

A photograph of a busy street in a developing country. In the foreground, two young school children in white shirts and yellow skirts are walking across the road. They are carrying backpacks. Behind them, a man in a striped shirt is also walking. The street is filled with various vehicles, including white vans, a blue truck, and a white car. The background shows more vehicles and buildings under a clear sky.

ROAD TRAFFIC INJURIES: the hidden development crisis

**A policy briefing for the First Global Ministerial Conference
on Road Safety, Moscow, 19-20 November 2009**

Kevin Watkins and Devi Sridhar

 **MAKE ROADS SAFE**
The Campaign for Global Road Safety



Foreword: Lord Robertson

'Time for Action'. This is the slogan of the First Global Ministerial Conference on Road Safety. And if we consider the scale of the road injury epidemic facing the world, and particularly the developing world, it is clear that now is indeed the time for action. This issue has been neglected for far too long. Moscow can be the turning point, the fork in the road. We can choose this week to take a new direction for road injury prevention.

This briefing paper provides conference delegates with powerful arguments for why road safety must become a development and health priority. As Kevin Watkins and Devi Sridhar point out, economic self interest alone dictates that road safety be acted on by governments. The tragic waste of human life, the draining of national wealth, the crippling impact on health systems, families condemned to poverty – these are the man-made disasters that are the consequence of ignoring road safety.

We encourage national governments, and those with responsibility for road safety at regional and local level, to adopt ambitious strategies to reduce road traffic injuries. For example, ministers meeting in Moscow could together commit to work for universal seat belt and helmet wearing by 2020.

We urge international donors and the development banks to lead by example. Both international institutions and individual countries are increasingly recognising the important role that road assessment and subsequent safe road design can play in reducing casualties across the road network. This must become a programmatic priority.



And we call on ministers meeting in Moscow to support our call for a Decade of Action for Road Safety. With political determination and resources commensurate to the scale of this crisis, leading road safety experts believe that five million lives could be saved over the next ten years.

Five million lives are at stake: five million people whose potential can be realised, and not wasted. Five million families who need never know the sudden shock and lifelong grief that comes from losing a loved one in a road crash.

So let us commit this week, at this historic conference, to work together for a Decade of Action and make roads safe for us all.

Rt. Hon. Lord Robertson of Port Ellen
Chairman, Make Roads Safe Campaign



Road traffic injuries: the hidden development crisis

Scan the media headlines in most developing countries and you are likely to find a steady supply of road traffic disasters. Here are some recent examples:

- 29 people killed and 24 seriously injured on the highway from Nairobi to Mombasa when a truck collided with a speeding bus
- 10 year old boy crushed to death by reversing bus in Delhi, one of more than 100 people killed in crashes involving a single bus company in the city last year.
- 54 people killed in Guatemala when a bus carrying 77 passengers skidded into a ravine
- Residents rioted and burnt tyres in the road in South African township after pedestrians were killed and injured in two separate hit and run incidents.

Media reporting in developing countries partially captures the real risks facing people using roads. Yet road safety management does not make international headlines. The subject is absent from the agendas of global summits on international development. Yet few issues merit more urgent attention. Road traffic deaths and injuries represent a global epidemic – and the costs of that epidemic are borne overwhelmingly by the world's poorest countries and people. Apart from their devastating human consequences, road traffic injuries are holding back progress in economic growth, poverty reduction, health and education. With projections pointing to a relentless increase in the spread of the road traffic injury epidemic, governments can no longer afford to turn a blind eye.

The first global ministerial conference on road safety to be held on 19/20 November, 2009 in Moscow, the Russian Federation, has an opportunity to set a new course. This is a summit that can make a difference. There are no quick fixes. Enhanced road safety is not just about redesigning roads, but about rethinking the relationship between roads and people, and radically changing approaches to the measure-



ment of national progress in transport policy. Sustained political will and commitment, backed by the better deployment of existing resources and mobilisation of additional resources, will be required to put in place a long-term strategy for achieving change. The *Make Roads Safe* campaign is calling for a UN Decade of Action to set a new course of action – and the Moscow conference needs to back that call.

Business-as-usual is no longer an option. Current approaches to road safety in the world's poorest countries are both indefensible and unsustainable. They are indefensible because they will result in millions of deaths and injuries that could be prevented through affordable investments. And they are unsustainable because no country can afford the economic and social costs associated with current approaches. The fact that these costs are hidden from view does not detract from their devastating effects.

There are two priorities for the ministerial conference. The first is to start the process of putting people first. Too often, governments measure the success of transport policy in kilometres of asphalted road, reduced journey times for mo-

torised transport, and the convenience of car and truck drivers. Road traffic injury is seen as a form of collateral damage – the inevitable price to be paid for a more efficient infrastructure. This logic has to be turned on its head, with the security of vulnerable road users put at the centre of national policy.

The second priority is to set a road-map charting the course to a different future. Less weight should be attached to the kilometre count for asphalt roads, and more weight should be attached to the body count. All countries should be encouraged to set targets for first stabilising and then reducing road traffic injuries. National strategies should set out the road safety approaches and investments needed to convert these targets into outcomes. And the international community should back these strategies with aid and support for capacity building.



The global epidemic

Road transportation provides obvious benefits to countries and individuals. It facilitates the movement of goods and people, creating employment, supporting economic growth, and enhancing access to education and health care. The association between roads and human development is well-established. Data from low-income countries consistently demonstrates that communities living furthest from roads experience higher levels of poverty, lower levels of school attendance and worse health outcomes. But the benefits come with costs that have been widely overlooked

Headline numbers tell part of the story. Around 1.3 million people will be killed on the world's roads this year. Over 90 per cent of these fatalities occur in the world's poorest countries (**see figure 1**). Road traffic fatalities are the single biggest source of death among 15-19 year olds in developing countries and the second leading cause among 5-14 year olds. For every death, up to 50 people are injured or disabled. To put these figures in perspective, in the course of the two day Moscow summit some 7000 will die on the world's roads and another 130,000 will be injured, 40,000 of them seriously.

The future looks worse than the present – far worse. Rich countries are making progress in cutting road traffic deaths and injuries. Poor countries are moving in the opposite direction. Comparing 2020 with 2000, fatalities are predicted to increase by more than 80% in low and middle income countries and by 144% in South Asia. By 2030, the projected number of deaths on the world's roads will be roughly double the current level. Long before this - by 2015 - road deaths are projected to be the leading cause of health losses for children aged 5-14 years as measured by Disability Adjusted Life Years (**see figure 2**).

Vulnerable road users account for a large proportion of road deaths and injuries in developing countries. In the rich world, most of the victims of road injuries are drivers or vehicles and their passengers. In the poorest countries, typically around half of those who die in road traffic crashes are pedestrians, cyclists, or users of two-wheel vehicles. Put differently, people for the most part far too poor to own a car face by far the highest levels of risk. Pedestrians typically account for 30 - 40% of road traffic fatalities in developing countries (**see figure 3**).

Figure 1: Road traffic injury mortality rates (per 100 000 population), 2002

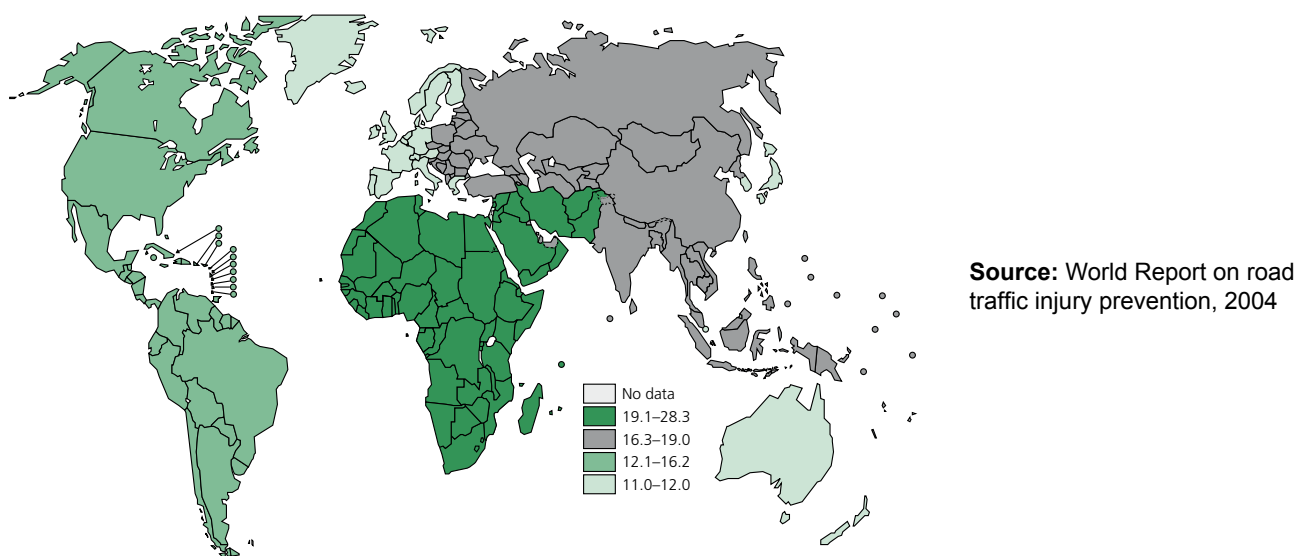
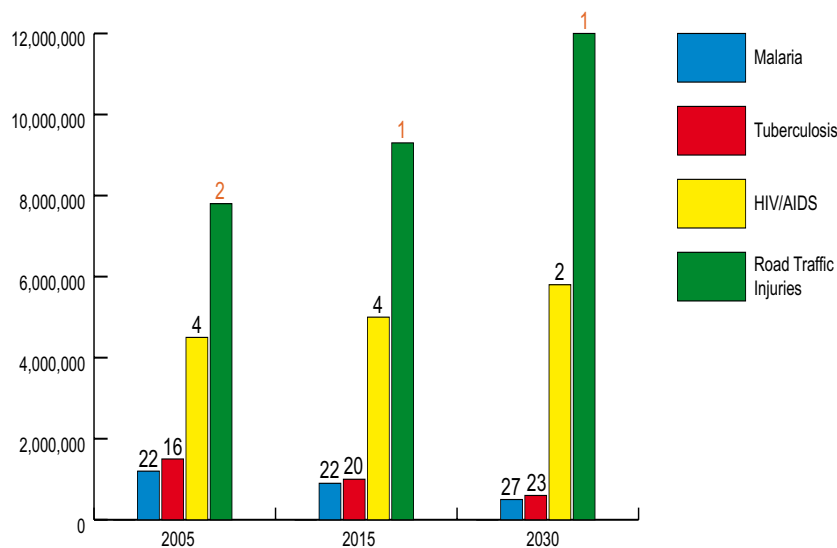


Figure 2: Projected Disability Adjusted Life Years (DALYS) in developing countries: (children aged 5 – 14)



Source: Mather C, Loncar D, Updated projections of global mortality and burden of disease, 2002-2030: data sources, methods and results, WHO, October 2005

Child pedestrian injury is highest in South Asia and sub-Saharan Africa. The grim arithmetic driving future road traffic injury scenarios can be briefly summarised. Poor countries currently account for just under half of all cars on the world's roads and 9 in every ten fatalities. With car ownership rising rapidly and governments and donors investing heavily in road construction, the ratio of cars to vulnerable pedestrians will rise – as will the levels of fatality and injuries. A person in a poor country is at least twice as likely to die on a road as the citizen of a high country. That outcome reflects the higher levels of risk

on roads and the more limited access to public health services.

Current patterns of health spending underline the relative neglect of road traffic injury in national health priorities. In India, per capita spending on HIV/AIDS is 13 times greater than spending on road traffic injury, even though the latter is a bigger source of fatality and injury.



The hidden costs

Global statistics of road traffic injury tell an important story. They quantify the broad dimensions of the problem – and they make it possible to compare countries and regions. But data on road safety capture only part of the cost.

The most important impacts of the road safety crisis are beyond measurement. There are human faces behind the 1.3 million fatalities. For every victim there are grieving parents, brothers and friends trying to come to terms with the loss of loved ones. Human grief and loss have no price. And no simple numbers can be put on the trauma, anxiety and stress experienced by people who have been left disabled, and their carers, as a result of road traffic injury.

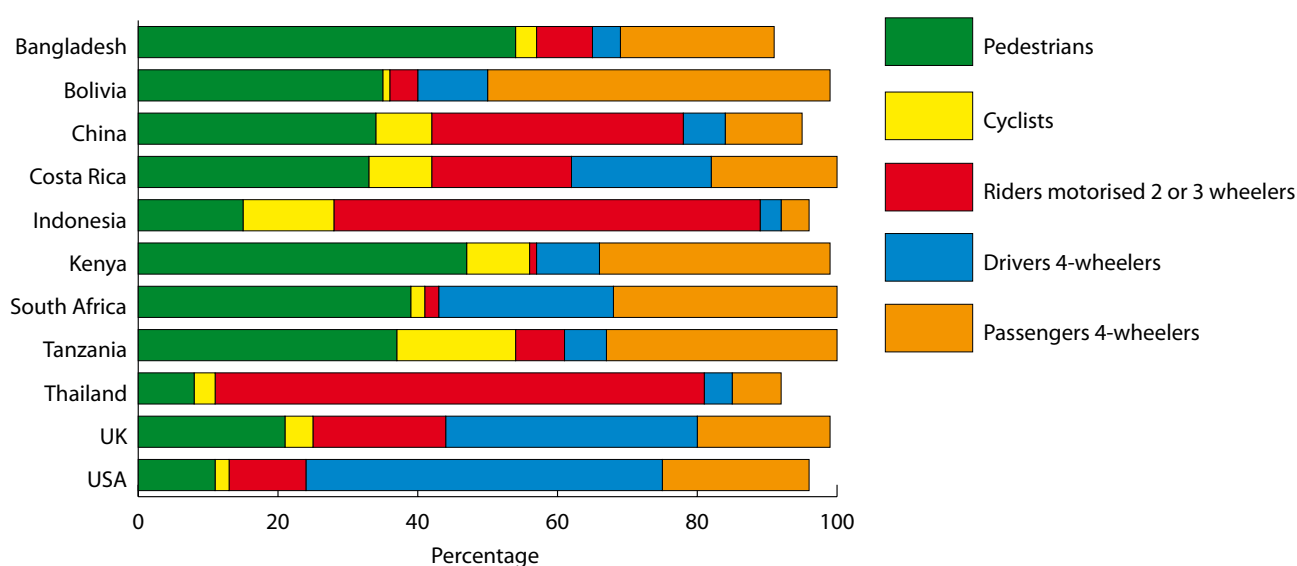
Looking beyond these human costs, there are grounds for concern that data on road traffic injury understates the scale of the problem. Few developing countries have reliable and comparable data on road traffic injuries. Countries use different criteria for registering fatalities and injuries, and the effectiveness of police and health facility reporting systems varies enormously. What can be said with some certainty is that under-reporting is widespread – and that it

is most widespread in remote areas and among households lacking access to health facilities, or resources to pay for treatment.

Beyond the loopholes in administrative data the wider costs associated with road traffic accidents are not sufficiently recognised. These costs have a direct and powerful bearing not just on national economic life, but on prospects for social progress.

Economic losses. Quantifying the economic impact of road traffic injury is difficult. On one estimate, based on ‘value of life’ calculations, the cost of fatalities alone represents some US\$385bn for low-income and middle-income countries. These countries are typically losing on an annualised basis an amount equivalent to between 1-3% of GDP. For some, the financial costs associated with road traffic injuries outweigh the amount received in aid (**See figure 4**). Losses of GDP on this scale have adverse implications for poverty reduction because every 1 per cent increase in economic growth is estimated to reduce poverty levels by 0.7%.

Figure 3: Deaths by road user category



Selected countries, Global Status Report on Road Safety, WHO, 2009

Strain on health systems. Road traffic injuries place an enormous strain on already overstretched health systems. The systems are in effect haemorrhaging resources as finance, equipment and skilled staff are diverted to treat the victims of road traffic injuries.

- In Kenya, road traffic injury patient represent 45-60% of all admissions to surgical wards
- Studies in India show that road injuries accounts for 10-30% of hospital admissions
- One hospital in Uganda reports spending around US\$399 per patient treating road traffic injuries. This is in a country with national spending of US\$20 per person

Most health systems in developing countries are not equipped to deal effectively with road traffic injury on the current scale. Many patients requiring specialised trauma care are being treated by general doctors. Meanwhile, shortages of surgeons and intensive care equipment are leading to delays in treatment – and delay can have fatal consequences.

Locking vulnerable people into poverty. Nobody is immune to the risks associated with road traffic injury. However, poverty increases the risk – and it diminishes the capacity of victims to cope with the consequences:

- Poor people are more likely to be vulnerable road users. They are more likely to travel on foot, by bicycle, or by public transport – and in many cases public carriers are a major source of road traffic injury. Research from Bangalore, India, found that mortality from road traffic injuries was twice as high among the poorest socio-economic groups as among the richest – a finding that held for both urban and rural areas.
- Road traffic injury can dramatically cut household income. The most precious asset of the poor is their labour – and road injuries or fatalities can erode the value of that asset. In Bangladesh, 75 per cent of poor households reporting a road traffic death reported a decrease in living standards.

BOX 1:

A family torn apart

Huynh Trong Hieu, 32 years old, lives in the outskirts of the tourist city of Nha Trang, Vietnam. Hieu is married with a son and a daughter and was the breadwinner of his extended family, including his wife, children, mother, and his two mentally-disabled sisters. Hieu worked as a motorcycle repairman and because of his mechanical ability and hardworking attitude, he was able to earn enough to support his entire family. However, in early 2008, Hieu was in a motorbike crash. The tragic accident forever changed his and his family's quality of life. One afternoon, while driving the motorbike of a customer to test a problem, Hieu crashed while trying to avoid a direct collision with a bicyclist making an irregular crossing. Hieu was not wearing a helmet and suffered severe brain trauma and was hospitalized for three months under intensive care. After being released from the hospital, the left side of his body was, and remains, paralyzed, and he is mentally disabled.



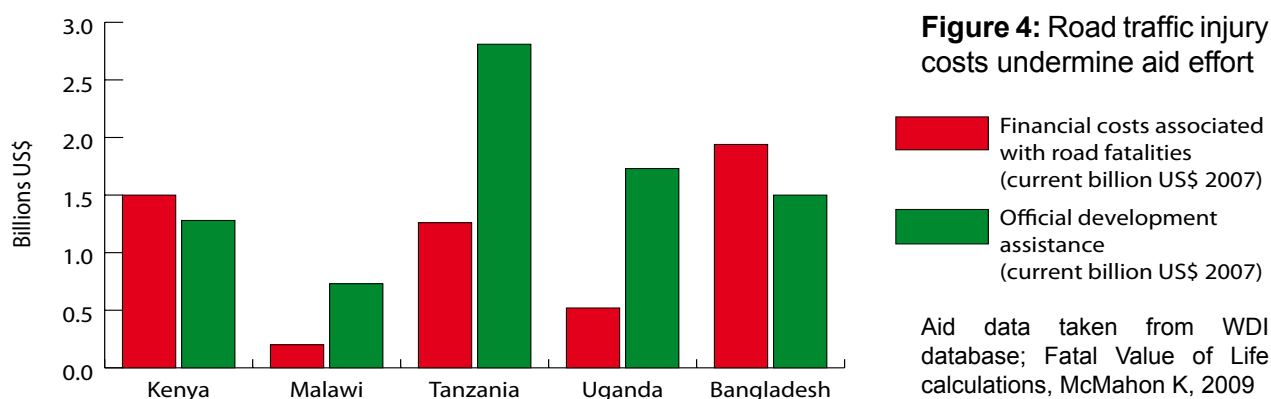
At the time of the accident, Hieu did not have medical insurance. The family had to mobilize financial support from family members and borrow cash from acquaintances. The only property of real value in the house, a Honda motorbike, was sold after the accident. They received only US\$150 for the motorbike, which covered a small portion of Hieu's total hospital charge of US\$4,500.



Hieu's pre-RTI income was an average of US\$ 170 per month. A year after the accident, Hieu, using a wheelchair that cost him US\$35, became a lottery ticket seller. His income plummeted to an average US\$30 per month -- only enough to cover his acupuncture treatment, rehabilitation fee, and other medical follow-up treatment. His father was absent, his mother had chronic arthritis and his two sisters suffered from mental illness and were not married. His income therefore supported his mother, two sisters, and his two children. His wife earned enough to support only herself as a private tailor before the accident, and following the accident, she was required to stay at home and care for Hieu. His accident pushed his family into poverty.

Since Hieu could no longer support his two children, they were separated from their parents and now live with their mother's parents. However, the grandparents were too old to provide adequate care for the children, and Hieu's two children are said to be malnourished and poorly taken care of. At the time of the interview, Hieu's relatives indicated that his wife has already shown her dissatisfaction with the family situation, and that she is thinking of leaving the family, and possibly obtaining a divorce.

Source: Asia Injury Prevention Foundation



- The poorest families are hit hardest by post-injury costs. Poor households are less likely to have the financial resources they need to pay the direct and indirect costs related to road traffic injuries. Many are driven into poverty by the costs of prolonged medical care and rehabilitation. And many more are denied access to care because they cannot afford costs. One study in Ghana found that only one quarter of people injured in road crashes used hospital services. The most common reason for not seeking care was 'lack of money'. The long-term costs associated with treating road traffic injuries drives many households into debt, diverting resources from other areas (see box 1).

Impacts on education. The effects of road traffic injury on education have been widely ignored – yet they are of great significance. Every year, around 80,000 children aged 5-14 in developing countries lose their right to education for a single tragic reason: they are killed on the world's roads, often making the journey to school. Many thousands more see their prospects for education diminished by injury and disability. For children who are left disabled, access to school can become a major problem. Post-traumatic stress is another consequence of road traffic injury that can have devastating consequences for learning achievement. And the loss of a parent can leave children with long-term psychosocial problems. In Bangladesh, road traffic accidents are the single biggest cause of death by injury among fathers and the second biggest cause of death by injury among mothers.

The cumulative costs of road traffic injuries should propel the issue into the front line of dialogue on international development goals. Losing 1-3%

of GDP on an annualised basis is an enormous brake on development. It holds back job creation and erodes opportunities for development. It also restricts the level of revenue collected by governments for investment in priority social and economic infrastructure. Yet few finance ministers appear to have made the link between road traffic injury and the national budget.

Much the same might be said of health ministers. Front-line doctors, nurses and paramedics deal every day with the consequences of the injuries sustained on national roads. They are aware of the level of resources directed towards the treatment of these injuries. Yet there is little evidence of health ministries leading calls for the road safety investments that could release large amounts of financing for the development of basic health provision.

For the individuals most directly affected, road traffic injuries are often a one-way ticket into poverty. Losses of labour caused by disability translate into lower levels of income, the erosion of savings, and reduced investment, trapping people in cycles of poverty and vulnerability. With limited coping capacity, the poorest households may have no alternative but to meet the costs of health treatment by incurring debt, cutting back on nutrition, or taking children out of school, sacrificing prospects for a better future for survival in the present.

All of this has implications for the Millennium Development Goals. Investment in roads can play an important role in accelerating progress towards poverty reduction. By the same token, investment on the current model is generating a level of human, social and economic cost that ought to be regarded as unacceptable.



Charting a new course

Addressing road safety management in a comprehensive manner requires action at many levels and the involvement of many sectors. Roads have to be designed with the security of vulnerable users treated as a priority, rather than an afterthought. Legislation aimed at lowering risk has to be not just adopted but implemented. And governments and civil society organisations have to work together to change the attitudes that endanger lives. There are no blueprints – but there are tried and tested approaches with a proven track record.

When it comes to road design the first principle is that risk prevention is better than cure. Too often in the past roads have been built with scant regards for the security of vulnerable pedestrians. In the rush to lay asphalt and create high-speed highways, planners have overlooked the first rule of road safety: namely, separate motorised vehicles and pedestrians.

The consequences can be readily observed on major highways across the developing world. Every morning, tens of thousands of primary school age children negotiate the task of crossing a major road, and often a six lane highway,

separating their home from their school. Millions of adults walk or cycle to their place of employment alongside highways lacking a safe pavement. These are problems that can be addressed through ‘retrofitting’ security in the form of a protected overpass or a protected area for pedestrians and cyclists and, where relevant, for motorcyclists. But the better option is to avoid building roads that separate communities from the schools, health clinics and jobs.

The adoption and enforcement of traffic laws and vehicle regulation can make an enormous difference. Rwanda has lower levels of road traffic injuries than many of its neighbours not because it is richer, or because it has better roads, but because its government has been more stringent in enforcing laws on speeding. In Viet Nam, a law requiring all motorcycle users to wear crash helmets has saved many lives. Ensuring that public carriers such as bus and taxi companies meet effective safety standards could avert tens of thousands of deaths annually. Increasing police training and tackling corruption are essential steps to improving enforcement of speed and drink drive laws, enabling vehicle inspection regimes and improving



road user behaviour in relation to seat belts and helmets.

Global and regional initiatives have heightened awareness of the potential for rapid progress on road safety. There have also been strong calls for international support. African ministers for transport and health have adopted a strong statement – the Accra Declaration – calling for strengthened partnerships on road safety. That theme was echoed in a 2008 United Nations General Assembly resolution. International donors and aid agencies have also acknowledged the need for a concerted effort to tackle the road safety crisis. Yet the gap between words and action remains vast:

- Only one in three developing countries has a national road safety strategy that includes specific targets and has funding allocated for their attainment
- Legislation is often partial. Fewer than one half of the countries covered in the World Health Organisation's (WHO) Global Status Report on Road Safety had a motor cycle law requiring both riders and passengers to

wear helmets. While most countries have laws prohibiting drunken driving, 49% stipulate a legal limit above that recommended by the WHO. Over one-third of countries have urban speed limits in excess of the 50km/hour threshold considered compatible with lower levels of risk.

- Even when the legislation is in place enforcement often remains weak. For example, in an assessment ranking enforcement on a scale from 0 to 10, only 9% of countries enforce speed limit provisions at a level higher than 7 in the WHO assessment. Only one in five countries was found to endorse seat belt laws.



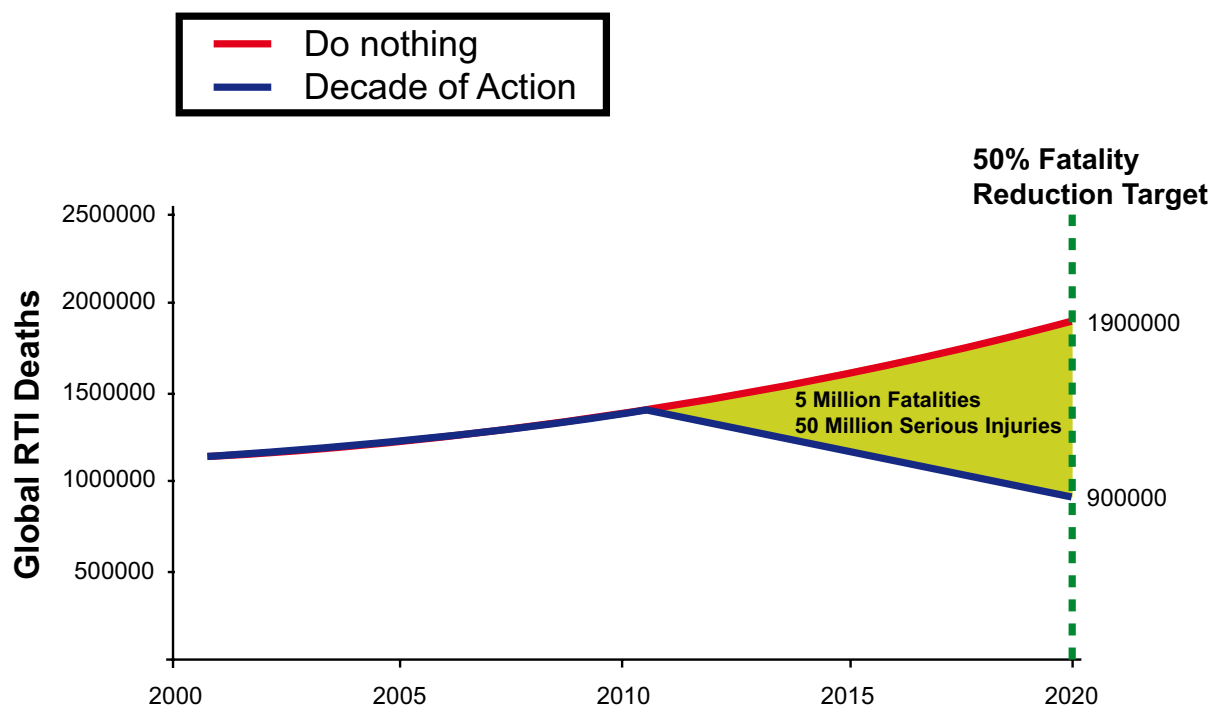
Looking ahead from Moscow

One international summit cannot resolve a crisis on the scale of the road traffic injury epidemic. 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, rather than as is currently the case an appendage.

The Moscow ministerial conference is important because it can signal a new direction, establish a level of ambition, and put in place practical measures to strengthen international cooperation. The Make Roads Safe campaign of the Commission for Global Road Safety has identified the building blocs for a concerted international effort to reduce the rising toll of road deaths and injury:

- **Commit to a decade of action with global targets.** The Moscow summit should call for a UN Decade of Action on Road Safety with a commitment to cut the forecast level of road fatalities by 50 per cent to 2020 – an outcome that would save 5 million lives and prevent 50 million injuries.
- **Strengthen national planning.** Global targets will only be meaningful if they are converted into national planning targets and – more importantly – backed by comprehensive national strategies. Governments need to set out the legislative and enforcement mechanisms that will be put in place to achieve the targets that are set. Adopting a ‘safe systems’ approach to road safety management will help to establish a clear, holistic governing framework for interventions (see box 2).

Figure 5: Changing Direction: Potential of a Decade of Action for Road Safety



Source: Guria, J. (2009)

BOX 2:

The 'Safe Systems' approach

Taking a Safe System approach can unlock a large potential for raising road safety performance. It requires that the road system be designed to expect and accommodate human error, recognising that prevention efforts notwithstanding, road users remain fallible and crashes will occur.

The basic strategy of a Safe System approach is to ensure that in the event of a crash, the impact energies remain below the threshold likely to produce either death or serious injury. This threshold will vary depending upon the level of protection offered to the road users involved. For example, the chances of survival for an unprotected pedestrian hit by a vehicle diminish rapidly at speeds greater than 30km/h, whereas for a properly restrained motor vehicle occupant in a well engineered vehicle the critical impact speed is 50km/h for side impact crashes and 70km/h for head-on crashes. The Safe System approach should therefore guide all aspects of road safety management – land use planning; road design; vehicle standards; speed limit policy; road user training – to meet these energy threshold parameters.

The Safe System offers new potential for improvement for countries at the leading edge of road safety performance, and has for example been adopted in the road safety policies of the Netherlands and Sweden, but it is appropriate at all levels of road safety performance and economic development. The interventions adopted will differ from country to country but the synergies achieved by taking a comprehensive approach can accelerate improvement significantly.

Source: ITF/OECD



- **Mobilise additional financing.** Aid donors should back national effort by adopting a \$300m international action plan to catalyse traffic injury prevention and refocus national road safety policies and budgets. For an investment of \$30m a year the leading donor nations and major public health philanthropies could transform the way road safety is understood and managed across the developing world.
- **Integrate road safety into road design.** Aid donors and the major multilateral lenders should set-aside at least 10% of financing for road programmes for investment in safety assessment and measures to protect vulnerable users. It is also important that donors strengthen their own capacity for providing support, as very few road safety specialists are currently employed within development agencies or the international financial institutions. It is welcome that the World Bank and the main regional development banks have issued a joint declaration 'A Shared Approach to Managing Road Safety' ahead of the Moscow conference. But now we need to see these words translated into action.
- **Deliver road safety vaccines.** We have the knowledge and the 'vaccines' to tackle this epidemic. Road design that puts vulnerable road users first; motorcycle helmets and seat belts; enforcement regimes for drink driving and speed; vehicle standards and driver training and licensing – these are the measures that are proven to reduce road traffic injuries. Now international and country level commitment and resources are urgently needed to deliver these vaccines.



Time for Action

The Moscow conference has an opportunity to lift the veil of neglect hanging over road safety. It can chart a new course by pressing the UN to adopt a Decade of Action for Road Safety aimed at halving the projected increase in the forecast level of road fatalities – a goal that, if achieved, could save 5 million lives and prevent 50 million serious injuries.

Translating that goal into action will require leadership at many levels. International development agencies like the World Bank, one of the largest sources of investment in roads, should ensure that road safety assessments become a standard part of the toolkit for future funding decisions. Developing country governments could return home from Moscow to draw up national plans for

cutting road deaths through practical regulatory measures. International aid donors could catalyse and support these efforts by setting up a \$300m international action plan, as proposed by the Make Roads Safe campaign, and encouraging interventions to deliver road safety vaccines.

Above all, the Moscow summit provides an opportunity to rethink the links between transport policy and development. We need to shake off a business model that measures national progress in terms of kilometres of metal roads and turns a blind eye to avoidable human suffering. And we need to put road safety at the heart of the international development agenda.



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