SCALING UP ROAD SAFETY ACTIVITIES IN WORLD BANK PROGRAMS IN SUB-SAHARA AFRICA

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ABSTRACT

During 2002, the World Bank commissioned CSIR Transportek (together with Africon) and SITRASS (together with INRETS) from France, to audit the road safety aspects of their current and planned sector programmes and individual projects in Sub-Sahara Africa. The main sectors investigated included: Transport, Health, Education and Urban Development.

Interviews were conducted with the World Bank Task Team Leaders in the various sectors. World Bank Projects were audited, other country documentation investigated, and some interviews conducted, in the following countries: French speaking: Benin, Burundi, Cameroon, Cote d'Ivoire, Mail, Niger, Rwanda, Senegal, Chad, Togo. English speaking: Eritrea, Ethiopia, Ghana, Lesotho, Malawi, Mozambique, Nigeria, South Africa, Tanzania, Uganda and Zambia.

Findings relate to World Bank internal structures to ensure project follow-up and monitoring and influencing the content of projects; road safety knowledge and capacity; and channels of intervention. Findings within the countries comment on the potential of regional harmonization, road safety management and integrity of governance at country level; road safety as a health priority; capacity building, technical assistance and training; knowledge base, community structures; road safety audits; comprehensive transport planning, comprehensive road safety programmes, infrastructure planning and design, accident and injury databases and road safety diagnoses; education, driver training and licensing, vehicle checks, traffic laws and regulation, road safety awareness campaigns and trauma care.

Ten critical goals are identified to ensure that the World Bank integrates road safety in their Transport, Health, Urban, and Education programmes. The most important goal for the World Bank is to ensure that their own infrastructure programmes in any sector do not generate accidents, through conducting the necessary quality assurance audits at different project levels.

Other goals that may influence project content include the improvement of road safety management in the countries, attention to injuries as a health problem, improved information for policy making, implementation and monitoring; evaluation of engineering corrective measures for especially the non-motorised transport environment, the improvement of road safety skills and knowledge in Africa, focus on vulnerable road users, focus on public transport, and interventions aiming at transforming road user behaviour.

1. INTRODUCTION

1.1 Background

The stated vision of the World Bank is to reduce poverty and to integrate poverty alleviation aspects in all the sector programs they are involved with. This is also the challenge of the transport sector. The transport modes of the poor bring to mind: pedestrians; all types of non-motorised transport such as animal-drawn carts, two-wheelers of all sorts; unroadworthy buses, overloaded taxis, and passengers in delivery vehicles.

1.2 Brief

During 2002, the World Bank commissioned CSIR Transportek (together with Africon) and SITRASS (together with INRETS) from France, to audit the road safety aspects of their current and planned sector programmes and individual projects in Sub-Sahara Africa. The main sectors investigated included: Transport, Health, Education and Urban Development.

Previous such audits were done in 1986, 1989, and 1995.

The World Bank also requested the team to make some statements regarding the linkage of traffic injury and poverty.

1.3 World Bank Context

The World Bank makes use of different funding mechanisms, including grants and loans and often work in conjunction with other donors in a country, with the effect that the road safety component of a large transport sector project, might be funded by other donors than the World Bank.

2. METHODOLOGY

Interviews were conducted with the World Bank Task Team Leaders in the various sectors. World Bank Project documentation were audited, other country documentation investigated, and some interviews conducted, in the following countries: French speaking: Benin, Burundi, Cameroon, Cote d'Ivoire, Mail, Niger, Rwanda, Senegal, Chad, Togo. English speaking: Eritrea, Ethiopia, Ghana, Lesotho, Malawi, Mozambique, Nigeria, South Africa, Tanzania, Uganda and Zambia.

Initial findings were presented to the in-house Road Safety Task Team of the World Bank and other World Bank representatives, after which their recommendations were included in the final report.

3. MAIN FINDINGS

3.1 Poverty and Traffic Accidents

Poor countries bear a disproportional burden of road traffic injuries and fatalities; Within countries, poor people account for a disproportionate portion of these deaths and injuries; In low- and middle-income countries, the transport modes available to the poor (for various reasons) carry greater personal risks than those available to their richer countrymen; The main target groups (e.g. age groups) in low and middle income countries differ from those in high income countries

3.2 The World Bank

Various issues inside the World Bank were identified. The World Bank is often aware of issues, and has addressed them to some extent. One of the problems was the fragmented way in which urban issues were dealt with. Other issues were: documentation of very large projects often did not allow for follow-up of smaller aspects of the project, such as road safety often is; the World Bank policy is to focus on expressed demands from countries and may not push too hard for the inclusion of specific content, and cannot always work directly with some role players (e.g. the police force) – implementation is more effective where there is a clear champion organisation or person in a country; the staff of the World Bank are specialists in specific fields, but are not necessarily

knowledgeable in road safety matters. One of the issues here was the documentation of the critical ingredients of successful interventions.

3.3 An Enabling Environment for Road Safety in the Countries

For road safety programmes and interventions to be effective, certain issues are of importance. These are: regional harmonisation, road safety management at country level, road safety as a priority for the health department, governance issues, capacity constraints in road authorities and the lack of a knowledge base of local road safety practitioners and community structures.

3.4 Road Safety Approaches in the World Bank Projects

Although World Bank projects include an Environmental Impact Assessment (which includes a social impact assessment and the possibility to identify potential road safety problems), the measures taken to prevent safety problems are mostly reactive and low-cost measures, instead of integration of safety criteria as a basic ingredient. Road safety audits have mostly not been performed systematically, and do not take vulnerable road users into account.

However, there were also some high profile demonstration projects based on engineering interventions for non-motorised traffic, which were documented in such a way as to enable learning.

Comprehensive road safety programmes have been developed for various countries. The implementation thereof was found to be quite varied, but most countries accepted these programmes as a basic route map for implementation of road safety in an integrated and cross-cutting way. Too often, however, the recommended action plans of comprehensive road safety studies were prioritised by the consultants or programme developer. Setting national policy always imply political choices that should be taken by country stakeholders.

All road design within projects were based on design standards, but these were found to vary extensively between different countries (and even within a country). Road design standards were biased towards vehicular requirements.

3.5 Basic Road Safety Components in Projects

The following basic road safety components were found in World Bank projects: accident and injury databases; road safety education; driver training and licensing; mandatory vehicle checks, traffic laws and regulations.

School health programmes have been integrated into the school curriculum in various countries and the same should be possible for road safety, and have been done in some countries. Mandatory vehicle checks were considered in various projects, but in those countries where mandatory vehicle checks were implemented, these were not found to be effective.

3.6 Corrective Road Safety Strategies

By far the largest component of World Bank projects in the Transport sector consisted of the upgrading of road networks. Typical problems concern deteriorating road infrastructure, but also rapid urbanisation leading to high levels of congestion and conflict between motorised and non-motorised traffic.

A number of corrective strategies are included in projects, namely, the identification and treatment of hazardous locations, minor realignment, road widening, traffic signs, speed calming and guardrails. It is important to utilise the upgrading of road infrastructure to critically look at safety.

Countries are involved in short duration awareness campaigns (usually one or two weeks per year) and overestimate the effect this should have. Funding levels for awareness campaigns were very low. Reaching and penetrating specific target groups are a problem related to available funding, lack of technologies in rural areas and the diversity of languages and cultures. Safety campaigns can

only make sense when the road safety situation (road infrastructure and traffic management) is restored to such and extent that 'safe behaviour' can be defined and explained to road users.

Appropriate emergency medical services are generally unavailable in almost all the surveyed countries. Trauma care facilities are usually situated in urban areas, causing problems for rural access. Problems are experienced in almost all facets (equipment, training, communication, understaffed). Road accident victims are normally reliant on passers-by to transport them to hospitals. Some of the World Bank staff felt that projects addressing emergency services were unsuccessful.

4. TEN CRITICAL GOALS

4.1 Goal 1: Quality Assurance of Infrastructure Projects

4.1.1 Motivation

It is unacceptable that any development in the infrastructure and transport system should generate road accidents and casualties that could have been avoided through application of current knowledge.

Since the bulk of funding of the World Bank are invested in infrastructure upgrading, this goal has the greatest potential to permeate World Bank projects.

4.1.2 Objective

- Ensure that road safety issues will be addressed in all infrastructure plans, including: roads in rural and urban areas; schools (education sector); and public services (health sector, urban development)
- Ensure that World Bank projects do not deteriorate the safety situation.

4.1.3 Strategy

Conduct road safety technical audits as quality assurance in projects with transport infrastructure components in rural and urban areas, health components, and education components.

4.2 Goal 2: Improve Management Capacity in Countries

4.2.1 Motivation

Efforts should be sustainable at country level to ensure that resources are not wasted.

4.2.2 Objective

To develop institutional capacity in road safety management in countries and regions and to ensure sustainability in Sub-Saharan countries where the World Bank has active transport sector programmes.

4.2.3 Strategy

- *At country level*

Establish a multi-sectoral decision-making and monitoring structure with recognised responsibility and ownership of the road safety issue.

The World Bank to set up appropriate funding mechanisms for road safety as has been done with Road Maintenance Funds.

Structurally ensure good governance of road safety institutions through adapted and effective procedures included in legislation.

- *At regional level*

Communal institutions such as SADC, UEMOA, and etc. should play an important role in partnerships and harmonising regional best practices.

Assist regional authorities with the establishment of minimal structures responsible for road safety matters.

4.3 Goal 3: Road Traffic Injuries as a Health Problem at Policy Level

4.3.1 Motivation

Road traffic injuries have an impact on the health system, not only directly through fatalities and the burden put on the medical care system by injuries, but also indirectly through effects of disabilities and loss of production that aggravate poverty. The World Health Organisation recognises road traffic injuries as a health problem at international level.

Recognizing road injuries as a problem should lead to more emphasis on the need for emergency wards in hospitals and specialised training of medical staff in emergency trauma treatment. Raising the priority of emergency medicine should also be beneficial for all patients.

4.3.2 Objective

International and country public health authorities in countries should recognise road injuries as a health problem.

4.3.3 Strategy

Road traffic related injuries should be recognized as a problem both by the health sector in the World Bank and by public health authorities in countries. This should enable health specialists to work at road injury prevention in addition to trauma care.

4.4 Goal 4: Improved Bases for Road Safety Policy Making, Implementation, and Monitoring

4.4.1 Motivation

Good practice in road safety requires that diagnosis studies be carried out prior to designing action programmes, in particular to rank priorities and prepare for effective measures. Investigations are also necessary to assess the feasibility of road safety interventions and examine the institutional or organisational requirements for implementation.

4.4.2 Objective

To perform specific road safety diagnoses for each country or area.

4.4.3 Strategy

Carry out road safety diagnoses at the beginning of all transport and urban development projects to determine the road safety situation or update former diagnoses.

4.5 Goal 5: Improved Knowledge of the Effects of Corrective Safety Measures

4.5.1 Motivation

It is counter-productive to continue the implementation of corrective safety measures that are ineffective or that aggravate the road safety situation. To make road safety sustainable, it is necessary that the technical knowledge of road safety professionals in countries be based on the latest available knowledge of what works and what does not, in road safety.

4.5.2 Objective

To improve the knowledge of road safety professionals, officials and World Bank staff, regarding efficient measures to apply when addressing the problems identified through the road safety

diagnosis.

4.5.3 Strategy
Evaluate all corrective measures to be implemented by the World Bank as the efficiency of road safety measures heavily depends upon implementation conditions (infrastructure, traffic environment, implementation means, and procedures).

4.6 Goal 6: Improve Road Safety Skills and Knowledge in African Countries

4.6.1 Motivation
Skills and knowledge needed for road safety management, maintenance of road safety technical tools, diagnosis and monitoring of accidents, and implementation of road safety policies and interventions are wide-ranging, and actors with different disciplinary backgrounds need to communicate. To add to the complexity, there is a high turnover of road safety decision-makers and professionals in countries, so that training must be often repeated. In order to get efficient and consistent safety work in spite of frequent changes, people assuming a responsibility in road safety at all levels in respective African countries need to get the additional training necessary to ensure the effective achievement of their tasks. This is all the more important since access to international information and exchanges of experience are not yet sufficiently developed on the African continent.

4.6.2 Objective
Create a pool of road safety expertise in Africa countries.

4.6.3 Strategy
Create a “road safety culture”: a large number of actors are called to participate in road safety, at the regional, the national or the local level.

4.7 Goal 7: Safety of Vulnerable Road Users

4.7.1 Motivation
Pedestrians are the most vulnerable road users and the most frequent accident victims in urban areas. The poorest sections of the population have no access to transport and can only walk. Improving pedestrian mobility and safety directly addresses the poverty issue and is therefore a priority for the Bank in terms of interventions included in projects

4.7.2 Objective
Improve the safe movements of pedestrians and non-motorised transport, in the urban and rural environment.

- *Strategy*

Enhance the mobility of the poor through the development of non-motorised transport modes, both in cities and in rural areas. This cannot be envisaged without ensuring that safety does not deteriorate through greater exposure of unprotected road-users.

4.8 Goal 8: Safety on Public Transport

4.8.1 Motivation
It is necessary to articulate a clear vision of the desired urban environment and the transport system and broad-based debate is necessary to align the perceptions and expectations of different role players.

4.8.2 Objective
Improve safety of public transport systems.

4.8.3 Strategy
Approach the improvement of safety on public transport through holistic transport system projects.

4.9 Goal 9: Improved Road User Behaviour

4.9.1 Motivation
Strategies are needed to prepare safer and better operating road environments, shape road user behaviour in the long term and organise transport.

4.9.2 Objective
Improve road user behaviour through a holistic integrated approach involving various sectors

4.9.3 Strategy
Apply a combination of complementary coordinated approaches.

4.10 Goal 10: Reduce the Burden of Road Injuries

4.10.1 Motivation
Improved trauma care is essential to reduce the severity of road injuries. In hospitals, care for road accident victims rely upon the existence of emergency services, staffed with trained personnel and provided with specialised equipment. Provision or upgrading of such services has so far not been a priority for World Bank projects in the Health Sector, but in view of the growing burden of injuries, priorities may need to be reviewed

4.10.2 Objective
Improve emergency services and trauma care facilities.

4.10.3 Strategy
Regard trauma care as a system in which all elements (alert, first aid or pre-hospital care, transport of the victim, access to hospital, emergency treatment), interact. Diagnose the existing system.

5. FOCUS ON ROAD SAFETY MANAGEMENT

5.1 Discussion
Virtually all the reviewed projects included the strengthening, reconsideration and reform of the current institutional structures within the borrower countries. The typical areas where institutional reform was sought target the improvement of the capacity to manage the wider road network with particular emphasis on the maintenance needs of the network. The need for the development of management systems and decision support systems; increased budgetary accountability; improved sector planning; and financing and investment programming as a means to improve governance were evident. These revised structures allow better focusing on the core functions allocated to such an organisation. The structures so initiated include National Roads Boards, Roads Agencies and dedicated Roads Funds. Particular special Units are provided for within these structures to focus on road inspections, road environment or road safety, e.g. Road Safety Councils.

These structures are theoretically all designed in a way that would allow sustainability in the long run. In practice, however, concern was raised that the sustainability of these structures are highly dependent on the management, technical and financial capacity of incumbents and that political or inter-agency agendas play an overriding role in the potential success of the restructuring.

Seen from a road safety viewpoint, the impression was that institutional reform resulted in a weak institutional framework, poor levels of road safety public awareness, under-funded Road Safety Councils, and organisations in need of improved management capability and support. The latter is especially applicable once one moves out of the Head Office environment.

The revised institutional structures provide an opportunity for the establishment of National Road Safety Councils that, theoretically, should allow better management of road safety on a countrywide basis. There is an expectation that the Councils could perform a cross-sectoral role that mimics the holistic approach needed for road safety improvement. National Road Safety Councils were established (or is being planned) as part of World Bank projects, or as the result of World Bank or donor-funded studies (e.g. Eritrea, Ethiopia, Ghana, Côte d'Ivoire, Rwanda). Some Councils were established before the last decade and the history of initiatives are not all documented.

Almost all countries had some form of multi-disciplinary structure or were in the process to create such structure.

5.2 Recommendation

The road safety management and funding issues are particularly crucial in Sub-Saharan African countries, as governments have lost much of their human resources and abilities to finance basic public services. Citizens can thus not be ensured that safety will be addressed through budgeting at the national and the local levels (methods that industrialised countries find normal).

It is thus necessary to find a way whereby different models can be clearly conceptualised, and together with a proper investigation of the specific country, devise the proper structure(s) for a country. This need does not necessarily imply the establishment of a separate structure.

The two main issues are the provision of sustainable financing and the level of authority of the structure.

Funding should cover all road safety activities that needs to be permanent: the functioning cost of the institution, action agendas, accident database, road safety activities managed from the institution, e.g., safety campaigns, seed money to initiate activities with other partners, and training. The source of funds may differ amongst countries. It seems that the choice is limited, since road maintenance funds already draw heavily on the road user's abilities to pay. Ghana has been able to broaden their funding base. World Bank projects could be instrumental in setting up funding bases as has been done for road maintenance.

Adequate formats for the organisation of road safety may vary from country to country according to specific administrative patterns, level of decentralisation, and other departmental structures. Notwithstanding the exact format, the level of authority should enable coordination of road safety policies at inter-Ministerial level. This should be translated into road safety plans and programmes to be approved through Parliament and integrated into Departmental programmes and budgets to facilitate implementation.

The current involvement of National Road Safety Councils (NRSC) in campaigns and educational activities (often the main activity of such Council) is incidental, since these functions may be done from a road safety office, road safety desks, or a road safety unit within an appropriate Department. It is however necessary to allocate the functions of road safety research management, campaigns, education support, driver training support, compilation and analysis of accident data and other information, etc. This may still be an integrated part of a NRSC, but need not necessarily be so.

6. A FRAMEWORK FOR ROAD SAFETY WORK

Because road crashes and injuries are a direct effect of the system's defects, the sectors taking part in managing the road and transport system bear a responsibility, first for the fact that injuries do occur, and secondly for alleviating the burden. The sectors involved are mainly Public Works, Urban Planning, Transport and Traffic Planning and Management, Legislation and Enforcement, and, to some extent, Education which contributes to long term behavioural adaptation.

Both categories of unwanted side effects, road injuries and pollution, are also problems addressing the public Health sector. Trauma is a legitimate public health concern besides diseases and mental health problems, and increasing frequency of road trauma means a growing burden on medical care centres and resources which are usually scarce in Africa countries. Therefore, the Health sector has a vested interest in improving road safety, and a role to play in the prevention of road injuries as well as in care for the victims. As only a small part of interventions aimed at reducing the numbers of crashes and of injuries can be directly managed by public Health authorities (for instance, measures related to driving under the influence of alcohol or drugs, drivers with disabling illnesses, etc.), the Health sector needs to build inter-sectoral partnerships to obtain the desired effects.

The issue of poverty is transversal to all sectors in the World Bank. Increased mobility through a combination of modes of transport is seen as one of the ways to reduce poverty by facilitating commercial activities and access to essential services and amenities. Unfortunately, road traffic crashes and injuries tend to aggravate poverty by neutralising some of the younger and more productive members of society. Moreover, road injuries hit particularly hard the "poorest of the poor", who travel mostly as unprotected road users and sustain severe injuries when involved in crashes, and are in addition mostly uninsured, with no financial capabilities to pay for medical care and rehabilitation. It can be said that each fatal or serious road accident hits several families, from an economic viewpoint as well as a human one, and these consequences are the most serious for the poorest who are already in a difficult social and economic situation. Thus, bad road safety performances of the road transport system negate its desired effects in terms of poverty reduction. This, again, reflects back on Health.

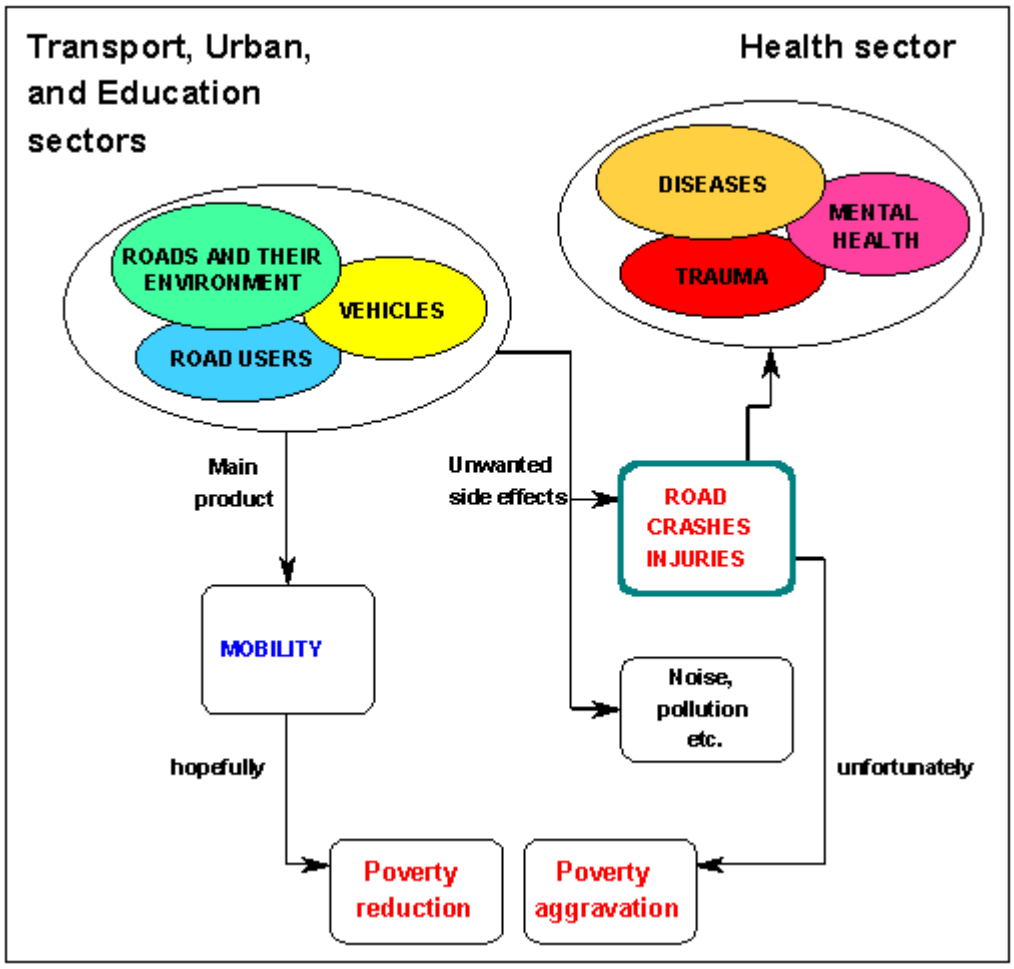

Figure 1. Road safety as a complex multi-sectoral system.

6.1 There is More Than One Way to Work at Road Safety

Interventions to reduce the road traffic injury burden do not all have the same function, and the same time span, and therefore require different management processes. Considered here are three categories of interventions: "integrated" safety, "basic" safety strategies, and "corrective" safety strategies, which respond to different goals and are complementary.

6.1.1 Integrated Safety

The first principle of "quality assurance" (not deteriorating the situation through changes made in the road and transport system) implies that interventions aimed at improving mobility and accessibility (through urban development, the road infrastructure, vehicles, or traffic) are made as safe as possible, given current knowledge of the processes generating road accidents and injuries. Also, location of new services that generate traffic of vulnerable road users such as schools, hospitals, markets or commercial centres, etc. should take into account increasing traffic in order to avoid the development of hazardous situations. To make sure that this happens, one must ensure in each project, that first, safety is taken on board projects at the right time, and secondly that the safety implications of relevant components are systematically being assessed through technical *road safety audits*, that need to be formalised so that findings are correctly acted upon. Taking safety on board is one way to contribute to poverty reduction and applies to all sectors; road safety audits are a condition of "good practice" mainly in the Transport and the Urban sectors, but also apply to infrastructure components of the Education and Health sectors.

6.1.2 Basic Road Safety Strategies and Basic Tools

Basic" road safety strategies are meant to shape road user behaviour in the long term and to prepare safer and better operating road environments. Some basic tools are needed to provide monitoring of the crash and injury situation and solid ground for all safety interventions. They are also designed with a long-term view of road safety management in mind.

Basic safety strategies include law enforcement, education, accident databases, and vehicle safety.

6.1.3 Corrective Safety Strategies

Corrective road safety strategies aim at eliminating the unwanted side effects of the existing road and transport system and address one or several of its components (infrastructure, vehicle and traffic, road users). When designing a road safety programme targeted at short or medium term effects on road crashes and injuries, corrective safety must be considered.

To be efficient in reducing the road toll, corrective safety interventions should address targets that are proven to be considerable injury problems and should focus on eliminating or neutralising relevant risk, crash or injury factors. Injury targets as well as risk and crash-generating factors need to be identified through factual analyses. A comprehensive road safety diagnosis is thus indispensable prior to designing a corrective road safety programme at all levels (country, city, province, road, local area). If not acted upon rapidly, road safety diagnoses need to be updated after two or three years as the traffic and safety situation evolves, particularly in countries with escalating urbanisation and motorisation.

These include the improvement of hazardous accident locations, speed management, the safety of specific target groups such as pedestrians and children, improved trauma care.

7. CONCLUSION

Although the study reflects the World Bank interest in road safety, the findings reflect well-known problems in road safety management and other road safety issues.

Donor funding has influenced the way, for instance, that AIDS is approached in Africa. The World Bank, together with other donors and with the World Health Organisation as strategic partner, is now turning a special focus on road safety. Can this shape the regional approach?

Approaching road safety through integrative strategies, the provision of safe infrastructure and integrated urban plans (that take non motorised transport into account), is the basic staring point and involves specifically the engineering profession. This has implications for the training of these professionals and the implementation of road safety audits and road safety assessments.

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1986 to present CSIR Transportek
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Elna van Niekerk has been involved with road safety for the past 18 years and has worked in various road safety areas, including accident data systems and the analysis of accident data, the facilitation of processes to develop road safety plans for different management levels; audits of road safety management issues (including law enforcement deployment levels); and various research projects, including an audit of road safety activities in World Bank projects in Sub-Sahara Africa.

She is also involved in short courses in road safety and in the development of training materials for various road safety themes.