ROAD SAFETY MANUAL
A GUIDE FOR PRACTITIONERS!

STRATEGIC GLOBAL PERSPECTIVE

KEY DEVELOPMENTS

Introduction
Development Priority
UN Decade of Action
Shift to Safe System
Government Leadership
Building Management Capacity
References

World Road Association (PIARC)

Version 1 - 20/10/2015
2. KEY DEVELOPMENTS IN ROAD SAFETY

KEY MESSAGES

- Road safety is an urgent international development priority in view of the growing humanitarian crisis of road traffic injury in low- and middle-income countries.
- In support of the UN Decade of Action for Road Safety 2011–2020, a Global Plan has set a highly ambitious goal ‘to stabilize and then reduce forecast road deaths’ by 2020. If achieved, the estimated saving would be 5 million lives and 50 million fewer serious injuries worldwide.
- International development organisations concerned with transport and health are promoting the paradigm shift to the ethical Safe System goal and strategy, which involves zero tolerance of the traditional trade-off between mobility and serious and fatal road injury.
- Safe System is seen as particularly relevant for LMICs since it addresses the human vulnerabilities of all road users. It aligns with a range of international development goals and public policies for sustainable transport, occupational health and safety, child welfare, and social equity.
- Road safety management capacity reviews and contributions to the Global Status Reports reveal systemic weaknesses in the road safety activity of LMICs, who need to rapidly shift from weak to stronger institutional management capacity in order to produce better results.
- International development agencies emphasise that long-term governmental ownership and leadership is required. Political interest needs to be translated into ambitious long-term goals, step-wise targets, and provision of appropriate human and financial resources.
- LMICs need to be supported by substantially increased investment from aid agencies, wherever appropriate, to strengthen institutions and increase knowledge creation and transfer. Guidance and tools to aid targeted investments in capacity building for Safe System projects have been produced.
- Road safety professionals in HICs will need to continue to promote evidence-based approaches and, given that the ambitious Safe System goal now shapes intervention, they will need to embrace innovative approaches based on established safety principles.
- The safe planning, design, operation and use of the road network is recognised as a fundamental intervention strategy and the prime focus of this manual.
2.1 INTRODUCTION

This chapter discusses important new global directions in road safety for low-, middle- and high-income countries. It charts the establishment of road traffic injury prevention as an international development priority; the adoption of a global target, plan and agreement on the urgent need to scale-up investment in road safety. The paradigm shift to the Safe System is explored further and its promotion by key international development organisations to all countries is noted. Finally, this chapter notes the emphasis in international development being given to encouraging governmental leadership and building the necessary management capacity in order to achieve improved road safety outcomes.
2.2 ROAD SAFETY AS A DEVELOPMENT PRIORITY

ROAD SAFETY AND INTERNATIONAL DEVELOPMENT GOALS

In international development, road safety is being linked with the broader vision of sustainable development, poverty reduction, and the achievement of the Millennium Development Goals (MDGs). Previously, international development had a narrow focus on income and spending. However, current approaches promote higher living standards for all, with an emphasis on improved health, education and people’s ability to participate in the economy and society. Development seeks to foster an investment climate, which can encourage increased growth, productivity and employment; and to empower and invest in people so that they are included in the process (Stern et al., 2005; Bliss, 2011a). While no Millennium Development Goal was set for addressing the prevention of deaths and serious injuries in road crashes to 2015, road safety priorities align with other MDGs, particularly for environmental sustainability, public health, and poverty reduction. The post-2015 development agenda is expected to include a formally adopted goal to halve road traffic deaths by 2020 (UN Open Working Group on Sustainable Development Goals, 2014).

INITIATIVES LEADING UP TO THE UN DECADE OF ACTION

In preparation for the UN Decade of Action for Road Safety (2011–2020) and its commencement, there was unprecedented agreement from leading international organisations and road safety experts on how to address the road safety crisis emerging in LMICs; the scale of ambitious action required to address this crisis; and the critical factors for successful implementation (Bliss & Breen, 2012; WHO, 2013).

A key development was the release of the World Report on Road Traffic Injury Prevention (see Box 2.1), which was jointly issued by the World Health Organization (WHO) and the World Bank on World Health Day in 2004 (Peden et al., 2004). The World Report highlighted the growing public health burden and forecasts of road deaths and long-term injury and advocated urgent measures to address the problem as a global development and public health priority. Its findings and recommendations for country, regional and global intervention were endorsed by successive United Nations General Assembly and World Health Assembly resolutions (UN 2004-2010).

<table>
<thead>
<tr>
<th>BOX 2.1: RECOMMENDATIONS OF THE WORLD REPORT ON ROAD TRAFFIC INJURY PREVENTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Identify a lead agency in government to guide the national road safety effort.</td>
</tr>
<tr>
<td>2. Assess the problem, policies and institutional settings relating to road traffic injury and the capacity for road traffic injury prevention in each country.</td>
</tr>
<tr>
<td>3. Prepare a national road safety strategy and plan of action.</td>
</tr>
<tr>
<td>4. Allocate financial and human resources to address the problem.</td>
</tr>
<tr>
<td>5. Implement specific actions to prevent road traffic crashes, minimize injuries and their consequences and evaluate the impact of these actions.</td>
</tr>
<tr>
<td>6. Support the development of national capacity and international cooperation.</td>
</tr>
</tbody>
</table>

This initiative was followed by the creation of the World Bank’s Global Road Safety Facility (GRSF), which supported the development of new road safety management guidelines to assist countries in...
implementing the World Report’s recommendations. The GRSF funded road safety management capacity reviews and the establishment and support of international professional networks. It established Memoranda of Understanding with iRAP and other international networks such as the International Road Federation (IRF), International Road Traffic and Accident Database (IRTAD), and the International Road Policing Organization (RoadPOL). Further guidelines on interventions were produced under the umbrella of the newly created United Nations Road Safety Collaboration (UNRSC), which was called for by a UN General Assembly resolution in 2004 (A/Res/58/289). The International Road Assessment Programme (iRAP) was launched providing a key network safety assessment tool for LMICs. The launch of the OECD’s Towards Zero report brought together and further reinforced the Safe System and new thinking on approaches to road safety management (OECD, 2008). The highly visible Make Roads Safe campaign and reports were launched by the Commission for Global Road Safety (2006, 2008, 2011) and caught worldwide media attention. Towards the end of the decade, the first ever global Ministerial Conference on Road Safety took place in Moscow, which provided formal endorsement at the highest level of the need for global action. In a series of statements, the Multilateral Development Banks (led by the World Bank) promised a coordinated response for scaled-up investment in road safety management capacity and for road safety to find its place in mainstream infrastructure projects (MDB, 2009, 2011, 2012).

---

**FOOTNOTES**

- 1. The eight MDGs range from halving extreme poverty rates to halting the spread of HIV/AIDS and providing universal primary education; all by the target date of 2015. They form a blueprint (plan) agreed to by all the world’s countries and all the world’s leading development institutions ([http://www.un.org/millenniumgoals/](http://www.un.org/millenniumgoals/))
2.3 THE UN DECADE OF ACTION AND GLOBAL PLAN

The abovementioned initiatives resulted in the unanimous adoption of a resolution by the United Nations General Assembly in 2010 announcing the Decade of Action for Road Safety 2011-2020. This was followed by the launch of a Global Plan produced by the UN Road Safety Collaboration in 2011 (UN, 2010a; UNRSC, 2011a).

An ambitious goal was set to stabilise and then reduce forecast road deaths by 2020 (WHO, 2013). If achieved, this would mean an estimated saving of 5 million lives (Figure 2.1) and 50 million fewer serious injuries, with an overall benefit of more than US$3 trillion (Guria, 2009).

![Figure 2.1 Goal of the Decade of Action for Road Safety 2011-2020 - Source: Adapted from Guria, (2009); WHO, (2013).](image)

The Global Plan was developed to assist governments and other national stakeholders to develop national and local road safety activities, while simultaneously providing a framework for coordinating activities at regional and global levels. The Global Plan adopts the Safe System approach and suggests that countries work within the five pillars of action, as summarised in Box 2.2. The UN General Assembly resolution called for regular monitoring of global progress and for an increase in the percentage of countries with road safety legislation covering key risk factors to 50% by 2020. National road safety performance is being monitored and two periodic status reports have been produced to date (WHO, 2009, 2013). Mid-term and final reviews will be presented by the World Health Organization at global ministerial conferences in 2015 and 2020.
**BOX 2.2: THE GLOBAL PLAN PILLARS**

**Pillar 1: Road safety management**

This pillar highlights the need to designate a jurisdictional lead agency to develop and lead the delivery of targeted road safety activity and to provide capacity for this and related multi-sectoral coordination, which is underpinned by data collection and evidential research to assess countermeasure design and monitor implementation and effectiveness (see The Road Safety Management System).

**Pillar 2: Safer roads and mobility**

This pillar aims to raise the inherent safety and protective quality of road networks for the benefit of all road users, especially the most vulnerable (e.g. pedestrians, bicyclists and motorcyclists). This will be achieved through the implementation of road infrastructure assessment and improved safety-conscious planning, design, construction and operation of roads (see Road Safety Management of this manual).

**Pillar 3: Safer vehicles**

This pillar encourages universal deployment of improved vehicle safety technologies for both passive and active safety through a combination of harmonisation of relevant global standards, consumer information schemes, and incentives to accelerate the uptake of new technologies.

**Pillar 4: Safer road users**

The aim of this pillar is to encourage the development of comprehensive programmes to improve road user behaviour, and sustained or increased enforcement of laws and standards, combined with public awareness/education to increase seatbelt and helmet wearing rates, to reduce drink-driving, speed and other risk factors.

**Pillar 5: Post-crash response**

This pillar targets increased responsiveness to post-crash emergencies and improved ability of health and other systems to provide appropriate emergency treatment and longer-term rehabilitation for crash victims.

**Source:** UNRSC, (2011a).

---

**REGIONAL TARGETS AND PLANS**

Experience with regional targets indicates that they can play an important road safety role and provide a focus for regional and national intervention (ETSC, 2011). Encouraged by the UN Regional Commissions, the European Union and other road safety organisations, ambitious targets are being increasingly set at regional as well as national levels (see Box 2.3 and Box 2.4; UN, 2010b, UNRSC 2011b).
BOX 2.3: EXAMPLES OF CURRENT REGIONAL ROAD SAFETY TARGETS

Asia and Pacific Region:

Ministers of Transport from the region adopted a numerical target in 2006 to reduce deaths by 600,000 by 2015.

European Union:

Regional goals and targets have been set by the European Commission. These are that by 2050, the EU should move ‘close to zero fatalities’ in road transport and target halving road deaths for the interim by 2020. While highly ambitious aspirations, these are very important statements of the priority that road safety must have if EU countries are to continue to lead in global road safety, as desired by all the EU institutions.


BOX 2.4: REGIONAL SUPPORT: AFRICAN ROAD SAFETY ACTION PLAN 2011–2020

The Second African Road Safety Conference held in 2011 was organized by the UN Economic Commission for Africa, the Sub-Sahara Africa Transport Policy Program (SSATP) and the Government of Ethiopia, in collaboration with the International Road Federation (IRF), the African Union Commission (AUC), the African Development Bank (AfDB), and the World Bank. The objectives of the conference were to: (i) examine and validate the African Road Safety Action Plan that would serve as a guiding document for the implementation of the Decade of Action; (ii) propose and validate a resource-mobilisation strategy and a follow-up mechanism; and (iii) learn from good practice and share experiences. The United Nations Economic Commission for Africa (UNECA) requested that SSATP write the Road Safety Policy Framework to underpin an African Road Safety Action Plan, which was approved by the Ministers of Transport and vetted by the Heads of State in January 2012. The plan is organized around the five pillars of the Global Plan and aims to reduce forecasted fatalities for 2020 by 50%. This involves stabilising the number of deaths at 320,000, then gradually reducing them to 270,000. If the target is met, more than 1 million forecasted deaths and 10 million serious injuries will be prevented, with a social benefit of around US$340 billion. Source: African Union, (2011).

NATIONAL TARGETS AND PLANS

A key element of the Global Plan is to encourage the development of national goals, targets and plans. National target-setting in road safety is an international success story. Setting challenging but achievable quantitative targets towards the Safe System goal in order to eliminate death and long-term injury has been identified as international best practice (OECD, 2008). Quantitative targets, when supported by appropriate institutional delivery can lead to better programmes, a more effective use of public resources, and an improvement in road safety performance (Allsop et al., 2011). Until sufficient management capacity and performance data are available in LMICs to set meaningful national targets, countries are advised to adopt the long-term Safe System goal and target reductions in specific corridors and areas using survey data of infrastructure safety quality (e.g. Road Assessment Programmes) and safety behaviours (e.g. speed, crash helmet and seatbelt use, drinking and driving). Full discussion and detailed
guidance on national target-setting and the development of targeted strategies, plans and projects is provided in *Targets and Strategic Plans*. 
2.4 THE PARADIGM SHIFT TO SAFE SYSTEM

Progressive shifts in road safety thinking and practice have taken place since the middle of the last century. As outlined briefly in Scope of the Road Safety Problem, Box 1.2, an increasingly ambitious approach has been identified, which has culminated in the Safe System goal of eliminating road crash deaths and serious injuries (Peden et al., 2004; OECD, 2008; GRSF, 2009). This section discusses the evolution of these developments more fully and traces the costly path from a sole focus on the driver to the Safe System approach which encompasses and builds on the best of previous approaches.

‘BLAME THE VICTIM’ APPROACH

In the 1950s and 1960s, rapid motorisation took place in many OECD countries, accompanied by increasing numbers of road deaths and serious injuries. At that time, dispersed, uncoordinated, and poorly resourced institutional units performing isolated single functions characterised road safety management (Trinca et al., 1988). The emphasis in policy-making was on the driver. Legislative rules and penalties were established, supported by information and publicity, and subsequent changes in behaviour were expected. As experience has shown, it was wrongly believed that since human error contributed most to crash causation, educating and training road users to behave better could address the road safety problem effectively. As noted by the World Health Organization, while these measures provide general support, there is little or no evidence to indicate a casualty reduction effect (Peden et al., 2004). Over-emphasis on the role of individual responsibility and blaming the victim prevents the relevant authorities from fully embracing their responsibilities.

SYSTEMS APPROACH TO INTERVENTION

During the 1970s and 1980s, a systems perspective on interventions was evident. William Haddon, an American epidemiologist, developed a systematic framework for road safety based on a disease model that comprised infrastructure, vehicles and users in pre-crash, in-crash and post-crash stages (Haddon, 1968). Central to this approach was the understanding that the exchange of kinetic energy in a crash leads to injury, which needs to be managed to ensure that the thresholds of human tolerances to injury are not exceeded. This broadened the scope of intervention to highlight the need for system-wide delivery, and underpinned a major shift in road safety practice which took several decades to evolve. However, it did not directly address the institutional management arrangements needed to produce this intervention or target results. (OECD, 2008; GRSF, 2009).

SYSTEM-WIDE INTERVENTIONS, TARGETED RESULTS AND INSTITUTIONAL LEADERSHIP

By the early 1990s, countries achieving good results had progressed towards implementing action plans with quantitative targets to reduce death and sometimes serious injuries (OECD, 1994, 2008; PIARC, 2012). The reductions achieved in different groupings of EU countries are presented in Figure 2.2.
In many countries, casualty reductions have been achieved through system-wide intervention packages, based on evidence gathered from ongoing monitoring, evaluation and research. Typically, four broad categories of interventions were responsible for the majority of safety gains achieved. These are:

- general deterrence style enforcement of key road safety behaviours (e.g. speed, alcohol, seatbelts and child restraints, helmets, fatigue)
- safety engineering of road environments
- vehicle safety improvements
- improvements in the emergency medical system and road trauma care.

A large body of literature has been produced on evidence-based intervention used in effective targeted programmes; and a good introduction is the review provided by the World Report on Road Traffic Injury Prevention (Peden et al., 2004), OECD (2008), and PIARC (2012). Further examples of these are presented in later sections of the manual.

New attention was being given to institutional management and lead agencies. Supporting intergovernmental coordination processes were enhanced; and funding and resource allocation mechanisms and processes were established to assist the achievement of targets (Peden et al., 2004; Koornstra et al., 2002). In New Zealand, enhanced accountability arrangements included targeted hierarchies linking institutional outputs with intermediate and final outcomes. These provided the framework for coordinating and integrating multi-sectoral activity (LTSA, 2000). This evolution laid the foundation for current practice and reflects the institutional arrangements found in many better performing countries today (OECD, 2008; GRSF, 2009; PIARC, 2012).

SAFE SYSTEM GOAL AND STRATEGY AND SHARED RESPONSIBILITY

By the late 1990s, two of the world’s best performing countries had determined that maintaining continuous improvement in performance would require a more ambitious, comprehensive and sustainable approach than had been adopted in previous practice. The Dutch Sustainable Safety and Swedish Vision Zero strategies aimed to make the road system intrinsically safe (Koornstra et al., 1992; Tingvall, 1995; Wegman & Elsenaar, 1997). These have since been developed further in key publications (Tingvall & Haworth, 1999; Wegman & Aerts, 2006).
In both the Sustainable Safety and Vision Zero approaches, new emphasis is given to managing the exchange of kinetic energy in a crash to ensure that the thresholds of human tolerances to injury are not exceeded. Known generically as Safe System, the goal of eventually eliminating serious health loss in road traffic crashes provides an ethical foundation. Road deaths and serious injuries are no longer seen as a necessary price to be paid for improved mobility (Tingvall & Haworth, 1999).

Vision Zero reflects zero tolerance for the traditional trade-off between mobility and road injury.


As discussed later in Safe System Approach, this approach goes further than traditional approaches that placed the intervention focus on safer vehicles, safer roads and safer users. This newer approach now also addresses the critical interfaces between them. The ‘engineered’ elements of the system, i.e. vehicles and roads, can be designed to be compatible with the human element, recognising that while crashes might occur, the total system can be designed to minimise harm (Tingvall, 1995; Ydenius, 2010). This shared responsibility for better design is a key element of the Safe System approach.

In a sustainably safe road traffic system, infrastructure design inherently and drastically reduces crash risk. Should a crash occur, the process that determines crash severity is conditioned in such a way that severe injury is almost excluded.


In order to achieve a safe transport system, there must be a change in our views concerning responsibility, to the extent that system designers are given clearly defined responsibility for designing the road system on the basis of actual human capabilities, thereby preventing the occurrence of those cases of death and serious injury that are possible to predict and prevent.

At the same time, the tools and practices used to support the Safe System goal and approach are the same as those used in the past to prepare and implement targeted national plans. Intervention is identified for the short-, medium- and long-term returns. Targets are still set as milestones to be achieved on the path to the ultimate goal, with a new focus on targeted intermediate outcomes that are causally linked to the prevention of death and serious injury (Stigson, 2009). The rationale for this is to provide better information and management opportunity for those with direct responsibility for different aspects of the road network and traffic system safety performance. In LMICs, where crash injury databases may not yet be developed or working effectively, this approach allows for the immediate targeting of intermediate outcomes in multi-sectoral projects and, ultimately, programmes (see further discussion and guidance in Safe System Approach and Targets and Strategic Plans).

The Safe System approach builds on the best of previous approaches and addresses the issue of how to more comprehensively and rapidly address all elements of the road safety management system where there is potential for improvement. It promotes innovation and the adoption of effective new technologies (see for example Lie, 2012), underpinned by shared responsibility and strengthened, accountable institutional leadership (OECD, 2008).

Safe System is promoted in the Global Plan (UNRSC, 2011a) and by the OECD (2008), the World Bank (GRSF, 2009), ISO (2012), and many other international organisations (UNSRC, 2011b), as best practice to all countries that aim to create and establish capacity for a sustainable road traffic system, irrespective of their current economic status and safety performance.

The rationale for adopting and implementing the Safe System in LMICs is that it directly addresses the needs of vulnerable road users as well as other users. It encourages safety to be designed into developing road networks rather than being considered as an afterthought. This saves future costs that may result from neglecting safety in the planning and design process. Furthermore, the Safe System aligns well with high priority global, regional and country development goals of sustainability, harmonisation and inclusiveness (see Box 2.5).
The Safe System approach:

- addresses all elements of the road traffic system in an integrated way
- emphasises the reduction of death and long-term injury rather than the prevention of crashes, which the World Report has highlighted as an unrealistic goal
- challenges the fatalistic view aptly termed ‘the scandal of tolerance’ (Allsop, 2002) that states that road traffic injury is the price to be paid for achieving mobility and economic development. This is done by setting a societal goal with step-wise targets to eliminate road deaths and serious injuries in the long-term, which can motivate and encourage all involved
- accentuates the shared and accountable responsibility of designers and users of the road network for achieving road safety results
- addresses limitations in human capacities in the setting of safety standards and rules; and related compliance regimes for the planning, design and use of the road network; the conditions of entry and exit of vehicles and road users to the road network; and the recovery and rehabilitation of crash victims from the road network
- demands equity in addressing the safety needs of both motorised and non-motorised users
- aligns well with the goals of sustainable development and presents opportunities for achieving co-benefits with other societal objectives such as improved local air quality, greenhouse gas reduction, energy security, poverty reduction, social inclusiveness, and occupational health and safety
- necessitates the strengthening of all elements of the road safety management system, especially institutional management functions, to achieve sustainable success.


In-depth discussion of the Safe System approach, its scientific basis and scope is set out in Safe System Approach. An introduction to steps to implementing Safe System projects in low-income countries are set out in Institutionnal Management Functions in Management System Framework and Tools and discussed more fully in Safe System Approach and Targets and Strategic Plans.
2.5 THE IMPORTANCE OF GOVERNMENT LEADERSHIP

Achieving road safety results requires long-term governmental ownership, leadership and political will, which can be translated into ambitious long-term goals, step-wise targets for projects and programmes, and sufficient human and financial resources to achieve them.

An example from France of how political will at the highest level of government and with targeted investment can rapidly lead to improved road safety results is presented in Box 2.6.

BOX 2.6: ROAD SAFETY AS A PRESIDENTIAL PRIORITY IN FRANCE, 2002

President Jacques Chirac, in his Bastille Day speech in 2002, designated road safety as one of the three national priorities for his Presidency and spearheaded a new road safety action plan supported by high level leadership and coordination in France. The plan adopted in December 2002 targeted key safety behaviours such as excess speed. The plan set aside 400 million euros for a 3-year investment plan to purchase as a first step 1,000 automatic radar devices, as well as a large number of vehicles and modern breath-testing equipment (breathalysers and ethylometers). New automatic processing centres were set up for speeding offences, which rose from 1.6 million in 2003 to 4.8 million in 2004. In the first year of implementation, crash rates declined by 17.5%, serious injuries fell by 19%, and deaths were 21% lower than the previous year. Over 3 years, deaths reduced from 7,242 (2002) to 4,900 (2005).


Managing road safety is a shared responsibility at global, regional, national and local levels, and engages government, industry, other business and civil society across a wide range of sectors (Peden et al., 2004). This requires institutional leadership, cooperation and delivery capacity within government agencies, as well as with their industry, business sector and civil society partnerships over a sustained period. Road safety leadership and capacity at the jurisdictional level cannot be outsourced since the issues involved go to the core of government decision-making. Government leadership and related performance targets, tools and incentives are necessary to capture the external ‘co-benefits’ arising from improved road safety (outlined in Scope of the Road Safety Problem). Careful leadership and effective governance is essential to ensure that competing interests will not obscure this shared responsibility (GRSF, 2009; SSATP, 2014).

The World Report on Road Traffic Injury Prevention (Peden et al., 2004) highlights the fundamental role of the lead agency for road safety. Its priority recommendation to countries is to establish leadership arrangements and guidance based on successful practice. Guidance towards these ends has been produced (GRSF, 2009). This includes detailed case studies and highlights the importance of the lead agency’s role in coordinating accountable, results-focused action across government, supported by effective coordination arrangements that go beyond a consultation role to include managing decision-making processes across agreed road safety partnerships. Successful practice has demonstrated the need for the agency to be a governmental body and to be publicly accountable for its performance. While effective delivery of key management functions by lead agencies can be identified, there is no preferred structural model. However, a central road safety office with adequate human, technical and financial resources is essential. Options include a stand-alone agency, a department within a Ministry or a roads authority, or an office reporting to the Head of State. Without this leadership to organise the actions of all
agencies and stakeholders, experience shows that even the best strategies and plans will not be implemented.
2.6 BUILDING ROAD SAFETY MANAGEMENT CAPACITY

ROAD SAFETY REQUIRES A PLANNED RESPONSE

Successful road safety management is a systematic process. This has been defined and effective practice has been translated into working management system models for jurisdictions and organisations to provide tools to help address the Decade’s goals (GRSF, 2009; GRSF, 2013; OECD, 2008; ISO, 2012). As illustrated in Figure 2.3, key institutional management functions produce effective, system-wide interventions designed to produce road safety results for the interim and the long-term. See Safety Management System for a further discussion of country and organisational road safety management system frameworks.

Figure 2.3 Road safety management is a systematic process - Source: GRSF (2009) (building on frameworks of LTSA, 2000; Wegman, 2001; Koornstra et al., 2002; Bliss, 2004).

ROAD SAFETY MANAGEMENT SYSTEM WEAKNESSES

The current lack of road safety management capacity in LMICs presents a substantial barrier to implementing the ambitious Global Plan, addressing regional initiatives, and meeting national goals and targets. Road safety management capacity reviews conducted for the Global Road Safety Facility since 2006 indicate that a clearly defined results focus is often absent. This reflects the lack of leadership of targeted strategies, programmes or projects that are owned by the government and relevant agencies, with responsibilities and accountabilities for their achievement being clearly specified and accepted. As a consequence, coordination arrangements can be ineffective, supporting legislation fragmented (although some recent progress is reported; see WHO, 2013) funding insufficient and poorly targeted, promotional efforts narrowly directed, monitoring and evaluation systems ill-developed, and knowledge transfer limited. Where national targets and plans have been created, the lack of capacity to implement them...
means that their effectiveness is limited (GRSF, 2006-2012).

CRITICAL SUCCESS FACTORS

The key challenge for LMICs and international development is how to successfully implement the Global Plan's recommendations where road safety management capacity is weak. The critical issues for success are:

- how to build road safety management capacity through institutional reforms;
- how to accelerate knowledge transfer and leapfrog previous paradigms;
- how to scale-up investment;
- how to increase international cooperation and development aid support sustainably.

Sustained investments will be needed in governance and institutions, infrastructure, vehicle fleets, and related investments in the health and wellbeing of citizens to address their vulnerability to risks of death and injury. Otherwise, road safety outcomes in LMICS will continue to deteriorate in the face of rapid motorisation and increased road infrastructure provision. Meeting the management challenges of the Decade of Action for Road Safety will require these critical success factors to be addressed, if its ambitious goal is to be achieved (Bliss & Breen, 2012).

A COUNTRY INVESTMENT MODEL FOR BUILDING CAPACITY

Based on reviews of successful as well as unsuccessful practice, the World Bank’s Global Road Safety Facility has produced a country investment model in road safety management guidelines that is designed to assist LMICs and development aid agencies in addressing the issues outlined in Critical Success Factor in Building Road Safety Management Capacity (GRSF 2009, 2013). These guidelines acknowledge that LMICs cannot expect to develop all the road safety management arrangements evident in the best performing countries overnight. They outline a practical approach designed to overcome capacity barriers outlined above, as well as take account of the learning and absorptive capacity of the country concerned. These tools are described further in Safety Management System. Specific guidance on steps to be taken by roads authorities in relation to the safe planning, design, operation and use of the road network is outlined in Part Planning, Design & Operation.
2.7 REFERENCES


Allsop RE, Sze NN & Wong SC (2011), *An update on the association between setting quantified road safety targets and road fatality reduction*. Accident Analysis & Prevention, 43, 1279–1283.


Stigson H (2009), A Safe Road Transport System : Factors Influencing Injury Outcome For Car Occupants,
Karolinska Institute, Solna.

Swedish Committee of Inquiry into Road Traffic Responsibility (1996), Stockholm.


United Nations (2004–2010), General Assembly Resolutions 57/309, 58/9, 58/289, 60/5, 62/244 and 64/255 (Improving global road safety) and World Health Assembly Resolution WHA 57.10 (Road safety and health), Geneva.


Ydenius A (2010), Integration of car and road infrastructure design: crash severity and occupant injury risk evaluations in frontal real-world crashes, Karolinska Institute, Solna.