Thinkstock; Georgina Goodwin, FIA Foundation; LuminaStock, Thinkstock; Michal Krakowiak, Getty; NYC Vision Zero; Paper Boat Creative, Getty; Richard Stanley, FIA Foundation; Abel Uribe/Chicago Tribune, Getty.

---

# **SAFE TO LEARN**

---

**SAFE JOURNEYS  
TO SCHOOL ARE  
A CHILD'S RIGHT**

---

# CONTENTS

<b>INTRODUCTION</b>	<b>1</b>
<b>CHILDREN: AT RISK ON THE ROAD</b>	<b>5</b>
<b>AN ANTI-POVERTY CAUSE</b>	<b>9</b>
<b>TOWARDS ZERO</b>	<b>17</b>
<b>SAFE ROUTES TO SCHOOL</b>	<b>23</b>
<b>CHANGE BEGINS HERE!</b>	<b>27</b>
<b>BUILDING A MOVEMENT</b>	<b>39</b>
<b>REFERENCES</b>	<b>43</b>
<b>ABOUT</b>	<b>45</b>



**THE CHILDREN BEHIND THE STATISTICS P3**



**AT THE CENTRE OF DEVELOPMENT P15**



**SAFE ROUTES TO SCHOOL P23**



**CHILDREN: AT RISK ON THE ROAD P5**



**AN ANTI-POVERTY CAUSE P9**



**TOWARDS ZERO P17**



**10 STRATEGIES FOR KEEPING CHILDREN SAFE P21**



**CHANGE BEGINS HERE! P27**



**BUILDING A MOVEMENT P39**

# INTRODUCTION



Every day more than 500 children lose their lives on the world's roads.<sup>1</sup> Many are killed on the journey to or from school – losing their lives while walking to their daily lessons, hit by speeding traffic while attempting to cross a four lane highway, falling from the family motorcycle, or becoming a casualty while sitting unrestrained on the school bus.

And for every child that dies, another four are permanently disabled. Ten more are seriously injured. Thousands of children, every day, cut down while playing, shopping or getting an education. The equivalent of two large secondary schools are emptied of children in this way every day.

All tragedies; all preventable. Because we know how to prevent child deaths, disabilities and injuries on the road. By implementing a 'Safe System' approach beginning with effective institutions and rule of law; with measures to improve infrastructure safety; to make vehicles safer and more pedestrian-friendly; to reduce speed limits wherever and whenever children and vehicles are likely to meet; by promoting walking and cycling and providing proper facilities and equitably sharing the road to enable them; by investing in safe public transport; and by supporting sustained and fair enforcement of the laws: by implementing these approaches many countries, in every income bracket, have managed to drive down road traffic casualties.

So why do so many children continue to die? Because too many countries have not yet got to grips with their road traffic injury epidemic. And because children, adolescents and young adults are particularly vulnerable on the roads. They need extra care and protection.

We know that income is a big factor. Poorer countries have proportionally higher road traffic fatalities than richer nations. Within all countries poor communities, ill-served by public transportation or land-use planning, forced to walk without the means to do so safely, are particularly impacted.

A quarter of a century ago the world agreed that children, among society's most vulnerable, need special protection, special rights. The UN Convention on the Rights of the Child was the result. Yet we estimate that since 1989, when the Convention was approved, more than 5.5 million children under the age of 19 have been killed on the world's roads.<sup>2</sup>

This is unacceptable. Children should not face daily, high speed, violence at the hands of adults. We all have a duty to do whatever we can to challenge and change this.

And we can make roads safer for children. We can do it by implementing policies that will protect children now and in the future, will engender safer road user behaviour in future generations, will ingrain healthy lifestyles, can help to reduce air pollution – another major killer and disabler of children – and assist in the efforts to combat climate change.



The new Sustainable Development Goals to be finalised this year can generate new momentum ensuring that measures to protect the poorest and most vulnerable are a development priority. Targets for road safety are included in two complementary Goals: on health (goal 3) and cities (goal 11). Their inclusion is recognition by the international development community that road traffic injuries need to be tackled, and fast.

This report focuses on one particular area of policy and implementation: the journey to and from school. UNICEF and the FIA Foundation have come together to work on this area because we care about increasing and enhancing children's access to education and life opportunity; we share a concern about child health; and we want to see a new impetus to reduce child injury on our roads and in our public spaces. We hope this report will help to spark a new global movement to make the school journey safe for all the world's children.

# THE CHILDREN BEHIND THE STATISTICS



“I wish I could just hold him once more and protect him”, bereaved father On-see told me in Bangkok. He said goodbye to his son Danaisak as he left for school. The next time he saw him was in a morgue. Danaisak, aged 13, died from head injuries sustained in a motorcycle crash.

This year, over 1.2 million people will die as a result of road traffic injury. That’s roughly ten lives lost by the time you finish this article. Countless millions will be left with long-term injuries. Over 90 per cent of the victims will live in developing countries.

The sheer scale of the carnage is not widely recognized. For adolescents and young adults in developing countries, road traffic injury is now the single biggest cause of death. In Africa, cars and trucks kill more 5-14 year old children than killer diseases like malaria and AIDS. Yet the road injury epidemic is only now beginning to register on the international agenda.

Fatality is just the tip of an iceberg. In countries lacking accessible health systems and social welfare safety nets, a road traffic injury is all too often a one-way ticket to poverty.



Other costs are beyond estimation. What price do you put on the grief and trauma that comes with the loss of a child, a parent, a sister or a friend?

I have seen some of the human tragedy behind the statistics. I've spoken in South African townships with mothers who have been robbed of their children. In Mumbai I met Shabir Sheikh, a twenty-three year old. Six years ago he was a promising secondary school student who dreamt of becoming an engineer. Today, he is still recovering from the limb-shattering injuries he sustained.



Kevin Watkins with bereaved father On-See in Bangkok

If you want to see the global road crisis in action there is no better place than the road linking Kenya's capital Nairobi to the port of Mombasa. Lovingly upgraded into an eight lane superhighway with support from international donors, speed is up and journey times are down.

Pity they forgot about the children. Every morning, you can see hundreds of them crossing the road to get from their homes in the sprawling slum of Kibera to primary school. "It makes me scared every single day," Mary Kitunga, a twelve year old told me. She had just crossed the road carrying her four-year old brother. For point of reference try imagine your kids crossing a motorway to get to school.

However dire the situation is today the future looks much worse. We are heading for a perfect road traffic injury storm. Economic growth and the rise of the middle class in developing countries are driving up demand for cars. Meanwhile, population growth and urbanization is putting more people - especially children - in harm's way.

But action can be taken. This year, governments from around the world will agree on a new set of Sustainable Development Goals for the post-2015 period. The current proposal includes a goal for halving deaths from road traffic injury by 2030 — an outcome that would save many millions of lives. The proposal is part of a wider package aimed at promoting sustainable transport systems and liveable cities.

The SDG target represents a new opportunity for tackling road safety and protecting children. Real progress will require concerted action on the part of many actors. Within countries, effective road safety planning requires cooperation across many ministries and government agencies. Achieving that outcome will in turn require the development of new coalitions bringing together health professionals, teachers, parents and others. At an international level, development agencies and civil society organisations need to start treating road traffic injury as a core element in their activities.

We can set an early example by demonstrating the potential of safe routes to school for children across the developing world. With leadership from UNICEF, engagement by major child development NGOs like Save the Children, support from philanthropies and the private sector, and partnership with many road safety organisations, this 'Safe to Learn' coalition, focusing on speed bumps and sidewalks, cycle lanes, helmets and school bus seat belts, is listening to children, speaking up for children's rights and expectations, and working for their health, education and freedom of mobility.

**Kevin Watkins is Executive Director of the Overseas Development Institute**

# CHILDREN: AT RISK ON THE ROAD



## CHILDREN: AT RISK ON THE ROAD

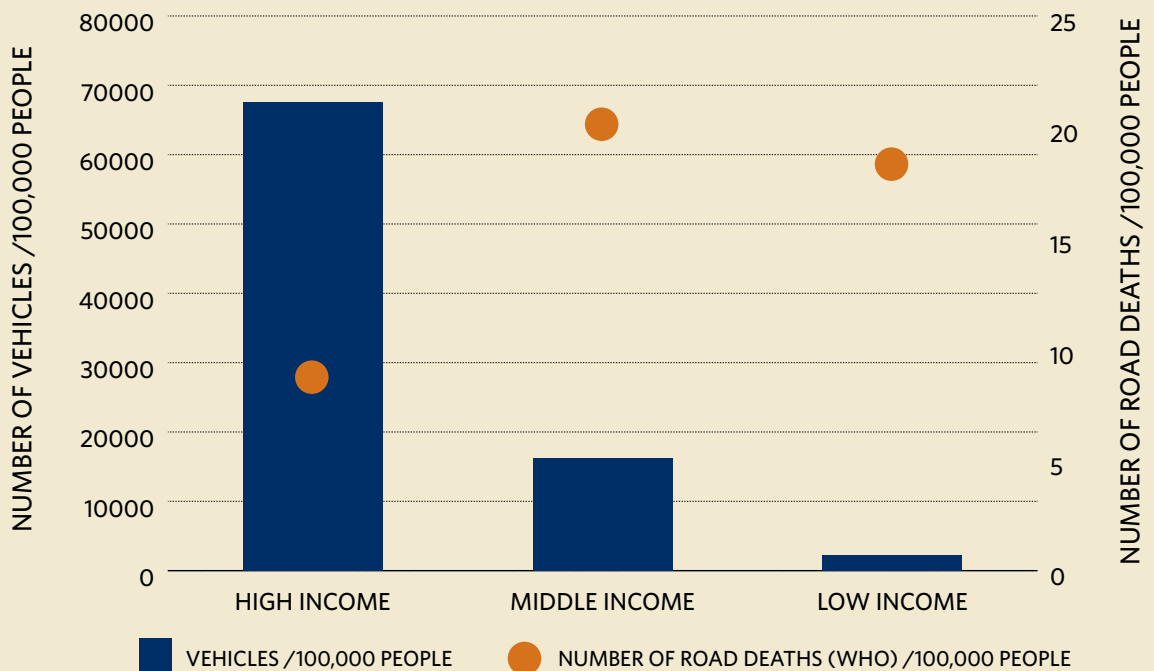
Globally, over 1.2 million people die every year from road traffic injuries.<sup>3</sup> Road traffic injuries are the number-one killer of young people aged 15-24.<sup>4</sup> For boys and young men aged from 5 to 29 years old, this is the leading cause of death.<sup>5</sup>

More than 500 children and adolescents under the age of 19 die every day from road traffic crashes. Data from the Global Burden of Disease estimates that every year nearly 220,000 children and adolescents die from road traffic injuries. For every death, a life-changing disability. For every disability, several serious injuries.

Children (and people of all ages) are more likely to die in middle and low income countries, while in rich countries, children in lower income brackets have a greater exposure to road traffic injury than those in higher income groups.

And, while the rich world has far higher levels of motorisation, the risk of death per vehicle is significantly greater in poorer countries. High income countries, learning harsh lessons in the first half of the first automobile century as traffic deaths steadily rose, began to act. Since the 1970s, increased motorisation has been matched by investment in road safety measures including seat belt use, motorcycle helmets and drink driving enforcement; requirements for tougher vehicle regulation, reinforced by independent consumer crash tests of cars; driver training and licencing regimes; and an increasingly sophisticated recognition of the need for speed management and improved road design. All of these factors combined have resulted in a steady reduction in road traffic fatalities, even against a backdrop of rising traffic levels. Of course, some of this downward trend is almost certainly due to reduced exposure to traffic as mobility patterns 'evolve' and people move from walking or cycling to sitting inside cars and buses.

**FIGURE 1: NUMBER OF VEHICLES AND ROAD DEATH BY COUNTRY INCOME LEVEL**



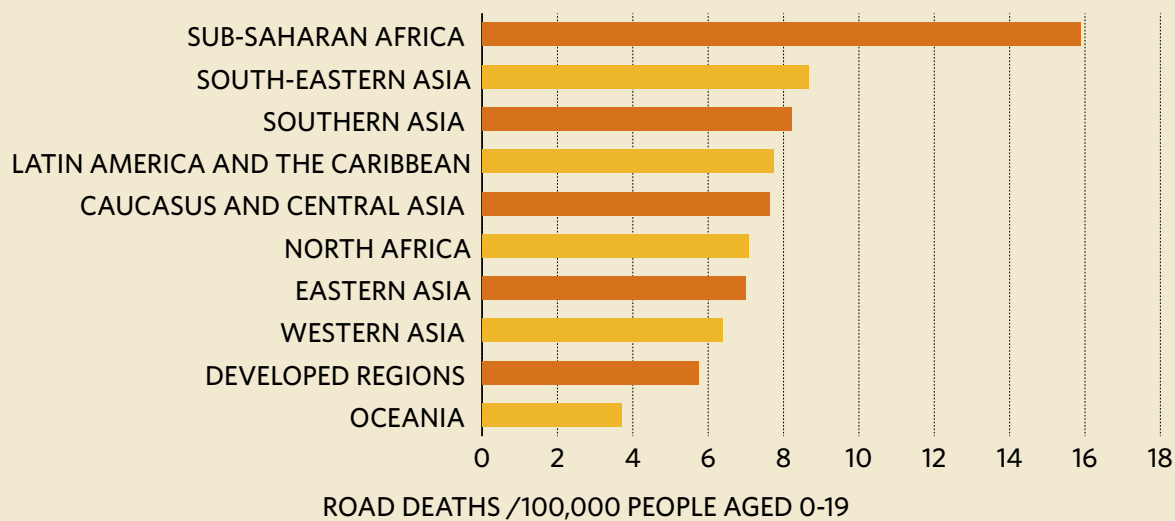
Source: FIA Foundation analysis based on WHO data on number of deaths and registered vehicles

In countries in the South, with fast developing economies and rapid motorisation, the same gradual pacing of road safety implementation, generational learning and improved safer infrastructure has not yet taken place. Ever increasing numbers of vehicles pour onto unsuitable roads, often driven by first generation motorists with little training. Police enforcement can be inadequate, and corruption is often a major issue. Vehicle standards for safety are sometimes non-existent, and there are low levels of awareness of understanding of the need for seat belt and motorcycle helmet compliance. Mixed use of roads, with large numbers of pedestrians, bicycles, traditional modes of transport like

horse-drawn carts, and motorcycle rickshaws vying for space with cars, buses and trucks provides opportunity for conflict, particularly as vehicle speeds rise. At least half of those killed and injured are 'vulnerable road users': pedestrians, cyclists, motorcyclists...and children. For all these reasons, as Figure 2 shows, the proportion of populations killed in middle and low income countries is often double or triple that of the OECD, despite much lower vehicle numbers.

Sub-Saharan Africa, for example, has the highest rate of road death per population combined with the lowest vehicle numbers.

**FIGURE 2: CHILD ROAD DEATHS IN WORLD REGIONS**



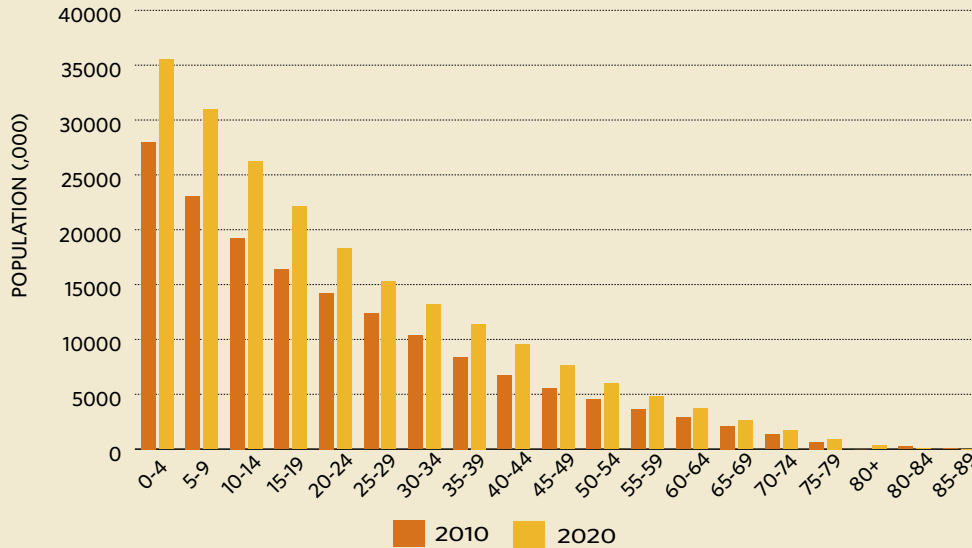
Source: FIA Foundation analysis of IHME Global Burden of Disease data

Between 2015 and 2030, the global population is expected to increase by 15%, from 7.3 billion to 8.4 billion. Many countries are expecting population growth above 50%. In Niger, population growth is expected to be 79%, with Mali expecting a 61% increase and Zambia a 60% increase.<sup>6</sup> Countries in Sub-Saharan Africa, like Nigeria in Figure 4 below, are

already experiencing a 'youth bulge' as populations increase.

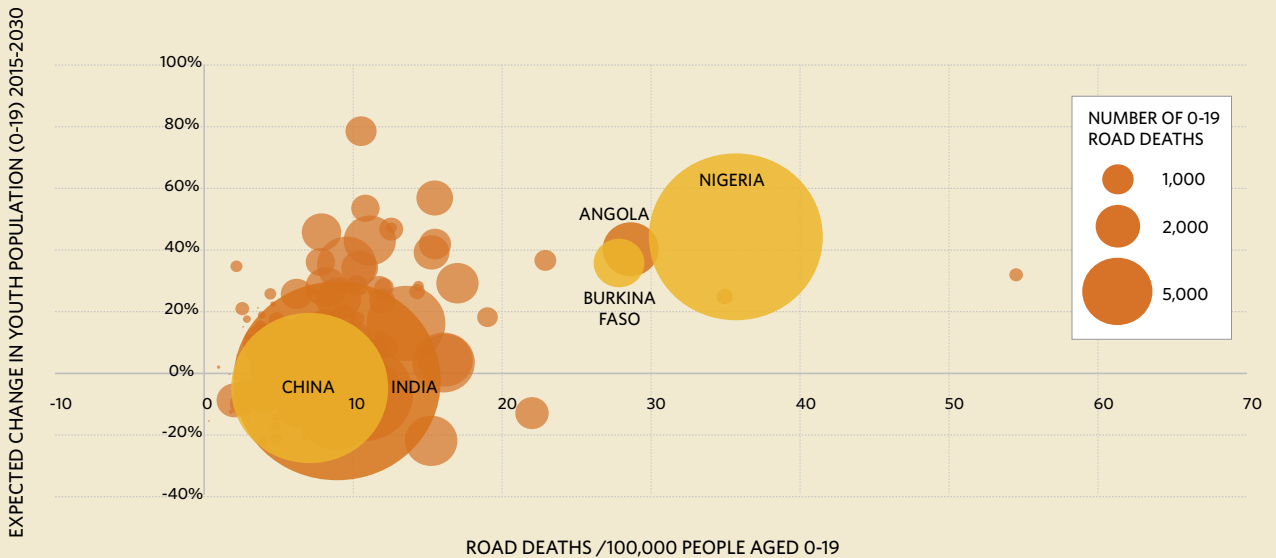
For this region as with other low and middle income regions already suffering high numbers of child road deaths, demographic shifts combined with rapid motorisation and low levels of safety, should spur an urgent reaction.

**FIGURE 3: NIGERIA: PROJECTED DEMOGRAPHIC CHANGE**



Source: FIA Foundation analysis of UN population projections

**FIGURE 4: COMPARISON OF COUNTRIES WITH HIGH LEVELS OF CHILD ROAD DEATHS AND EXPECTED YOUTH POPULATION CHANGE**



Source: FIA Foundation analysis based on UN population projections and IHME Global Burden of Disease data

# AN ANTI-POVERTY CAUSE





Road fatalities and injuries are not only a tragedy for children and their families. They also represent a significant burden on health systems; a cause and confirmation of poverty; and a brake on educational opportunity. Estimates of the economic cost of road traffic injuries range from 1-5% of GDP, varying by country, and the overall cost of fatal and serious injuries in just the 80 lowest income countries is estimated to be a staggering \$220 billion per year.<sup>7</sup>

Studies conducted over the past decade have confirmed the link between road crashes and poverty. A recent review investigated the direct costs to people injured in road traffic crashes as part of a costing exercise in Mexico. Their study shows the high cost (both direct and indirect) road traffic accidents impose in households affecting their economy and leading families to lose wealth assets, and get into debt or poverty.<sup>8</sup>

A study of road crashes and poverty in Yangon, Myanmar, found that the poor are at a higher risk of

road crashes, and that working families can be pushed into poverty as a consequence of a road crash.<sup>9</sup> The study highlighted the lasting impact road crashes have on both poor and non-poor families, and confirmed the findings of other studies, for example in Bangladesh and India, that the costs and legacy of road crashes affect whole families. Adult road crash victims are often the family's sole breadwinner, and their deaths can radically diminish family income, potentially pushing the family into poverty.<sup>10</sup>

Road crash victims who survive, but with long-lasting injuries or disabilities, often face a difficult journey back into employment. A 2013 study in South Korea found that 70 percent of those disabled in a road crash and 28 percent of non-disabled victims of road crashes experienced job losses after the incident. Finding work again could prove difficult. Almost 68% percent of the disabled and 24 percent of the non-disabled who lost their jobs remained unemployed for long periods of time.<sup>11</sup> For children, in addition to the traumatic effect of seeing an

# ONE BOY'S LAST WALK HOME FROM SCHOOL



Phal with his mother

Around ten million children are estimated to be injured in road traffic crashes each year, and many are disabled as a consequence.<sup>12</sup> Non-fatal injuries are poorly documented, with sophisticated injury surveillance systems rare (just half of high income countries, and less than a quarter of low income countries, have national injury information systems, according to WHO).<sup>13</sup> But community-based surveys in Asia have found that for every child killed in a road collision, four experienced permanent disabilities.<sup>14</sup> It may be assumed that up to 700,000 children under the age of 18 are being

permanently disabled in road traffic crashes each year, while millions more experience long term temporary disability.<sup>15</sup>

Phal, aged 9, is one of these children. He lives on the semi-rural edge of Cambodia's capital, Phnom Penh. When he was 5 years old he was walking home from school when he was hit by a car. The main entrance to his school opens onto a busy road. A constant stream of construction trucks thunder past. Motorcycles weave around potholes in the dust. There are no pedestrian



facilities of any kind, no sidewalks or crossings. The edge of the road blends with foliage stirred by the vibration of passing vehicles. This is where schoolchildren – as young as five – are expected to walk.



Phal's school opens onto a busy road

Phal's story describes the unrecorded experience for hundreds of thousands of children disabled in road traffic crashes. His mother, Sok Chin Da, was a worker in a garment factory until his accident. When news came that her son was hurt she had to ask for permission to leave the factory. She didn't have enough money to pay for decent and immediate medical attention. Phal suffered some brain damage and lost the use of his legs. His family is poor: because he needs full-time care his mother has given up work and his father's is now the only income, so the road traffic crash has made this low income family poorer still.<sup>16</sup> They live in a one room wooden home perched on stilts, because the area is prone to flooding.

Phal has not received any rehabilitative care, but attempts to exercise his legs on rudimentary parallel bars in front of the porch. A charity has provided his family with a wheelchair. After missing school for almost a year after the crash he is now once again attending, and his parents have moved to a new home a few yards behind a rear gate to the school compound. It makes it easier for his mother

to push Phal to class in his wheelchair in the morning and to pick him up in the evening. His classroom is on the first floor of the school, so she has to carry him up the stairs, but he'll soon be too big for her to lift. For this little boy, and his family, the future is unclear.

Much more could be done to help children like Phal. The most cost-effective strategy would be to prevent the injury from happening in the first place, for example by ensuring that financing provided for school buildings and teachers is complemented by funding for safe infrastructure along the route to school. Post-crash care and rehabilitation is inadequate or non-existent in many countries, particularly if you are poor. What could be repairable injuries can become life-long disabilities because appropriate surgical care is unavailable. Post-traumatic stress, particularly affecting children, is often undiagnosed or untreated.<sup>17</sup>



The road where Phal's injury occurred has no pedestrian protection

Phal enjoys school and playing with his friends. He would like to be an entrepreneur when he grows up. Like him, all children disabled in road traffic crashes deserve to have the opportunity to realise their potential. An avoidable injury received while walking home from school should not become a life sentence, and an education interrupted should not become an education abandoned.



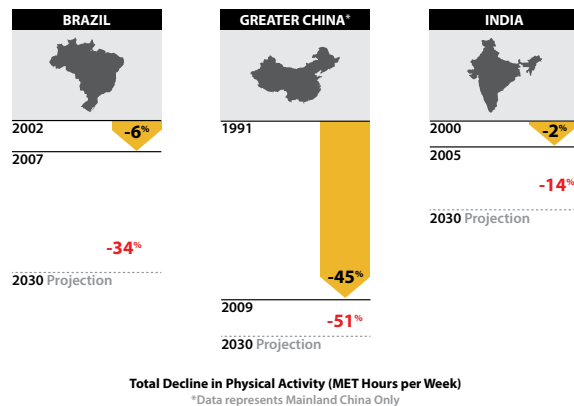
Sesame Workshop is one of the partners encouraging safe routes to school programs

adult carer struck down, the consequences can be far-reaching and can include a sudden end to schooling as they are forced to take on the role of breadwinner or a serious downgrading of their educational opportunities.<sup>18</sup> Of course, for more than a million children a year, education is either abruptly ended or severely disrupted by their own death or serious injury in a road crash. The equivalent of two large Secondary or High Schools are emptied in this way every day. We have to make roads 'safe to learn'.

But working for safe journeys to school not only reduces road injury and improves access to education. Encouraging children to walk and cycle also has positive long term health and societal benefits, promoting healthy behaviour from an early age. Lack of physical activity is a major risk factor for a range of non-communicable diseases, including heart disease, colon and breast cancers, diabetes and depression. The WHO estimates that as many as 3.2 million deaths each year are related to physical inactivity. The GBD 2010 study confirmed that lifestyle-related illness is a growing problem in both high and middle income countries. The predictions

are startling. By 2030, Americans will be 46% less physically active than in 1965. The Chinese will be 51% less active than they were in 1991, Indians 14% less active than in 2000.<sup>19</sup>

**FIGURE 5: HISTORIC AND PROJECTED PHYSICAL ACTIVITY (PA) LEVELS**



Source: Designed to Move, Nike, 2012



## The equivalent of two High Schools are emptied by road traffic injury every day.

The WHO Commission on Ending Childhood Obesity makes clear that tackling unhealthy lifestyles, increasing exercise and combatting Non-Communicable Diseases (NCDs) should begin in childhood. The Commission argues that tackling childhood obesity resonates with “the rights of children to a healthy life as well as the obligations assumed by State Parties to the Convention of the Rights of the Child. There are also direct linkages...to the proposed Sustainable Development Goals (SDGs).” One key policy recommendation is for attention to children’s freedom of movement and independent mobility. “Increasing the opportunities for safe, appropriate...physical activity, both in and out of school, including active transport (walking and cycling), will have positive health and spill-over effects for all children and adolescents”, it urges.<sup>20</sup>

Linked with obesity, related to the SDG agenda, UNICEF has engaged with partners recognising that NCDs have their origins early in life, and that a lifecycle approach will prevent and treat them. UNICEF is including a focus on NCDs in its forthcoming edition of the ‘Facts for Life’

publication. Its initiative also acknowledges the growing burden in low and middle-income countries which account for 80% of NCD related deaths – a similar profile to road traffic injury. As identified by UNICEF, an integral part of the emerging agenda is the need for access to safe environments for children and adolescents to be active, and opportunities to walk and cycle in their communities and to school.

In the context of the SDGs, an agenda of safe and sustainable journeys to school also complements wider objectives for reduced use of motor vehicles and walkable, more compact urban communities, which, studies show, will be essential for tackling climate change as well as the increasingly severe local air pollution that many cities are experiencing.<sup>21</sup> For health, education, tackling poverty and exclusion, for the life chances of the young generation, for protecting the environment, and simply for allowing children to be children, exploring their outdoor world, the benefits of improving road safety are clear.

# AT THE CENTRE OF DEVELOPMENT



A journey to school in Cambodia

We stand at the threshold of a new era of sustainable development, a point of high ambition as the world seeks to launch a new set of goals to eradicate poverty in all its forms. It is precisely this moment where we must give children a special status. Children must be placed at the heart of the new global agenda for the post-2015 Sustainable Development Goals. It is an agenda which starts with safe, healthy and well-educated children, for they must be a core part of any sustained approach to combat poverty. And in turn we must also recognise that safe and sustainable societies are essential for children.

Road traffic injury is an emblematic issue in this respect. It is the result of development which neglects the human dimension, a product of our collective failure to protect the most vulnerable. Witness the children carried on motorcycles in Hanoi with no helmets, or the schoolboys and girls facing the traffic on the streets of Mumbai with no safe place to walk. Travel down the Mombasa highway and you will see children with no safe way to reach school. This is negligence on a grand scale, one which violates the Convention on the Rights of the Child. And it is all taking place in the name of economic development.

This man-made epidemic, the number one killer of young people globally, is on the rise in regions where the pace of development is at its most rapid. The South East Asia region is one such example. Against a backdrop of rapid motorisation, huge increases in the number of two-wheelers, road traffic injury is posing an intolerable burden on the young. In Cambodia, according to the latest research from the Global Burden of Disease (GBD), deaths from road injury are the third biggest killer of 5-9 year olds, and the number one killer of 10-14 year olds. And the outlook is bleak. The rate of increase of road traffic fatalities for the 10 to 14 year old age group in Cambodia was 241% over the previous two decades, according to the GBD, and the trajectory is pointing further upward. Similar patterns are occurring in other rapidly developing regions. In East Africa for example, road traffic injury is already a top three killer of adolescents and young people. In Tanzania the figures show the impact on school age children. Here road traffic injury is the third leading killer of boys and girls aged 10-14. And this crisis is set to grow as the level of motorisation increases.<sup>22</sup>

We are witnessing a revolution in motorisation and mobility in emerging economies which is advancing at a startling pace. And this is combined with rapid urbanisation and the growth of the youth demographic in the great cities of the developing world. These are key facets of global development and they do bring opportunity.

Yet they are also a perfect storm for an epidemic of road traffic injury among our young people. And it is a threat they face just at the point where they are becoming independent, seeking opportunities for education and employment. For many it is the biggest threat they face as they attempt to negotiate a route out of poverty.



Nicholas Alipui speaking at an SDG road safety briefing

We have a duty to uphold the rights of our children, a task which is surely inseparable from our development objectives. We talk of 'child-centred global development'. But we must give this phrase meaning. We must not measure our development simply in terms of journey times, numbers of vehicles, or length of asphalt. Development must be measured in terms of the benefits it brings us all, society as a whole. We must recalibrate our approach to development, designing a 'safe system' for

our children. It is not a case of investing millions of dollars in the search for a vaccine. We have the solutions at our fingertips, what's needed is the policy support, the political will, the prioritisation of our children's safety.

The interventions are proven, measurable and cost-effective: safe routes to and from school; safe schoolbuses and cars with child restraints; helmets, particularly in those countries where motorcycles are becoming a major means of family transport; legislation and enforcement on speeding and drink driving; effective education and campaigning.

We know these interventions work. In Vietnam UNICEF recently joined partners and the Government to help launch the national action plan on child helmets. And in partnership work across the first project schools in Vietnam led by the Asia Injury Prevention Foundation, helmet wearing has increased, reducing the rate of injury and fatality among children. In South Africa a 'Safe Schools' model is being developed in collaboration with partners including the FIA Foundation. In a focused intervention, the project has introduced safe crossing points for children from low income communities who are exposed to high speed traffic on their route to school. The level of risk faced by children on the roads as they walk to classes in the 'Safe Schools' initiative has been reduced by over 80%.

These and many more examples represent a more enlightened way forward. In our new program for global development, we need a transport system that protects the most vulnerable, yet enables those living in poverty to access employment; safe environments around schools protecting children, allowing them to attain a meaningful education and at the same time reducing the burden of injury which blights their progress. A safe route to school and way out of poverty. This is our agenda for equity, human rights and truly sustainable development.

**Nicholas Alipui**  
UNICEF Director & Senior Advisor  
Post-2015 Development Agenda

# TOWARDS ZERO





This separated motorcycle lane in Malaysia is a good example of 'forgiving' infrastructure

The most effective context for implementing safe journeys to school is as one element of a holistic 'Safe System' approach to road safety. The Safe System is both a philosophy which refuses to accept that road traffic deaths are inevitable and a practical and proven program which has child rights at its heart.

Expert reports, including the OECD's *'Keeping Children Safe in Traffic'*<sup>23</sup>, published in 2004, the UNICEF/WHO *'World Report on Child Injury Prevention'*<sup>24</sup>, and the OECD's *'Towards Zero: Ambitious Road Safety Targets and the Safe System Approach'*<sup>25</sup>, both published in 2008, argue for specific targeted measures to improve child safety within a 'Safe System' approach to road safety policy that takes protection of the most vulnerable road user as its starting point and designs infrastructure, vehicles and the rules to provide a 'forgiving' road environment in which death and injury need not be the consequence of human error.

The moral case for a 'forgiving' road system is at its strongest when we consider children. Politically un-enfranchised and at the mercy of events – whether it be as pedestrians trying to cross a high speed dual carriageway dividing their home from their school, as passengers travelling without seat belts on an unregulated bus steered by an untrained driver, or as cyclists fighting with trucks for a share of the road – children are entirely blameless victims of a system which, at its worst, not only routinely allows adults to kill or maim them, but sometimes seems to be designed in such a way as to facilitate death and injury.

It is in Sweden, where government, politicians and road authorities have invented and pioneered the 'Safe System' or 'Vision Zero' approach, that practice has come closest to realising roads safe for children. Child road traffic deaths are below 1 per 100,000 population. In 2012 only one child was killed, compared with

58 in 1970. For pedestrians, more than 12,000 safer crossings have been introduced; while 1,500 kilometres of highway are now “2+1” roads, where infrastructure design prevents head-on collisions. Tough speed limits, combined with strict enforcement and sustained awareness raising, have reduced the risk of crashes and the severity of collisions when they do occur.<sup>26</sup>

This success is borne of a determination enunciated in the ‘Tylösand Declaration of citizen’s right to road traffic safety’<sup>27</sup>, a rights-based vision proposed by leading Swedish road safety policymakers in 2007. The Tylösand Declaration argues that internationally and within countries there is a lack of accountability and collective responsibility for road mobility and as a consequence “the transport system as we know it today pays little respect to the human ideal of not harming others”. While proposing a range of citizens’ rights in relation to road safety, including a general right to use the road without threat to life or health, the Tylösand Declaration emphasises that children “have special rights within the society and therefore also in the road transport system. Children cannot be seen as responsible users with the freedom to make informed choices. Children have to rely on adults and the society for their protection at all times”.

Vision Zero and the Safe System approach have inspired policymakers far beyond Sweden. The State of Victoria, in Australia, is a recognised leader in integrating safer infrastructure design, police enforcement, high impact awareness raising and world-class research in service of a zero fatality vision, greatly assisted by a state-managed third-party insurance system which provides a direct financial motivation for reducing injury costs.<sup>28</sup> In the United States a number of cities are adopting ‘Vision Zero’ goals. Building on the street re-modelling legacy of his predecessor (and global road safety philanthropist, Michael Bloomberg) Mayor de Blasio is instituting New York City’s own Vision Zero policy, spearheaded by speed limit reductions. There is a now a city-wide default speed limit of 25 mph. “Being struck by a vehicle is the leading cause of injury-related death for children under 14...” the NYC Vision Zero Initiative says. “The City of New York must no longer regard traffic crashes as mere ‘accidents’, but rather as preventable incidents that can be systematically addressed. No level of fatality on city streets is inevitable or acceptable”.<sup>29</sup> Indeed safe school zones are an important part of New York’s Vision Zero Action Plan which states that they should be “a focus of efforts in order to slow traffic, protect children, and create safer conditions in the communities at large.”<sup>30</sup>



President Rousseff of Brazil has urged action on road safety at the UN



Launch of the Brooklyn pedestrian safety Vision Zero action plan





Copenhagen has reaped the benefit of significant investment in cycling infrastructure



While not always explicitly couched in terms of a 'towards zero' approach, there is a growing movement in support of urban speed management in Europe too. With major cities including Edinburgh and Manchester introducing a 20mph default speed limit.

The Safe System is relevant not only in high-income countries with a record of sustained road traffic injury reduction. It can also have an immediate impact in middle and low income countries. The first step 'towards zero' is perhaps the hardest: to recognise the problem and to secure political commitment. But once the principle of zero tolerance of road death is established, it provides an effective framework to inform the flow of policymaking. In a policy objective adopted by President de Kirchner,<sup>31</sup> Argentina, for example, is responding to a dramatic rise in casualties as motorisation increases by implementing the 'Safe System', with impressive results,<sup>32</sup> halting the increase and beginning to reduce the number of deaths. President Dilma Rousseff of Brazil has shown leadership, urging attention to road safety in her 2012 address to the UN General Assembly and offering to host a global high level conference on the issue in November 2015. Like other countries in Latin America, such as Argentina, Chile and Jamaica, Brazil is making considerable efforts to reduce road traffic casualties.

But communities don't have to wait for parliaments to pass 'Vision Zero' decrees. Local action can play an important role in making safer roads a reality. Implementing policies that move 'towards zero' a street at a time, by reducing speed limits; putting in place traffic calming and safe crossings; and re-modelling road space to provide equity for non-motorised modes can be achieved at the scale of a town, or the catchment area of a school.

There exists a wide body of research and implemented, proven, practice that demonstrates how child deaths and injuries can be reduced (see Box 3: Ten Strategies for Keeping Children Safe on the Road). Many countries have made significant progress in protecting their children on the roads. Yet the language of 'rights' advanced by Swedish thought-leaders is rarely invoked when these policies are being implemented, or when the absence of such policies is challenged. Children are seen as potential beneficiaries of the 'Safe System' approach, but policymakers rarely consider design of the wider transport network with children as the principal customer or user. To do so would provide a radical and beneficial new perspective. And to build the argument, and to demonstrate the potential impact, the school journey is a good place to start.

# 10 STRATEGIES FOR KEEPING CHILDREN SAFE

## 1. CONTROLLING SPEED

Speed is a contributing factor in many road crashes. Long, straight roads which pass by schools, residences and businesses and which facilitate travel at high speed place children at significant risk. Speed reduction strategies include:

- setting and enforcing speed limits appropriate to the function of each road; setting and enforcing a maximum speed limit of 30 kilometres per hour on roads with high concentrations of pedestrians;
- enforcing speed limits through the use of automatic speed cameras;
- building or modifying roads to include features that limit speed such as traffic lights, roundabouts, and speed humps.

## 2. REDUCING DRINKING AND DRIVING

A major risk to children as pedestrians, cyclists and passengers in vehicles are people who drink and drive. Strategies include:

- setting and enforcing blood alcohol limits of 0.05 g/dl or less for all drivers, and lower blood alcohol limits of 0.02 g/dl or less for young drivers;
- enforcing drinking and driving laws through sobriety check points and random breath testing;
- restricting the sale of alcohol by legislating a minimum purchase age; regulating establishments which sell alcohol and their hours of operation; and limiting the marketing of alcohol to children.

## 3. USING HELMETS FOR BICYCLISTS AND MOTORCYCLISTS

Appropriate use of a cycle helmet decreases the risk of a head injury by 69%, while appropriate use of a motorcycle helmet reduces the risk of death by 40% and serious head injury by at least 70%. Strategies include:

- mandating and enforcing motorcycle helmet laws that stipulate the type and fit of motorcycle helmets by age group;
- putting in place internationally recognized manufacturing standards for motorcycle helmets, which ensure that they are suitable for children;
- ensuring the availability and affordability of motorcycle helmets for those who need them;

## 4. RESTRAINING CHILDREN IN VEHICLES

For children in vehicles, a range of restraints is available to protect them. For example, as compared to using seat-belts alone, booster seats are estimated to reduce by 59% the risk of children aged four to seven years sustaining significant injuries. Strategies include:

- mandating and enforcing child restraint laws for all private vehicles; putting in place internationally recognized manufacturing standards for child restraints;
- ensuring the availability and affordability of child restraints for those who need them and parental training
- obliging vehicle manufacturers to have plug-in attachments for car seats in all private vehicles, such as ISOFIX anchorage systems which fix child restraints in place;

## 5. IMPROVING CHILDREN'S ABILITY TO SEE AND BE SEEN

Seeing and being seen are particularly important for children due to their vulnerability. Strategies include:

- using retro-reflective strips on clothing or articles such as backpacks; "walking buses" and crossing guards: adult volunteers accompanying groups of children along established routes;
- using headlamps and reflectors on bicycles; using daytime running lights on motorcycles and vehicles;

## 6. ENHANCING ROAD INFRASTRUCTURE

Building new and modifying existing road infrastructure with a concern for safety would enhance the liveability of communities and reduce risks to children from road traffic crashes. Strategies include:

- implementing physical measures such as traffic lights, roundabouts, speed humps, cross walks, over passes, median strips, and street lighting on busy roads;
- separating different types of traffic and road users through mechanisms such as raised pavements for pedestrians, dedicated lanes for pedestrians and cyclists, and median barriers to separate oncoming vehicle traffic; creating car-free zones to enhance the safety of pedestrians;
- introducing school safety zones which include a package of speed reduction measures, car-free zones, safe drop-off and pick-up points, and crossing guards;
- investing in safe public transport.

## 7. ADAPTING VEHICLE DESIGN

Optimal vehicle designs and standards can contribute to the safety of children both inside and outside a vehicle. These strategies include:

- mandating the installation of energy-absorbing crumple zones to protect passengers inside a vehicle;
- redesigning vehicle fronts to make them more "pedestrian friendly";
- equipping vehicles with cameras and audible alarms that can detect small objects missed by the rear-view mirror;
- installing alcohol interlock systems in the vehicles of people convicted of drinking and driving.

## 8. REDUCING RISKS FOR YOUNG DRIVERS

Young, novice drivers account for a large number of road traffic crashes globally. Graduated driver licensing

schemes which implement the following strategies can have a major impact on the safety of children:

- lowering blood alcohol levels for young or novice drivers;
- driving with a responsible adult for a designated period of time while learning to drive;
- restricting nighttime driving and driving with passengers;
- insisting on zero tolerance for any traffic offenses, including texting while driving.

## 9. PROVIDING APPROPRIATE CARE FOR INJURED CHILDREN

Strengthening a country's emergency care and rehabilitation services is the best approach to improving outcomes for all road traffic victims, including children. Key strategies include:

- Providing caretaker and teacher education on safe immediate stabilisation of injuries, and establishing advance plans for systems to transport injured children to care facilities;
- Training prehospital and facility-based providers in the physiologic differences between children and adults, and on how to meet the distinct treatment needs of children;
- Where formal prehospital systems exist, equipping emergency vehicles with child-sized medical equipment and supplies;
- Making hospitals as "child-friendly" as possible to minimize additional trauma for injured children;

## 10. SUPERVISING CHILDREN AROUND ROADS

Young children have a limited capacity to evaluate risk. Parents and other caregivers can play an important role through supervision, ensuring that children use helmets, car seats, and seat-belts and abide by the protocols established for school safety zones.

Source: Ten Strategies to Keep Children Safe on the Road. World Health Organization

# SAFE ROUTES TO SCHOOL





Across the world, every day, twice or four times a day, there are mass movements of children to and from school. Millions of journeys, many unaccompanied by adults. The vast majority of these journeys end without incident, with children in school learning or safely back home with their families. But, as we have seen, a significant minority end in a tragedy on the roadside, or in a hospital trauma department, in a wheelchair, or in a long and painful convalescence.

These are the tragedies captured, if imperfectly, in accident statistics. Yet there are also hundreds of thousands of near misses, 'conflict incidents', in which children and traffic almost collide. We know that fear of the school journey, of speeding traffic, of the unsafe situations in which children find themselves, is widespread. A 2014 survey conducted by Safe Kids

Worldwide found that more than 80% of parents in Brazil, India and South Africa were concerned about the safety of their child walking to school.<sup>33</sup> For those parents with a choice, road danger, whether real or perceived, is a strong motivation for driving their children to school: the daily 'school run' which clogs roads, increases traffic pollution and itself helps to fuel the perception of road danger.

So to reduce road traffic casualties; to reduce the perception and reality of road danger; to reduce toxic air pollution; to increase walking and cycling and thereby increase physical fitness and tackle childhood obesity; to wean future generations off an over-dependence on the private car which is unsustainable, not least in terms of CO2 emissions contributing to climate change: for all these good reasons, a focus on making the journey to school safe and enjoyable must be a policy priority.



US First lady Michelle Obama speaking at a 'Let's Move' campaign event

## The evidence: investment in safe routes to school works

Since the 1970s 'safe routes to school' have become a recognised part of the recommended portfolio of sustainable transport and road safety policies. Most high income countries have on-going programs or some implemented practice which has demonstrated the value and effectiveness of a road safety focus on the journey to school.

In the United States, for example, the Safe Routes to Schools (SRTS) program, funded by the U.S. Department of Transportation (DOT), invests in sidewalks, crossings and improved design. Nearly 15,000 schools participate in the federal SRTS program, which has provided more than \$1.2 billion since 2005.<sup>34</sup> A study of initial pilot SRTS sites in California showed a 38% increase in students walking to school following investment.<sup>35</sup> A 2015 study of the impact over 5 years of the program on more than 300 SRTS schools in Florida, Oregon and Texas found that those with 'education and encouragement' programs saw an annual five percent increase in walking and bicycling rates, compared

with non-participating schools, while schools whose programs also included infrastructure improvements saw an additional 18 percent increase in walking and bicycling.<sup>36</sup>

The White House Taskforce on Childhood Obesity set up by President Barack Obama, reporting in 2010, included a number of strong recommendations for continuing and increasing investment in safe routes to schools, allied to a recommended target of increasing by 50% by 2015 the percentage of children ages 5-18 taking safe walking and biking trips to and from school. "A complete network of safe bicycle and pedestrian facilities would allow children to take more trips through active transportation and get more physical activity", the White House Taskforce concluded.<sup>37</sup> "New Federal aid construction projects should accommodate bicyclists and pedestrians by incorporating 'Complete Streets' principles. As improvement projects for existing facilities are undertaken, transportation infrastructure should be retrofitted, where feasible, to support and encourage bicycle and pedestrian use." The report also recommended that the "Federal Safe Routes to School Program (SRTS) should be continued and enhanced to accommodate the growing interest in implementing Safe Routes to Schools plans in communities."

A new Infrastructure Act, legislated in February 2015 by the UK Parliament, now requires a 'Cycling & Walking Investment Strategy' to be included in government transport planning.<sup>38</sup> In the UK schools are already required by the Education and Transport ministries to develop a travel plan to promote safe and sustainable transport. While subsequent implementation can be varied, organisations like Sustrans, supported with central and local government funding, are leading Safe Routes to School initiatives in thousands of communities. Activities include auditing current walking and cycling provision in and around schools and then designing and delivering walking and cycling routes, including improvements to crossings, access points and measures to reduce traffic speed.

Impact is impressive. At the more than 2,400 schools which receive Sustrans support 27% of pupils cycle regularly to school, up from 15% before intervention, while on average levels of everyday cycling double.<sup>39</sup> Schools also see impressive increases in the number of children walking to school.<sup>40</sup> Pedestrian organisation Living Streets is also working with thousands of schools, and hundreds of thousands of children, to promote walking, including through its popular 'Walk to School Month'. Lower speed limits are popular with parents too. More than 80% of parents surveyed in London wanted a speed limit of 20mph for their route to school, with 56% of parents overall agreeing.<sup>41</sup>

In Australia, several tools have been developed to assess risk to children within school zones, including star rating assessment based on speed limits, traffic volumes, road width, the number of conflicting directions of traffic and availability of safe formal crossings. In New South Wales, the Australian Road Research Board (ARRB) has developed a SchoolRisk model incorporating these and other factors. Research by ARRB found that vehicle speed is the most important factor, including in the approaches to schools zones, not least because 90% of child pedestrian injuries during school travel times occur outside the immediate school vicinity.<sup>42</sup>

In the context of the road safety epidemic afflicting middle and low-income countries, the experience of South Korea is inspiring. The reported results demonstrate what can be achieved if programs are evidence-based and taken to scale. The country has managed to achieve, between 1988 and 2012, a remarkable 95% reduction in road traffic fatalities for children under the age of 14 by introducing and investing in programs to improve school zones, improving the regulation and safe operation of school buses, supporting civil society organisations in advocating for road safety, providing education and improving laws.



UK 20mph zones, proven to reduce casualties, are spreading

Overall road traffic deaths in the period fell by 60% and, as always, the context of child road traffic injury prevention should be as part of an overall holistic drive to design a safe road system.

One feature of the Korean experience pertinent to this report is the concentrated focus on school journeys. Since 1995, with the introduction of 'school zones' which designated safe areas around kindergartens and primary schools, the government has introduced laws on school bus safety, mandatory prosecution of drivers involved in crashes within school areas, a doubling of fines for traffic violations occurring within school areas, and compulsory road safety education. As the number of road fatalities has been reduced, new fatality reduction targets have maintained ambition, and in 2014 the latest legislative changes were introduced to clamp down on unregistered school transport. Korea has also seen significant investment in safe school zone road engineering. Between 2003-2012 more than 9000 road safety improvements were engineered within school zones at a cost of US \$1.3 billion.<sup>43</sup>

South Korea has demonstrated that investment in child safety pays. Fortunately there are also good examples of 'safe routes to school' initiatives that are being designed in the context of middle and low income countries, and to provide protection to sometimes very poor communities. In the next section we review some of these new initiatives that are proving that, whatever the stage of economic development of a country, roads near schools, and in the surrounding environment, can be engineered to be 'safe to learn'.

# CHANGE BEGINS HERE!







Children paint a mural at a Safe Kids Worldwide project school in South Korea

Across the developing world communities are responding to increasingly dangerous roads and higher levels of road traffic injury by standing up for the rights of their children and working to make school journeys safer. Through national and international partnerships, and always driven by local leadership and effort, country-wide campaigns, city initiatives and local school area pilots are proving that positive change is possible.

Pioneers like Safe Kids Worldwide have been piloting 'model school zones' and their 'Walk This Way' education program in a number of developing countries for some years, demonstrating that a combination of infrastructure improvement and awareness raising, combined with advocacy for sustained legislative change, can have an impact. In Brazil, for example, their national affiliate Criança Segura led an award-winning campaign to increase the minimum age for children can ride as motorcycle passengers.<sup>44</sup> In India more than 2.5 million children have been reached with the Walk This Way program, and Safe Kids are currently working with the police on a 'Slow Down for Kids' speed enforcement initiative.<sup>45</sup>

Now, the focus on school-based community programs is becoming widespread. In this section of the report we examine interventions made in some of the middle and low-income countries most affected by rapid motorization and high incidence of child road traffic injury. From Montevideo to Nairobi to Hanoi, international and national organisations and philanthropies are working together with governments and police agencies to deliver child safety-centred strategies ranging from school bus safety regulation, to speed management on fast highways that are literally on the doorstep of primary schools, to provision of pavements, safe school entrances and crossings where none exist, to national campaigns to promote motorcycle helmet use amongst child passengers. All these initiatives are showing effective ways of confronting child road injury. What unites these efforts is a determination to prevent child injury, even in sometimes difficult conditions. What these efforts prove is that children's road safety is a viable solution anywhere in the world, if there is sufficient will, political support, and resourcing. Change begins here!



The SARSAI project in Tanzania aims to introduce low cost safe infrastructure around schools

## Tanzania

Juma Bakari was eight years old when he was hit by a motorcycle while walking back from school with his older brother. His leg was severely broken and his injuries meant he missed a year and a half from school. Juma's mother had to take time off from her work as a food vendor to care for him when he was first injured. She provided the only source of family income, and the loss of her earnings meant the family depended on help from friends and relatives for food, support and to cover the medical expenses. To reach Juma's school, the Mwangaza Primary School near Dar es Salaam, children have to cross a dangerous, high speed paved road. There are no traffic calming measures, and there are high volumes of motorcycles due to a nearby 'boda-boda' motorcycle station. Mwangaza is listed by the Amend road safety NGO as a priority for implementation of safe crossings, speed humps and other traffic calming measures in 2015-2016.<sup>46</sup>

On the increasingly busy streets of Dar es Salaam, Tanzania's largest city, children share the road space with cars, motorbikes and construction trucks. To combat rising road traffic injuries, Amend is working to help local communities to improve pedestrian infrastructure and to inculcate a safety culture in the policies of local authorities.

Targeting schools with high levels of child injury, typically at least 4% of children being injured on the roads each year,<sup>47</sup> Amend is implementing 'School Area Road Safety Assessments & Improvement' (SARSAI) programs.<sup>48</sup> The initiative involves a systematic assessment of areas around schools, identification of measures that will improve road safety, and the implementation of those measures through action by the NGO and delivery from the local authority.

Amend's school area interventions take place in countries with little reliable road traffic injury data. So countermeasures are designed through a review



## 8 year old Juma missed 18 months of schooling after a road traffic injury.

of the behaviour of children, of drivers and other road users, and household surveys of injury rates and patterns. Appropriate specific measures to improve safety are identified, based on the assessment. Some of these measures can be relatively low cost infrastructure improvements (speed bumps, bollards, sidewalks, signage, new school gates, etc) as well as the introduction of community-based measures such as crossing patrols, and community and school road safety education.

The SARSAI neighbourhoods are typically poor, the schools overcrowded, and the roads and streets around them not planned for large numbers of children and fast moving traffic to co-exist. Sidewalks are often lacking, crossings non-existent. As always with safe school zones, speed management of vehicles is the most important element: reduce the speed to within a safe envelope and most serious injuries can be prevented. So if SARSAI provides zebra crossings, it flanks them with speed bumps or other traffic calming measures. Some solutions can

be simple: at one site knocking through the back wall of the school compound to make a new gate allowed many children a shorter and safer walk, avoiding the main road.

Engaging local community leaders and city authorities is vital for the delivery and sustainability of the program. Speed management requires police support and understanding, removing obstacles from sidewalks (like temporary vendors or parked vehicles) needs policy approval. Above all, securing the participation and ownership for SARSAI by the community – teachers and parents – and their political representatives is the first step to a programmatic approach to safety which protects and extends short term gains. This is a particularly important objective aiming at scaling-up the interventions to build sustained government programs and to encourage the introduction of stronger speed legislation and enforcement. Amend is currently conducting an impact evaluation of SARSAI with the US Centers for Disease Control and Prevention and researchers from the Johns Hopkins School of Public Health.



On the Thika Road near Nairobi the project had begun to address road safety for school children

## Kenya

In neighbouring Kenya larger scale interventions funded by Bloomberg Philanthropies have shown what an emphasis on speed management can achieve, and have helped to pave the way for pending legislation reducing speed limits around schools to 30km/h.<sup>49</sup>

Focused on two sites, Thika and Naivasha, a consortium including the WHO and the Global Road Safety Partnership (GRSP) worked with government ministries to implement 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 estimated that more than 100,000 children have been given greater protection as a result of the speed reductions and other measures.<sup>50</sup>

General Kago Primary school is situated in Thika in Kiambu County. It has 700 children, most of whom live in poverty with families earning \$2 daily or less. The school is situated off the high speed Nairobi-Garissa road. Most pupils have to cross this road at least twice a day to go to the nearby Kendutu slum settlement where they live.<sup>51</sup>



As an alternative to walking, school transport is unsafe and overcrowded



## Following investment by Bloomberg Philanthropies injuries fell dramatically, and deaths fell to zero, at pilot school sites.

The road safety interventions in the school included the introduction of 30 km/h speed limits around the school, painting of a Zebra crossing, engaging a crossing guard to help the children cross, distribution of reflective bags and road safety education.

Before this intervention, the Early Childhood Development (Pre-primary) attendance was comparatively much lower than other schools not situated near the highway. Attendance averaged 10 children per class compared to schools where children did not have to cross the highway, which numbered 40 per class. This, according to teachers, was due to the fact that parents were fearful and reluctant to allow children to either walk to school themselves or be accompanied by older children. As walking is the main means of accessing school, attendance levels were low. Typically, the parents are unable to accompany children as they have to work long hours for daily wages to provide for the family. In 2012, some parents even withdrew their children when a child was hit and killed on the way to school.<sup>52</sup>

Since the introduction of a safer crossing and speed management the attendance has increased to 40 per class and there have been no deaths of pupils. In the 10 schools where the project was piloted, there were 45 incidents of road traffic injury among the children and five road deaths in 2011. Post-intervention in 2014, this had been reduced to 7 injuries and zero deaths.<sup>53</sup>

Multiple benefits have resulted from this intervention, both in terms of reduction in road traffic injury, access to education and in combating poverty. The pilot project has demonstrated effectiveness in this respect. The key task now is to ensure such interventions can be sustained and scaled up. This requires policy support and legislative action. And with grants from Bloomberg Philanthropies, a range of organisations including GRSP, Handicap International, ASIRT Kenya and Gertrude's Children's Hospital have been advocating for an amendment to the traffic law which would limit speed around all schools to below 30km/h and improve safety standards of school transport.



The Safe Schools project is protecting children in South Africa

## South Africa

In South Africa, a 'Safe Schools' project has been piloted in Western Cape which has brought safe crossings and road infrastructure on the route to school combined with an education toolkit to low income communities at high risk of road traffic injury.

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.<sup>54</sup> Sivile was selected because of the high exposure of children to danger on the roads to school. 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 from road injury, and the vast majority reporting they wanted action to be taken to be kept safe on the roads. A 'conflict analysis' assessing the level of risk to the children crossing the Jeff Masemola Highway has been carried out by the project team working at Sivile. This 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 there were 39 recorded 'conflicts' - instances of children placed in danger from oncoming traffic while crossing the highway.<sup>55</sup>

Just half an hour from the school is the Red Cross Children's hospital, the only dedicated children's hospital in Southern Africa. The hospital's trauma wards have a large intake of road traffic casualties, with

90% from the Western Cape region. In the last year to December 2014, the hospital received 1,138 road traffic injuries - three per day.<sup>56</sup>

A strong coalition of civil society, local agencies and international donors including principally corporate donor Janssen Pharmaceuticals and the Road Safety Fund together with expertise from the International Road Assessment Program (iRAP), was formed to support a pilot project to protect children on the route to school. The 'Safe Schools' model combines the introduction of safe road infrastructure on the route to school - safe crossings on the high speed roads, with a training package for teachers and a road safety curriculum for the children which has been researched and designed by Sesame Workshop's South African team, Takalini Sesame, to reflect local conditions. The project has so far leveraged €86,000 investment in safer infrastructure around the pilot schools from the Cape Town local authority.<sup>57</sup> According to the International Road Assessment Program (iRAP), the intervention is estimated to result in an 85% reduction in risk of road traffic injury to school children once the infrastructure upgrades are complete.<sup>58</sup>

The next steps of the project are to scale up the Safe Schools work, both in Western Cape and nationally across South Africa's provinces. This is work in which UNICEF, working with partners, is well positioned to make a valuable contribution, helping to establish the model as national policy.

# EMPOWERING COMMUNITIES

'We want bumps': after a local child was injured a crowd of concerned residents in one Dar Es Salaam district took to the streets, built a barricade and demanded action to reduce vehicle speeds. Their action is replicated in communities across the world, many of them poor and marginalised and without a strong political voice.



Protestors in a Dar es Salaam neighbourhood after a child was hit by a vehicle and taken to hospital. Tunataka Tuta means 'We Want Bumps'.

Providing the information necessary to demand road safety improvements is an important way to empower local advocates. But few communities can afford to hire engineers or lawyers to argue their case for a new sidewalk, safe crossing or speed reduction measures. Yet the need is pressing: surveys in 70 developing countries by the International Road Assessment Program (iRAP) have found that more than 80% of roads used by pedestrians, where the traffic speed is more than 40kph, have no sidewalk.<sup>59</sup>

Now iRAP, which conducts independent road safety assessments for governments and development banks, is piloting a low cost assessment tool for use in lower income communities. The aim is to be able to provide a 'star rating' or similar transparent and easily

communicated measurement of road risk, combined with basic countermeasure prescriptions. Pilot studies around schools in China, Mexico and South Africa, and work during 2015 alongside Amend in Tanzania, will refine iRAP's assessment methodology and tools for a local school context. At the Sivile Primary School pilot site in Western Cape, for example, iRAP's assessments directly influenced a local government decision to invest in new light-controlled crossings for schoolchildren.

For local advocates the ability to conduct basic first stage assessments themselves, using internationally recognised tools, could make demands by communities for speed management, traffic calming and safer infrastructure for cyclists and pedestrians harder to ignore.



iRAP road assessment map showing star rating of local roads at the Sivile pilot site

The development of research on 'star rating for school routes' has been notable for the support provided by private sector companies. The initial research in Mexico, was funded by FedEx, in South Africa research has been supported by Janssen Pharmaceuticals. These pilot projects are demonstrating that making school journeys 'safe to learn' can potentially attract much needed catalytic investment from the private sector.



A campaign event promoting 'Helmets for Kids' at one of AIP Foundation's project schools

## Vietnam

Vietnamese children are most vulnerable on their journey to and from school, and in wider activity and play, as pedestrians and passengers on motorcycles. More than 33 million motorcycles are in use in the country, many serving as the main mode of family transport, including on the school commute. More than 75% of road crashes are motorcycle related and 2000 children die on the roads in Vietnam every year.<sup>60</sup> In data collected from two hospitals, the Cho Ray, which is Ho Chi Minh City's largest and the Viet Duc in Hanoi, motorcycle injuries make up the highest proportion of road injury admissions at over 60% and 70% of the total respectively.

During 9 months in 2014 at the Cho Ray hospital 2,279 children and young people under 19 years old were hospitalised due to road traffic injury – over 250 a month. Of the total number of patients under 19 years

old referred to the hospital as an emergency case, a staggering 44.5% were road traffic injury cases. This was more than double the proportion of adult road injury intake (20%). Head injury cases are the most common compared with all other road injury cases. Children aged 5-14 account for the highest proportion of head injury cases at 67%, with the level of head injury at 53% among older teenagers 15-19 years old.<sup>61</sup> A combination of national strategies and smaller-scale demonstration projects are being implemented to reduce risk. UNICEF and the WHO are part of a coalition supporting the government's National Child Helmet Action Plan. Even though motorcycle helmet use is mandatory by law for both adults and children over the age of 6, child helmet use has remained significantly lower than adult use with only 1 in 3 children in major cities wearing helmets. The National Child Helmet Action Plan aims to raise public awareness and create a transformational shift in public attitudes towards child helmet use and compliance with the child helmet regulation. The key message of the 2015 Action Plan is "Love your child, provide a helmet".



## The message of Vietnam's motorcycle Action Plan is "Love your child, provide a helmet".



The National Child Helmet Action Plan consists of closely coordinated interventions to raise the child helmet wearing rate nationally. The main activities include public awareness-raising and communications on child helmet use, school-based education, and increased police enforcement to crack down on violations of the child helmet regulation.



The Action Plan was launched with a week of "enhanced enforcement" in April 2015. During this week, police patrols were conducted around schools and drivers whose children were not wearing helmets on motorcycles were stopped and given a reminder. All violation cases were reported to the schools to take further action. Following this initial soft enforcement push, police and public security forces have begun to strictly fine violators of the child helmet regulation and will continue patrols on child motorcycle helmet use as part of routine enforcement.

In Vietnam, government action is complemented by strong NGO engagement with civil society working in close collaboration with the public authorities. For example, the Asia Injury Prevention (AIP) Foundation, which is the main non-governmental coordinator for the National Child Helmet Action Plan, runs regular awareness campaigns on motorcycle helmet safety and organises media events, school engagement and community outreach initiatives in support of the overall national effort.



Popular girl group Crayon Pop performing at the launch of the 7 Percent Project in Bangkok

## Thailand

Seven children are killed on Thailand's roads every day. More than a million Thai children ride to school as passengers on their parents' motorcycles. Yet only 7% of these children wear crash helmets.<sup>62</sup> To meet this public health challenge Save the Children has joined with AIP Foundation to launch the '7 Percent Project'.

The initiative aims to increase motorcycle helmet use by children from the current level of 7% to up to 60% in target areas, with an initial focus on persuading Thai authorities to include motorcycle crash helmets as part of the school uniform. Formulation of the campaign has included significant opinion research to understand current barriers to motorcycle helmet use, and one salient finding is that helmets are not 'cool'. So the 7 Percent team are using popular Korean girl bands, comedians and

social media to build awareness and support a 'Pledge' petition to be delivered to policymakers in Bangkok. More than a million people have been reached through traditional and social media in the first phase. Television segments will be shown on Thai PBS (Public Service Broadcasting) during 2015. Campaign partners are also working with pilot schools and with agencies including the traffic police to develop awareness raising in tandem with enforcement, and working with helmet manufacturers to explore opportunities for making products more attractive to target age groups.

To deliver on its ambitious agenda, the project will need sustained funding support. Significant initial funding has been provided by Save the Children Korea, while companies including Thai Airways, Qualcomm Foundation, UPS Foundation and Marriott Hotels and, from the philanthropic sector, the FIA Foundation have joined the coalition.



Campaigners in Uruguay have succeeded in requiring 3 point seatbelts in all school buses

## Uruguay

Uruguay had made progress on road safety with the passage of legislation including a national law on passenger seatbelts in 2007. However, the law did not specifically mention safety for children, and as a result school transport lacked seatbelts and appropriate safety for children. Research carried out by the road safety NGO the Fundacion Gonzalo Rodriquez (FGR), found many schoolbuses had exposed metal structures, cramped spaces and unstable seating, and that most school vehicles did not have seatbelts of any kind. Most local authorities in Uruguay, who are responsible for school transport safety, either did not have a law or did not enforce a law on safety. The FGR had been advocating for legislation on school bus safety but it took a tragedy to push the authorities to take action. In April 2010, a school transport vehicle crashed just four blocks from its destination, the Pallotti College, killing 11 year old Julieta Estefan. Two other children were seriously injured. The bus had seatbelts at the front for the driver and teachers, but nothing for the children. The vehicle had flipped onto its side after colliding with a truck.<sup>63</sup>

FGR and its partners stepped up their advocacy following the crash, raising awareness and public demand and prompting legislative change with a 'Safely Back to

School' campaign. The resulting legislation has been enacted both at national and local level. The regulations mandate that all school transport vehicles should have three-point, height-adjustable seat belts. The legislation also covers child restraints for children under three years old in passenger cars. From February 2011, vehicles that do not comply with national safety regulations, cannot continue to provide a service.

In May 2013, an almost identical crash took place, when a schoolbus collided with a car in Montevideo's downtown area and overturned. All of the children suffered no more than minor injuries as they were wearing properly fastened seatbelts. The bus driver, Sebastian Gargiulo reported that the crash was frightening but that all the children he was transporting had been held securely by the seatbelts. Their survival had nothing to do with luck, he said: "It was chaos, I was locked, hanging and held by the seat belt, hearing the children screaming. Thank God they were also all held by the belts. All were wearing the seat belt, they were hanging and clinging to the belts. All the belts worked. As it should be."<sup>64</sup>

Uruguay's schoolbus legislation is now a reference point for other Latin American countries aiming to introduce and improve their own regulations.

# BUILDING A MOVEMENT





UNICEF Executive Director Anthony Lake receives the #SaveKidsLives Child Declaration from schoolchildren at a campaign event in New York City, May 2015

As the world unites to agree new Sustainable Development Goals for the 2015-2030 period, we have an unprecedented opportunity to build a global movement working for safer roads and for safe and healthy communities. Proposed targets in the draft SDGs call for a halving of global road traffic fatalities and for ensuring road safety is at the heart of strategies for sustainable, liveable, low-carbon cities. With a strong focus in the SDGs on access to and quality of education, and child health, the issue of safe routes to school has a broad relevance and interlinks with many important agendas. A global movement has started to emerge and it has found a voice with the #SaveKidsLives campaign pushing for road safety in the SDGs.

In 2002, following the tenth anniversary of the Convention on the Rights of the Child, the WHO, UNEP and UNICEF together published policy on the environmental risks to children, and promoted the concept of the 'Safe School'. Citing risks including lack of sanitation, air pollution and road traffic injuries, the agencies argued that "unsafe schools pose risks for the health and development of

many adolescents".<sup>65</sup> The WHO later elaborated on the concept of the 'virtuous circle' of education and health, outlining the key characteristics of a 'Health Promoting School' including 'shelter; toilets; water; protection from air pollution and tobacco smoke; protection from traffic accidents and injuries'.<sup>66</sup>

As this report has shown, prioritising safe routes to school can make an important contribution to preventing injuries, tackling obesity, improving local environments and encouraging low carbon mobility. There are simple, affordable and measurable interventions which, if taken to scale, could transform children's experience of the daily journey to and from school, dramatically reduce the number of child casualties in road traffic crashes, and enable a revolution in walking and cycling for children, their parents and carers, and ultimately all road users. The journey to and from school is an integral element of the 'Health Promoting' or 'Safe' school idea, and an important foundation stone for health, well-being and safer roads in the surrounding community.



South Africa's Ambassador to the UN Kingsley Mamabolo speaking at a briefing on the SDG road safety target at UN Headquarters, New York

As we have reported, there is a growing movement 'towards zero' fatalities, with speed limit reductions on local roads, in many cities across the world. Thousands of communities are actively calling for safer roads, and for mobility choices that enable low carbon lifestyles to meet the challenge of climate change and protect and improve quality of life for children and future generations.

2015 is the ideal year to spark this change. The launch of the new SDGs will be followed by a High Level Conference on Global Road Safety hosted by the Government of Brazil in November 2015. This ministerial-level meeting will be an ideal opportunity to:

- Set out a vision for safe journeys to school for all children by 2030, and bring together new international cooperative partnerships and programs - like our UNICEF/FIA Foundation partnership - to help to implement and achieve it, always recognising the strong connections to other public health, environmental and urban development objectives and targets;

- Encourage governments to commit to practical action to strengthen road safety legislation and enforcement in order to achieve the target, set by the UN General Assembly, of moving the proportion of countries with comprehensive road safety legislation from 15% in 2011 to 50% in 2020;
- Promote renewed momentum to achieve the objective of the 'Global Plan' for the UN Decade of Action for Road Safety, including implementation of UN vehicle safety regulations in all cars; improving safety on the 10% of highest risk roads by 2020; and raising levels of post-crash response and care.

Working together, national agencies, local government, school and highway authorities, the police, NGOs and the private sector can identify and target the highest risk routes and systematically improve them. Road networks can be made safe particularly for vulnerable road users. By providing sidewalks, cycle-paths and safe crossings, reducing and enforcing speed limits and installing speed

## Our Post-2015 vision of safe streets for all can begin outside the local school.



management (like the humble but effective speed hump) local infrastructure can be improved to create a ‘forgiving’ environment in which children can be better protected when they travel. By addressing local risk factors, be it speeding traffic, unsafe school buses or non-use of motorcycle helmets, the level of protection can be significantly improved for children.

Our most important financial and emotional investments are made in our children. So we all feel the hurt when a child is killed or injured in a road crash. We all recognise that it is something that simply should not be allowed to happen. Time and again, surveys in every country show that the number one priority for people is the education of their children. We all recognise how crucial safe and fair access to education is to the life chances and future happiness of children. So when we put together the leading cause of death and life-changing injury for school-age children, road traffic crashes, and the number one priority for billions of people, education, we have a compelling reason to act. This report has shown that child road traffic

injury is preventable. It has shown that where there is a will to take action results can be fast and impressive. We can have a vision of safe streets for all, and that vision can begin on the street outside our local school. It is time to get to work to make our public space ‘Safe to Learn’.



# REFERENCES

- <sup>1</sup> FIA Foundation analysis of Institute for Health Metrics and Evaluation (IHME) GBD Database estimates.
- <sup>2</sup> Estimate of over 5.5 million deaths since 1990 based on annual levels of deaths due to road injury for 0-19 year olds of around 225,000 for 1990, 2005 and 2010, assuming similar levels on average across 25 years. Source: Institute for Health Metrics and Evaluation (IHME). GBD Database. Seattle, WA: IHME, University of Washington, 2014. Available from [http://ghdx.healthdata.org/sites/default/files/record-attached-files/IHME\\_GBD\\_2010\\_COD\\_1990\\_2010.CSV](http://ghdx.healthdata.org/sites/default/files/record-attached-files/IHME_GBD_2010_COD_1990_2010.CSV) (Accessed April 2015). The GBD age ranges are based on 0-19, which accounts for most of the data in this report, though we note that the UN Convention on the Rights of the Child defines children as 0-18.
- <sup>3</sup> The WHO figure is 1.2 million (WHO Global Status Report on road safety, 2013), the Global Burden of Disease (Institute for Health Metrics and Evaluation, 2012) estimates 1.3 million.
- <sup>4</sup> Global Road Safety Facility, The World Bank; Institute for Health Metrics and Evaluation (2014) Transport for Health: The Global Burden of Disease from Motorized Road Transport. Seattle, WA: IHME; Washington, DC: The World Bank, p9
- <sup>5</sup> Global Road Safety Facility, The World Bank; Institute for Health Metrics and Evaluation (2014) Transport for Health: The Global Burden of Disease from Motorized Road Transport. Seattle, WA: IHME; Washington, DC: The World Bank, p40
- <sup>6</sup> United Nations (2014) Probabilistic Population Projections based on the World Population Prospects: The 2012 Revision. Population Division, DESA
- <sup>7</sup> iRAP (2013) A business case for safer roads; McMahon, K. and Dahdah, S. (2008) The True Cost of Road Crashes: Valuing Life and the Cost of a Serious Injury
- <sup>8</sup> Nunez et al (2011) Economic impact of fatal and non-fatal road traffic injuries in Guadalajara Metropolitan Area and Jalisco, Mexico. Injury prevention, 17(5), 297-303.
- <sup>9</sup> Thwe et al (2013) Road Crashes and Poverty in Myanmar: Yangon Case Study. Proceedings of the Eastern Asia Society for Transportation Studies, Vol.9
- <sup>10</sup> Aeron-Thomas, Jacobs, Sexton, Gururaj, Rahman (2004) The involvement and impact of road crashes on the poor: Bangladesh and India case studies, TRL PPR 010
- <sup>11</sup> World Bank, 25 Feb 2015, Road crashes have more impact on poverty than you probably thought <http://blogs.worldbank.org/transport/road-crashes-have-more-impact-poverty-you-probably-thought?hootPostID=e4f704160a7b204ea2a6c9b6e545c625> Accessed 10 April 2015
- <sup>12</sup> Peden, M et al. World Report on Child Injury Prevention. WHO/UNICEF, 2008
- <sup>13</sup> Global Status Report on Road Safety. WHO, 2013
- <sup>14</sup> Linnan M et al. Child mortality and injury in Asia: policy and program implications. UNICEF Innocenti Research Centre, 2007
- <sup>15</sup> FIA Foundation calculation based on data and analysis in the World Report on Child Injury Prevention. This report uses the UN CRC definition of children as 0-18 years old.
- <sup>16</sup> Testimony from the family, recorded December 2014
- <sup>17</sup> Peden, M et al. World Report on Child Injury Prevention. WHO/UNICEF, 2008
- <sup>18</sup> Watkins, K & Sridhar, D (2009) Road Traffic Injuries: the hidden development crisis. Make Roads Safe Campaign
- <sup>19</sup> Ng, S.W. and Popkin, B.M (2012). Time use and physical activity: a shift away from movement across the globe. Obesity Reviews. doi: 10.1111/j.1467-789X.2011.00982.x.
- <sup>20</sup> WHO Commission on Ending Childhood Obesity, Interim Report, 2015. <http://www.who.int/end-childhood-obesity/commission-ending-childhood-obesity-interim-report.pdf>
- <sup>21</sup> The Global Commission on the Economy & Climate (2014) The New Climate Economy
- <sup>22</sup> IHME Global Burden of Disease 2010 <http://vizhub.healthdata.org/irank/arrow.php>
- <sup>23</sup> McMahon K et al (2004) Keeping Children Safe in Traffic. OECD
- <sup>24</sup> Peden, M et al (2008) World Report on Child Injury Prevention. WHO/UNICEF
- <sup>25</sup> Howard, E et al (2008) Towards Zero: Ambitious Road Safety Targets and the Safe System Approach. OECD/ITF
- <sup>26</sup> The Economist, 26 Feb 2014, 'Why Sweden has so few road deaths', <http://www.economist.com/blogs/economist-explains/2014/02/economist-explains-16>, Accessed April 2015
- <sup>27</sup> Tylösand Declaration of citizen's right to road traffic safety [http://www.unece.org/fileadmin/DAM/trans/roadsafe/unda/Sweden\\_Tylosand\\_Declaration.pdf](http://www.unece.org/fileadmin/DAM/trans/roadsafe/unda/Sweden_Tylosand_Declaration.pdf)
- <sup>28</sup> See <https://www.tac.vic.gov.au/> for information on the work of the Victorian Transport Accident Commission
- <sup>29</sup> <http://www.nyc.gov/html/visionzero/pages/home/home.shtml>



- <sup>30</sup> New York City Vision Zero Action Plan (2014) <http://www.nyc.gov/html/visionzero/pdf/nyc-vision-zero-action-plan.pdf> p34
- <sup>31</sup> International Transport Forum Annual Report 2014 [http://www.oecd-ilibrary.org/transport/road-safety-annual-report-2014\\_irtad-2014-en;jsessionid=44iavc03pq5ev.x-oecd-live-03](http://www.oecd-ilibrary.org/transport/road-safety-annual-report-2014_irtad-2014-en;jsessionid=44iavc03pq5ev.x-oecd-live-03)
- <sup>32</sup> Bliss T, Raffo V, (2013). Improving Global Road Safety: Towards Equitable and Sustainable Development. Guidelines for Country Road Safety Engagement, World Bank, Global Road Safety Facility, International Union for Health Promotion and Education (IUHPE), and US Centers for Disease Control (CDC). <http://www.iuhpe.org/index.html?page=514&lang=en#WORLDBANK>
- <sup>33</sup> Safe Kids Worldwide (2014) Global Road Safety for Children report <http://www.safekids.org/research-report/safe-roads-safe-kids-global-road-safety-children-december-2014>
- <sup>34</sup> <http://www.saferoutesinfo.org/about-us/mission-and-history>
- <sup>35</sup> Boarnet, M., Day, K., Anderson, C., et al. (2005). California's Safe Routes to School Program impacts on walking, bicycling, and pedestrian safety. *Journal of the American Planning Association*, 71(3), 301-317
- <sup>36</sup> Noreen C. MacDonald et al (2015). Impact of the Safe Routes to School Program on Walking and Bicycling. *Journal of the American Planning Association*
- <sup>37</sup> White House Taskforce on Childhood Obesity (2010), Report to the President: Solving the Problem of Childhood Obesity Within A Generation. <http://www.letsmove.gov/white-house-task-force-childhood-obesity-report-president>
- <sup>38</sup> UK Government (2015) Infrastructure Act 2015, <http://www.legislation.gov.uk/ukpga/2015/7/part/2/enacted>
- <sup>39</sup> Sustrans (2010/11) Bike It hands-up survey
- <sup>40</sup> Sustrans (2012) Route User Intercept Survey Report: Wayland Primary, Watton - Links to School
- <sup>41</sup> <http://www.sustrans.org.uk/news/parents-want-slower-speeds#survey>
- <sup>42</sup> Pyta, V. & McTiernan, D. (2010) Development of a model for improving safety in school zones, ARRB
- <sup>43</sup> Sul Jaehoon et al (2014) Korea's 95% Reduction in Child Traffic Fatalities: Policies and Achievements. The Korea Transport Institute
- <sup>44</sup> <http://www.safekids.org/crianca-segura-brasil-changing-outcomes-children-road-brazil>
- <sup>45</sup> <http://www.safekids.org/safe-kids-foundation-collaborating-partners-india>
- <sup>46</sup> Case study data collected by Amend NGO, April 2015
- <sup>47</sup> preliminary findings from Amend's impact evaluation of SARSAI (2015). For a similar published study in Ghana with comparable levels of RTI see Paediatric road traffic injuries in urban Ghana: a population-based study. Guerrero A, Amegashie J, Obiri-Yeboah M, et al. *Injury Prevention* (2011).
- <sup>48</sup> <http://www.amend.org/our-work/>
- <sup>49</sup> Kenya, Traffic Amendment Bill 2014. Factsheet, Bloomberg Philanthropies/ASIRT Kenya.
- <sup>50</sup> Bloomberg Philanthropies, [http://asirt.org/Portals/O/Bloomberg/Kenya\\_infographic\\_v3%5B5%5D.pdf](http://asirt.org/Portals/O/Bloomberg/Kenya_infographic_v3%5B5%5D.pdf)
- <sup>51</sup> Field research by ASIRT Kenya, Bright Oywaya (April 2015)
- <sup>52</sup> ASIRT Kenya, Bright Oywaya. Interviews with teachers and parents at General Kago Primary School, Thika (April 2015)
- <sup>53</sup> *ibid*
- <sup>54</sup> International Road Assessment Programme (IRAP) survey of Sivile (2014)
- <sup>55</sup> Safe Schools project research, Childsafe South Africa and project partners (2014)
- <sup>56</sup> Data from Red Cross War Memorial Children's Hospital, Cape Town, records (December 2014).
- <sup>57</sup> Safe Schools South Africa interim project report, (March 2015)
- <sup>58</sup> International Road Assessment Programme Sivile survey (2014)
- <sup>59</sup> *Vaccines for Roads* (second edition), iRAP, 2012 <http://www.irap.org/en/irap-news/285-vaccines-for-roads>
- <sup>60</sup> Asia Injury Prevention Foundation (AIPF)
- <sup>61</sup> Cho Ray HCMC and Viet Duc, Hanoi Hospital records accessed by AIPF and UNICEF Vietnam (April 2015).
- <sup>62</sup> Data from 7% campaign, AIPF Thailand and Save the Children Thailand.
- <sup>63</sup> Fundación Gonzalo Rodríguez (2012)
- <sup>64</sup> El Pais, Uruguay (May 2013)
- <sup>65</sup> *Children in the New Millennium*, WHO, UNEP, UNICEF, 2002
- <sup>66</sup> Gordon B, Mackay R, Rehfuess E (2004), *Inheriting the World - The Atlas of Children's Health and the Environment*, World Health Organization.

# UNICEF

UNICEF promotes the rights and wellbeing of every child, in everything we do. Together with our partners, we work in 190 countries and territories to translate that commitment into practical action, focusing special effort on reaching the most vulnerable and excluded children, to the benefit of all children, everywhere. For more information about UNICEF and its work visit:

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



# FIA FOUNDATION

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)



**FOUNDATION**





Visit us online:

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

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