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## Case Study: Road Safety in Ethiopia

## GLOSSARY

AACRA	Addis Ababa City Roads Authority
AATBO	Addis Ababa Transport Branch Office (of the TA)
AACTPO	Addis Ababa City Traffic Police Office
AU	African Union
COMESA	Common Market for Eastern and Southern Africa
ECA	Economic Commission for Africa
EPE	Ethiopian Petroleum Enterprise
EMS	Emergency Medical Service
ERA	Ethiopian Roads Authority
ETB	Ethiopian Birr
FPC	Federal Police Commission
GDP	Gross Domestic Product
GRSP	Global Road Safety Partnership
MOTC	Ministry of Transport and Communications
NRSC	interim National Road Safety Committee
NRSCO	Interim National Road Safety Coordinating Office
RF	Road Fund
RRA	(Regional) Rural Roads Authority
RRSC	Interim Regional Road Safety Committee
RRSCO	Interim Regional Road Safety Coordinating Office
RSDP	Road Sector Development Programme
SNNP	Southern Nations, Nationalities and Peoples (Region)
TA	Transport Authority
TOR	Terms of Reference
TRL	Transport Research Laboratory
UN	United Nations
UNRSC	United Nations Road Safety Collaboration
VIP	Violence and Injury Prevention
WHO	World Health Organization

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## EXECUTIVE SUMMARY

Road traffic accident is the cause of significant loss of human and economic resources worldwide. About 1.2 million people die and 50 million are injured annually. More than 85% of these casualties occur in low and middle income countries. It also imposes a huge economic burden on developing economies, amounting to 1-2% of GNP in most countries. Looking at the extent and magnitude of the problem, the United Nations General Assembly has adopted three resolutions, in which it called on member states, WHO, the five regional commissions, and international organizations to address the global road safety crisis. In response to this, many road safety initiatives are being undertaken at international, continental, regional, national levels in order to improve the road safety situation.

In implementing the resolutions of the United Nations General Assembly, the five United Nations Regional Commissions have received funding for a project entitled: Improving Global Road Safety: setting regional and national road traffic casualty reduction targets. The overall objective of the project is to assist low and middle income countries to develop regional and national road traffic casualty reduction targets and to provide them with examples of good road safety practice. For the African continent, ECA is undertaking five case studies in different countries representing eastern, western, central, northern and southern African countries. This report presents one of the case studies carried out in Ethiopia representing eastern African countries.

Ethiopia is a landlocked country located in Eastern Africa with a land area of about 1.13 million sq. km and with a population of about 74 million in 2007. The country has a wide topographic feature varying between an altitude of 4620 m above mean sea level to about 120 m below mean sea level with a very difficult terrain for the provision of transport facilities. In the context of Ethiopia's topography and pattern of settlement, transport plays a crucial role in facilitating socio-economic development. With respect to this, Ethiopia has the Addis Ababa-Djibouti railway line, one of the most successful airlines in Africa providing local and international transport services, and road network which the country heavily relies on for both domestic as well as international services.

Recognizing the importance of the road transport, the Government of Ethiopia has launched a Road Sector Development Programme (RSDP) since 1997 which focused on upgrading and rehabilitating the existing road network, expanding the

road network, and providing regular maintenance. Since then, the condition of roads has improved and the network which was about 26,550 km at the beginning of RSDP in 1997 has increased to 44,359 km by the year 2008.

However, road traffic accident remains to be one of the critical problems of the road transport of Ethiopia without due consideration. Although the traffic accident death rate per ten thousand motor vehicles (95 in 2007/8<sup>1</sup>) is showing a decreasing trend in recent years, it still puts Ethiopia on the extreme high side of the international road safety scene. In the last Ethiopian fiscal year (2007/8), for example, police reported 15,086 accidents which caused the losses of 2,161 lives. Up to 2005/6, traffic accidents and fatalities increased at 17 % and 10 % per year respectively, but in the recent couple of years there is a sudden drop. The reliability of the recent drop should, however, be evaluated over a longer period of time as it could be due to random variation and/or under reporting.

Despite the huge investment programme of the Government on road network expansion and rehabilitation, and the extent and severity of road traffic accident to road transport, Ethiopia has no road safety policy, strategy or programme. As a result of this, road safety issues in the country are, generally, addressed by different agencies in a piecemeal fashion without a legal lead agency. Transport legislations and regulations used in Ethiopia are generally old for the present situations. However, some revised and new transport legislations are enacted recently. The legal document for the establishment of a National Road Safety Council, and other transport legislations are revised and waiting approval.

A sectoral road safety study for Ethiopia carried out by TRL in association with Ross Silcock in 2001 proposed a two-year action plan focusing on the following four key areas:

- (1) **National Management:** Establish interim Road Safety Committees at the federal and regional levels to coordinate road safety activities in the transition period, and establish a permanent National Road Safety Council.
- (2) **Regional Initiatives:** Organize regional road safety awareness seminars, conduct regional road safety baseline surveys, and produce regional hazardous location maps.

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<sup>1</sup> The Ethiopian fiscal year starts on 8<sup>th</sup> of July of the previous year and ends 7<sup>th</sup> of July in the following year.

- (3) **Roads Sector:** Introduce traffic safety into the Road Sector Development Programme (RSDP) and establish traffic safety engineering units in road authorities.
- (4) **Demonstration projects:** Using the Road Fund safety allocations, promote the undertaking of demonstration projects by road safety stakeholders, and monitor and evaluate them. The demonstration projects were expected to serve as a means of developing experience and sharing lessons so that Ethiopia has the capacity to develop, manage, and monitor its own road safety programme.

In accordance with the recommendation of the road safety study, an interim National Road Safety Committee consisting of the General Directors of Transport Authority, Ethiopian Roads Authority, and Road Fund, and Commissioner of Federal Police Commission was established in 2002. Under the committee, an interim National Road Safety Coordination Office was also created. The responsibilities of the interim committee are to develop and approve programmes and project proposals as well as to allocate funding obtained from the Road Fund. The office serves as a secretariat, coordinator, and promoter of cooperations and collaborations between key road safety organizations. Following this, regional road safety committees were also established in all regional states to plan and promote road safety and to coordinate the collaborative efforts of the concerned stakeholders in their respective regions.

One of the identified areas of focus by the interim committee was to improve road traffic accident reporting and establish computerized database system. With respect to this, the national coordinating office has prepared a standard traffic accident on-the-spot reporting format and a computer software to store and manage accident database. Even if this was introduced as a pilot level in the city of Dire Dawa in 2005, the implementation has not gone far.

In order to improve traffic law enforcement, and accident investigation and reporting, successive seminars and workshops have been conducted, and efforts were also made to improve the capacity of the traffic police with the provision of vehicles, motor cycles, and introduction of radar speed controlling devices. As part of the demonstration projects, targeted traffic control at accident locations and on main accident causes was conducted. The pilot projects were found to be very effective, but the implementations are not sustainable due to mainly lack of adequate training, professional discipline, and capacity, coupled with improper organizational structure.

The plan by the interim committee to introduce traffic safety into the Road Sector Development Programme (RSDP) and establish traffic safety engineering units in road authorities has not been realized. Road traffic safety is not an issue explicitly stated in the establishment proclamations of road agencies in Ethiopia. Road safety is only considered as routine of design as well as construction and maintenance works to post traffic signs and pavement markings. Road safety improvements based on safety audits and detailed accident black spot studies are generally very limited.

In Ethiopia, there is a mandatory annual vehicle inspection. Inspection of vehicle body changes and imported vehicles are also mandatory before they are licensed to operate on the road. Currently, the Federal Transport Authority has revised the vehicle inspection procedure in which transport agencies are enabled to contract out the annual vehicle inspections and focus on their controlling functions. In the new procedure, inspecting machines are to be introduced. Standard vehicle inspection formats for each vehicle categories are prepared. Contacts between vehicle owners and inspecting technicians are avoided to control corruption.

A revised proclamation of driver's training, testing, and licensing is enacted in 2008. The proclamation categorizes driving licenses into seven groups based on the types and services of vehicles. The system which is being introduced in accordance with the proclamation requires special theoretical and practical training and testing for each category. The theoretical examination is computerized and automated so that candidates answer examination questions on computer and know their results instantly. Practical examinations are made without contacts between the candidates and examiners with the help of a video camera.

The interim committee and the coordinating office have been coordinating to include safety education in the national basic education up to grade 8 syllabuses. Traffic safety clubs at schools and student traffic policing in urban areas are contributing in improving road safety. Road safety publicity is also made by mass media organizations through road safety programmes and campaigns. However, road safety publicity has never been focusing on identified targeted groups of road users to make the efforts more effective. The participation of the private sector in road safety in Ethiopia, particularly in safety education and publicity, has been very encouraging. However, their efforts have not been centrally coordinated to focus on certain targeted road traffic safety problems.

Emergency pre-hospital medical care system is practically non-existent in Ethiopia. Road traffic accident injuries are transported to the nearest health centre for emergency medical treatments without any health professional care at the



accident scene or during transportation. In the recent reform of the Ministry of Health, Emergency Medical Service is taken as one of the focus areas in hospital organization. The gap that exists in pre-hospital care is also identified as a critical problem. However, currently the ministry does not have standards or guidelines with respect to pre-hospital care and emergency service in the country.

A new proclamation against third party risks has been approved in January 2008. The proclamation prohibits driving a vehicle without a third party insurance coverage. The proclamation also includes the provision for the establishment of an Insurance Fund as a permanent financial source to provide for emergency medical treatment. When the proclamation is fully implemented, it is expected to resolve problems related to emergency medical treatments.

The task identified and listed in the action plan of the interim committee to initiate and promote research and training in road safety has not been realized. Very little is known in Ethiopia about the traffic safety knowledge, attitude and behavior of road users, and the causes of traffic accidents and their effective counter measures. There is a need of detailed and sustainable research works in the area of road traffic safety which addresses critical problems in the country. Short and long term trainings are also critically important in improving road safety capacity in the key organizations so that they will be in a position to sustainably implement road safety programmes.

When the interim Road Safety Committee started its activities, it has set a “national road safety goal” of reducing the benchmark rate (the rate in 2002/03, 136 per 10,000 vehicles) by 60% by the year 2009/10. The target was not, however, approved by the Government. As a result of this, there has not been a well established system of intervention and effective institutional management system. Consequently, the target has not been widely advocated and given adequate focus by all road safety stakeholders on how to achieve it.

The results of this case study shows that the road safety works and its management system in Ethiopia is not coping with the magnitude of the traffic accident problems and the worsening situation related to the road network expansion, population, and motorization. The situation requires that the Government and all stakeholders give immediate attention to address it in sustainable way. Based on experiences gained from industrialized countries, it is proposed to establish a ten-year successive plan for the period 2010-2020, under the Road Safety Vision 2020: **“Making Ethiopian Roads Safer for Every One”**. The proposed target of the Road Safety Vision 2020 is to reduce the fatality rate to 25 fatalities per 10,000 vehicles by 2020 from the current base rate. Along with main target, sub-targets are proposed. List of broad

interventions required to attain the road safety targets are suggested. The proposal emphasizes the need for dedicated involvement of all road safety stakeholders. It underlines the need for transparent system of monitoring and evaluating strategies, programmes, measures, and performances.

Based on the findings of the study, the report provides recommendations on the need for clear Government policy, legislation, institutional organizations, and funding to sustainably address road safety issues through Road Safety Vision 2020 in Ethiopia. It further pointed the focus areas of national road safety strategies and programmes that should be defined in detail by the road safety lead agency and stakeholders to achieve the proposed road safety targets.

# 1. INTRODUCTION

## 1.1. General

According to the World Health Organization (WHO) Report<sup>2</sup>, road crashes are the leading cause of death worldwide for children and young people. About 1.2 million people die and 50 million are injured annually worldwide. More than 85% of these casualties occur in low and middle income countries. Africa has the world's highest death rate per population (28.3 per 100,000 of the population<sup>3</sup> when corrected for under-reporting). Road traffic deaths and injuries impose a huge economic burden on developing economies, amounting to 1-2% of GNP in most countries. Unless adequate measures are taken timely, the situation is expected to get worse.

Looking at the extent and magnitude of the problem, the United Nations General Assembly has adopted three resolutions (58/289, 60/15, and 62/244) since 2004, in which it called on member states, WHO, the five regional commissions, and international organizations to address the global road safety crisis. At national and sub-regional levels, many road safety initiatives are being undertaken by member states and sub-regional organizations in order to improve the road safety situation in Africa.

At the continental level and in response to the United Nations General Assembly's appeal, the Economic Commission for Africa (ECA) and WHO jointly with the Government of Ghana organized a Road Safety Conference from 5th to 7th February 2007 and a Ministerial Roundtable discussion on 8th February 2007 in Accra, Ghana. The Conference adopted the Accra Declaration in which the ministers committed to work together to stop the growing epidemic of deaths and injuries on African roads.

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<sup>2</sup> World Report on road traffic injury prevention, summary. WHO, Geneva, 2004.

<sup>3</sup> *ScienceDaily*: "Road Traffic Injury Is An Escalating Burden In Africa" (June 27, 2007; <http://www.sciencedaily.com/releases/2007/06/070626151407.htm>)

At the international level, a United Nations Road Safety Collaboration (UNRSC) has been established upon the United Nations General Assembly's resolution A/RES58/289 on "Improving global road safety" which invited WHO to work in close cooperation with the United Nations regional commissions and to act as the coordinator on road safety issues across the United Nations system. Also, the Global Road Safety Partnership (GRSP) brings together governments and governmental agencies, the private sector, and civil society organizations to address road safety issues in low and middle-income countries.

In continuation of efforts to implement the recommendations made in the General Assembly resolution A/RES/60/5 on improving global road safety, the five United Nations Regional Commissions have received funding for a project entitled: Improving Global Road Safety: setting regional and national road traffic casualty reduction targets. The road safety targets can be expressed in terms of reductions in deaths or injuries or addressed at specific groups of road users (e.g. children, pedestrians) or problem areas (e.g. drink driving, helmet wearing). Such targets are also important in highlighting the extent of a country's road safety problem and providing motivation for change.

The overall objective of the project is to assist low and middle income countries to develop regional and national road traffic casualty reduction targets and to provide them with examples of good road safety practice. For the African continent, ECA is undertaking five case studies in different countries representing eastern, western, central, northern and southern African countries.

This report presents one of the case studies carried out in Ethiopia representing eastern African countries.

The specific objectives of this study as stipulated in the TOR are to:

- Examine the road safety situation in Ethiopia including an analysis of the strengths and weaknesses of different aspects such as national policies, institutions, funding, human capacity, and health issues like post accident care (first aid), among others;

- Identify national road safety targets and indicators if they exist, and propose different types of road safety targets together with measurement criteria; and
- Formulate recommendations with the view to improving the situation.

## **1.2. Country Perspective**

Ethiopia is a landlocked country located in Eastern Africa bordering the Sudan, Eritrea, Djibouti, Somalia, and Kenya with a land area of about 1.13 million sq. km and a population of about 74 million in 2007, out of which only about 16 % live in urban areas. It has a tropical monsoon climate with wide topographic-induced variation. The country has a wide topographic feature varying between an altitude of 4620 m above mean sea level (Ras Dashen) to about 120 m below mean sea level (Danakil Depression) with a very difficult terrain (highlands criss-crossed by numerous river valleys and the Great East African Rift Valley) for the provision of transport facilities.

Ethiopia is one of the poorest and the least developed countries in the world. Its economy is based on agriculture, accounting for almost half of GDP, 60% of exports, and 80% of total employment. Coffee is critical to the Ethiopian economy with exports of some \$350 million in 2006. The export of oils seeds is also significantly increasing. In recent years, investment in floriculture is increasing and flower export is supplementing the coffee export. In the last three years, Ethiopia's economy is said to be growing over 10% and the GDP per capita<sup>4</sup> is estimated to be USD 800 in 2008.

In the context of Ethiopia's topography and pattern of settlement, transport plays a crucial role in facilitating socio-economic development. With respect to this, the Addis Ababa-Djibouti railway line is the only railway in the country. Ethiopia has one of the most successful airlines in Africa providing local and international transport services for passengers and freight, but local air transport service represents only a small fraction of the total transport demand due, generally, to unaffordable airfare.

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<sup>4</sup> CIA The World Fact Book –Ethiopia, (as updated on 23 April 2009).

Road transport remains to be the mode of transport that the country heavily relies on for both domestic as well as for international services.

### 1.3. Road Infrastructure Development

Recognizing the importance of the road transport in supporting social and economic growth and in meeting poverty reduction objectives, the Federal Democratic Republic of Ethiopia has placed increased emphasis on improving the quality and size of the road infrastructure. To address the constraints of the road network coverage and low standards, the Government launched the Road Sector Development Programme (RSDP) in 1997. The programme focused on the restoration of the road network to acceptable condition, specifically on (a) upgrading and rehabilitation of main roads, (b) construction of new roads, and (c) implementing regular maintenance of the road network.

Since then, the condition of roads has improved and new links have been constructed. Within eleven years of the programme, a total of 102,525 km of roads were constructed, upgraded/rehabilitated or maintained. The network which was about 26,550 km at the beginning of RSDP in 1997 has increased to 44,359 km by the year 2008. Figure 1- 1 shows the trend of road infrastructure development in Ethiopia.

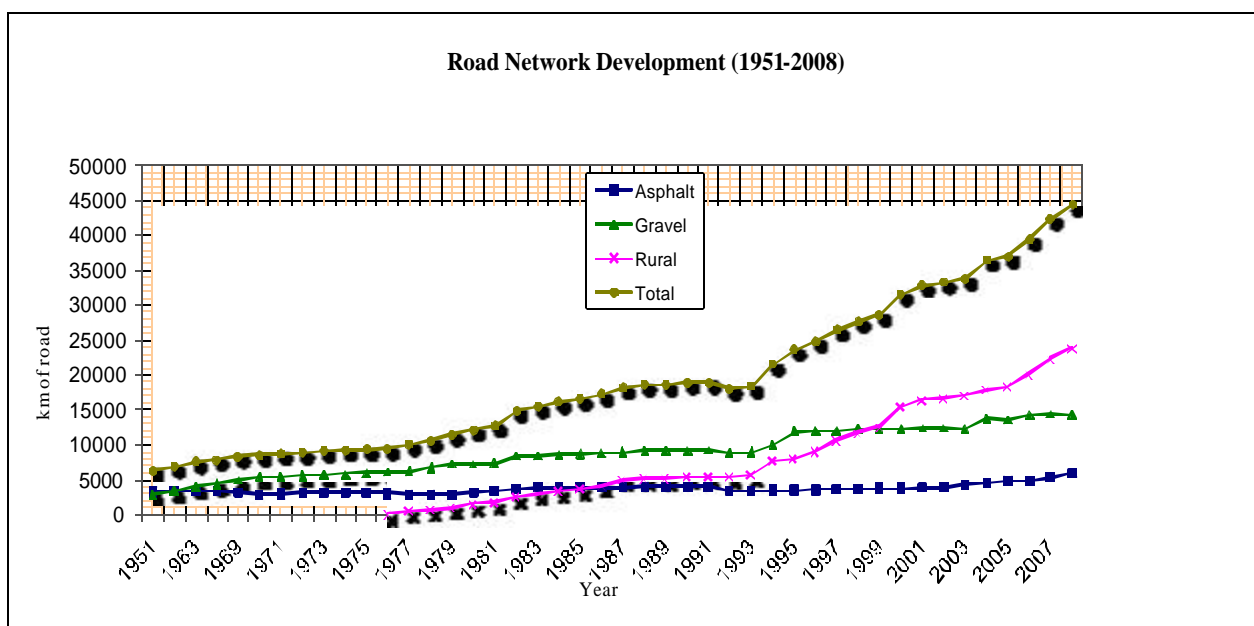


Figure 1- 1 Trend of road infrastructure development

### 1.4. Trend of National Vehicle Fleet

Ethiopia is one of the African countries with least vehicle-ownership. According to the available yearly inspected and registered national vehicle-fleet data, motorization per ten thousand populations has increased from 15 to 22 in ten years (1994/5-2004/5), which is nearly 4 % per year. The vehicle fleet sharply increased at annual rate of 10% in the period 2001/2-2004/5. The increase in station wagons and trailers contributed much to the high growth rate of vehicle population. The number of private cars has increased annually by 8%. In 2004/5, the vehicle fleet was composed of 37 % private cars, 7% station wagons, 9 % taxis, 9 % buses, 21 % small trucks, and 17% trucks and truck-trailers.

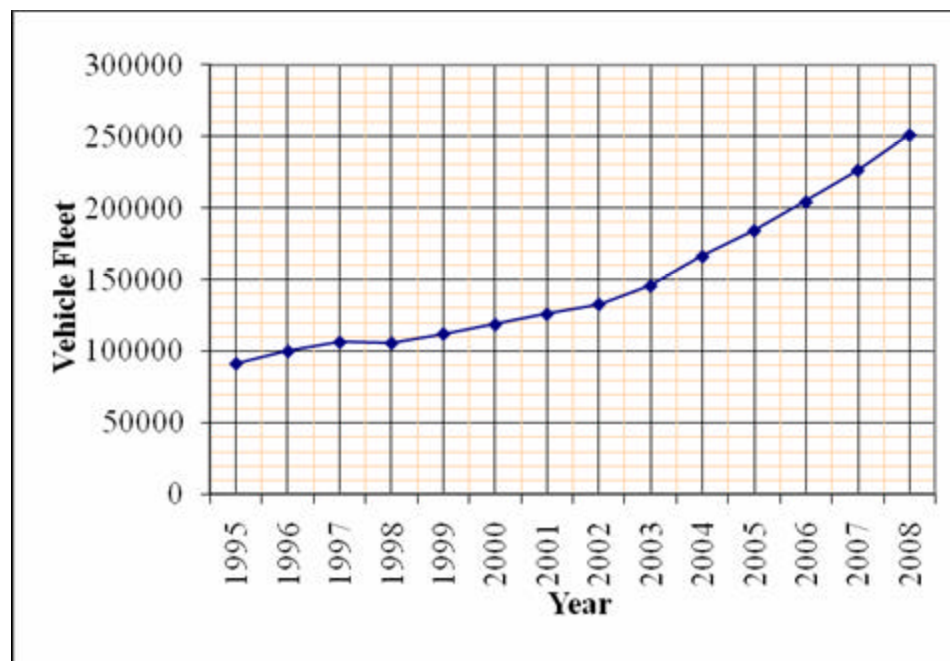


Figure 1- 2 Trend of national vehicle fleet

Due to the changes in organization of relevant offices at the federal and regional levels, detailed data on the national vehicle fleet is not available since 2004/5. Figure 1- 2 shows the trend of the national vehicle fleet determined from the available data in 1994/5-2004/5. Accordingly, the vehicle fleet in Ethiopia is

estimated at about 250,000 in 2008, which brings the country's motorization level to 32 vehicles per 10,000 inhabitants.

Like many developing countries, the vehicle fleet in Ethiopia generally consists of very old vehicles and without adequate maintenance. There is no, however, detailed factual data to substantiate the age of the national vehicle fleet. According to the information obtained from the Federal Transport Authority<sup>5</sup>, on average vehicles being imported to the country are 20 or more years old and the age of most of the national vehicle fleet is believed to be 30 or more years.

### **1.5. Overview of Road Safety in Ethiopia**

Ethiopia stands as one of the worst countries with respect to road safety performance in terms of traffic accident fatalities per 10,000 vehicles (95 in 2007/8). However, it is one of the best when the same is expressed in terms of traffic accident fatalities per 100,000 populations (2.84 in 2007/8). This has been cited in different local and international studies.

For example, a paper<sup>6</sup> which analyzed the trend of traffic accidents over 1968/9-1994/5 in Ethiopia was presented at the Third African Road Safety Congress. In the period of analysis, the fatality rates were between 165 and 233 per 10,000 vehicles. The fatality risks were, however, between 2.2 and 4.0 per 100,000 populations. The paper further identified pedestrians as the most vulnerable road users and buses and trucks as the vehicle types most frequently involved in traffic accidents.

A comprehensive analysis of the road safety problem in Ethiopia and a detailed study in the city of Addis Ababa was also made<sup>7</sup>. The study showed that traffic accident fatalities progressively increase with the growth in population and the number of vehicles. 56 % of the fatalities during 1987/8-1996/7 were pedestrians,

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<sup>5</sup> Ato Nigussie Kebede, Directorate, Vehicle Inspection and Registration, Federal Transport Authority, May 15, 2009.

<sup>6</sup> Berhanu, G. (1997). Traffic Accidents in Ethiopia: Analysis of Severity. Third African Road Safety Congress; Compendium of papers; Volume 1. p 301-313.

<sup>7</sup> Berhanu, G. (2000). Effects of Road Safety and Traffic factors in Ethiopia. Dr.Ing. thesis. Norwegian University of Science and Technology, Trondheim.



which is higher than the corresponding average for African countries (40%), and the average for some developed countries (20%) in the period. The pedestrian fatalities in Addis Ababa are much higher, 88 % of fatalities in 1987/8-1993/4. The study underlined the significant contribution of roads and environments to road traffic accidents in the country, and pointed to various engineering countermeasures. Considering the severity of the road safety problem and remarkable infrastructure development, the study recommended safety improvements on existing roads and incorporation of safety considerations at an early stage during planning and design of roads.

An assessment of road accidents made<sup>8</sup> in Ethiopia highlighted that the country has one of the world's worst accident records, 170 fatalities per 10,000 vehicles. On the other hand, the fatality risk per head of population was one of the lowest, at 3 per 100,000 populations in 1994/5, due to the low level of motorisation. The accident cost analysis made during the study gave an estimate economic cost of traffic accident between 340-430 million ETB which is 0.8-0.9 % of the gross domestic product in 1999. The study further noted the worsening and the likely more severe situation due to under reporting.

The occurrence of traffic accidents in the country is increasing as the exposure to this risk increases with rapid motorization (without appropriate regulation), rapid population growth, and increase in the road network coupled with poor attitude and safety culture of road users. Although there are limited activities towards combating the problem, it is insufficient by any standard relative to the worsening situation. Section 2 provides detailed analysis of the current road traffic safety in the country.

## **1.6. Structure of the Report**

Following this introduction, the remainder of this report is structured as follows:

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<sup>8</sup> TRL Limited in association with Ross Silcock Ltd. (2001). Study Report for a Sectoral Road Safety Programme in Ethiopia. Volume 1: Main Report and Appendices. Unpublished Project Report PR/INT/694/01.

*Section 2* presents progress assessment of road safety in the past few years. The trends and characteristics of road traffic accidents are analysed.

*Section 3* provides review of legislations and regulations linked to road safety. Institutional organizations/stakeholders and their roles in addressing road safety issues are explained. Funding of road safety activities is also presented.

*Section 4* gives detailed descriptions of road safety works in Ethiopia. It covers road accident reporting and database management system, vehicle inspection, driver licensing, education and publicity of road safety, safety of road infrastructure, insurance system, enforcement, emergency and pre-hospital care.

Section 5 presents the road safety goal up to 2010. Based on the findings of the preceding sections, Section 5 also provides details of the proposed road safety targets: Road Safety Vision 2020: “**Making Ethiopian Roads Safer for Every One**”.

The last section, Section 6, provides recommendations formulated in view of improving the road safety situation sustainably and effectively.

## **2. TRENDS AND CHARACTERISTICS OF ROAD TRAFFIC ACCIDENTS**

### **2.1. Trend of Traffic Accidents**

Road traffic accident in Ethiopia is a cause of significant losses of human and economic resources. In the last Ethiopian fiscal year (2007/8), police reported 15,086 accidents which caused the losses of 2,161 lives and over ETB 82 million equivalent to US\$7.3 million (cost estimate of property damage by police). It would be impossible to attach a value to each case of human sacrifice and suffering, add up the values and produce a figure that captures the national social cost of road crashes and injuries. However, the economic costs of road traffic accidents are, evidently, a heavy burden for the national economy. According to the World Health Organization report<sup>9</sup> which nearly corresponds to the findings of TRL and Ross Silcock<sup>10</sup>, the economic costs of road crashes and injuries are estimated to be 1% of gross domestic product (GDP) in low-income countries such as Ethiopia.

Despite having very low road network density and vehicle ownership, the country has a relatively high accident record which has been indicated as the worst example by different authors (Jacobs and Sayer, 1983; TRL and Ross Silcock Partnership, 1991; Downing et al., 1991). Figure 2-1 shows the alarming increasing trend of traffic accidents and fatalities at 17 % and 10 % per year respectively with vehicle fleet and road network in the country up to 2005/6, but a sudden decrease in the recent couple of years.

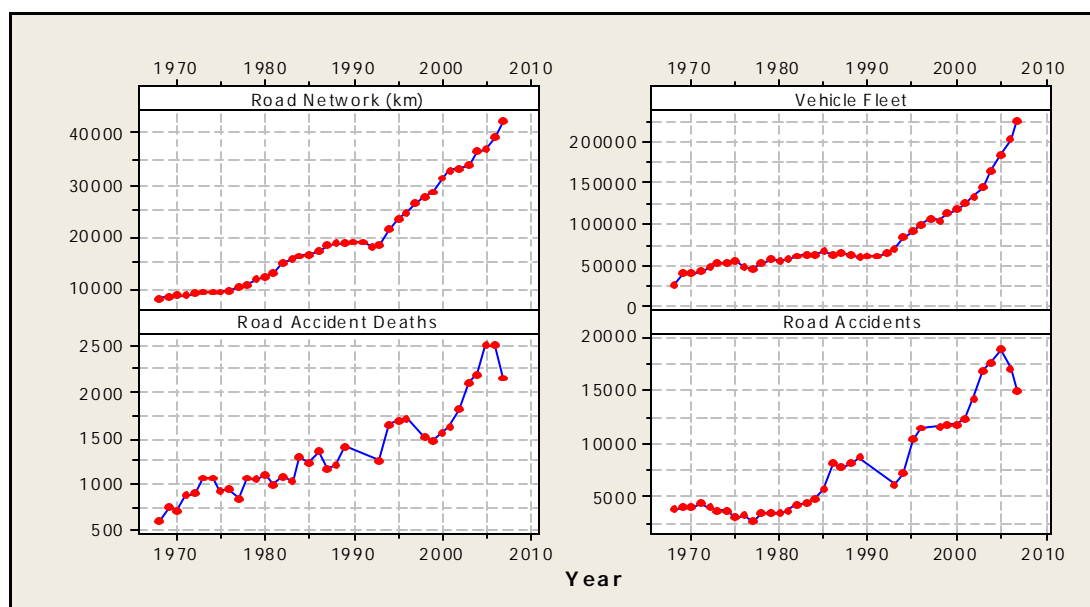
The recent phenomenon of decreasing trend of traffic accidents in the country can be seen positively. However, with the increasing exposure which can be measured indirectly by the increase in population, motorization, and road network expansion in the country, and low-level of safety awareness and road safety work, such

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<sup>9</sup> World Health Organization (2004). Op. cit. p. 15.

<sup>10</sup> TRL Limited in association with Ross Silcock Ltd. (2001). Op.cit.

sudden drop is not normally expected and its reliability should be evaluated over longer period of time. One could rather be suspicious if it is due to random variation, underreporting or both. The historical trend shown in Figure 2-1 clearly demonstrates such random variations over a long period of time.



Data Source: Federal Police Commission; compiled by the consultant

Figure 2-1 Trends of traffic accidents, vehicle fleet, and road network in Ethiopia

Table 2-1. Motor vehicle accidents in Ethiopia, 2003/04 - 2007/08

	2003/04	2004/05	2005/06	2006/07	2007/08
<b>Total accidents</b>	<b>15,346</b>	<b>17,722</b>	<b>18,911</b>	<b>17,147</b>	<b>15,086</b>
<b>Fatal</b>	<b>1,630</b>	<b>1,801</b>	<b>2,029</b>	<b>2,047</b>	<b>1,802</b>
Serious Injury	2,072	2,368	2,621	2,504	2,156
Light Injury	2,705	2,731	2,653	2,426	2,123
Property damage	10,569	10,822	11,608	10,170	9,005
<b>Death rate per ten thousand vehicles</b>	<b>145</b>	<b>132</b>	<b>137</b>	<b>123</b>	<b>95</b>
<b>Death rate per hundred thousand population</b>	<b>3.10</b>	<b>3.13</b>	<b>3.51</b>	<b>3.41</b>	<b>2.84</b>
<b>Number of deaths</b>	<b>2,111</b>	<b>2,188</b>	<b>2,522</b>	<b>2,517</b>	<b>2,161</b>
Below 18 years age	435	494	513	506	485
18-30 years age	858	791	1,139	977	689
31-50 years age	570	678	592	721	642
Above 50 years	248	225	278	313	345
<b>Number of people injured</b>	<b>8,507</b>	<b>8,885</b>	<b>9,394</b>	<b>9,553</b>	<b>7,140</b>
Below 18 years age	1,552	1,490	1,900	1,884	1,091
18-30 years age	3,703	4,429	4,352	3,847	3,025

31-50 years age	2,372	2,238	2,145	2,889	2,130
Above 50 years	880	728	997	933	894

Data Source: Federal Police Commission; compiled by the consultant

Table 2-1 shows reported accidents by police in recent years for the whole country. The traffic accident death rate per ten thousand motor vehicles is showing a decreasing trend and has reached 95 in 2007/8 from 145 in 2003/4. However, this rate is still high putting Ethiopia on the extreme high side of the international road safety scene, though the fatality risk is as low as 2.84 per 100,000 population in 2007/8.

Table 2-2 shows reported traffic accidents for each regional states and autonomous city administrations. The distributions of the reported accidents can be fairly said to be correlated with the traffic movement. However, the reported traffic accidents in Amhara Regional State (accounting nearly 14 % of all accidents and 26 % of fatalities) is quite high compared with that of the Oromia Regional State (accounting 14.5 % of all accidents and 24 % of fatalities) which has the highest area coverage and high traffic movement next to Addis Ababa in the country. Addis Ababa accounts for 54% of all accidents and 18% of all road accident fatalities.

**Table 2-2. Road accidents in regional states and autonomous city administrations, 2007/8**

Regional States/ City Administrations	Number of Road Traffic Accidents					Victims of Road Traffic Accidents			
	Fatal	Serious Injury	Slight Injury	Property Damage	Total	Fatalities	Serious Injuries	Slight Injuries	Total
Tigray	184	171	58	271	<b>684</b>	224	388	301	<b>913</b>
Afar	38	22	20	104	<b>184</b>	46	55	58	<b>159</b>
Amhara	427	372	428	848	<b>2,075</b>	564	767	1,179	<b>2,510</b>
Oromia	471	510	377	836	<b>2,194</b>	520	714	609	<b>1,843</b>
Somale	21	19	1	6	<b>47</b>	24	41	13	<b>78</b>
Benshangul-Gumuz	7	19	21	36	<b>83</b>	7	55	50	<b>112</b>
SNNP	226	298	259	226	<b>1,009</b>	335	411	267	<b>1,013</b>
Gambela	12	40	75	20	<b>147</b>	7	41	74	<b>122</b>
Harari	17	42	71	74	<b>204</b>	18	56	132	<b>206</b>
Addis Ababa	381	594	735	6,459	<b>8,169</b>	395	727	949	<b>2,071</b>
Dire Dawa	18	69	78	125	<b>290</b>	21	112	141	<b>274</b>
<b>Total</b>	<b>1,802</b>	<b>2,156</b>	<b>2,123</b>	<b>9,005</b>	<b>15,086</b>	<b>2,161</b>	<b>3,367</b>	<b>3,773</b>	<b>9,301</b>

Data Source: Federal Police Commission; compiled by the consultant

## **2.2. Characteristics of Accidents**

### **2.2.1. Causes as Identified by Police**

According to the police reports, more than 90 per cent of the traffic accidents are caused by human errors. Of these accidents, drivers are indicated as responsible causes in about 89 per cent. Table 2- 3 shows the causes of traffic accidents as identified during police investigation. Accordingly, the major causes of traffic accidents are failure to give way for pedestrians, followed by over speeding and failure to give way for other vehicles in that order. However, the major causes of fatal accidents in their order of importance are failure to give way for pedestrians, over speeding, failure to respect right hand rule. The causes of driver errors are many which include inadequate training, driving under the influence of alcohol, drug or Chaat, and others. It is important to note here that, Chaat used to be one of the critical problems in the Eastern part of the country. However, its influence is currently expanding throughout the country. The traffic accident statistics in 2007/8 also indicate that over 5 % of the fatal accidents and the total accidents occur when driving without having a driving license.

**Table 2- 3. Causes of road traffic accidents in Ethiopia as identified by police in 2007/8**

Causes of traffic accidents	Degree of Severity				Total	%age
	Fatal	Serious injury	Slight injury	Property damage		
Influence of alcohol or drug	51	7	17	193	268	2
Failure to respect right hand rule	110	129	131	856	1,226	8
Failure to give-way for vehicles	20	65	112	1,507	1,704	11
Failure to give-way for pedestrians	598	661	728	2,058	4,045	27
Following too closely	39	77	69	161	346	2
Improper overtaking	44	52	78	547	721	5
Improper turning	37	71	98	1,317	1,523	10
Over speeding	426	436	295	852	2,009	13
Failure to respect traffic signs	16	27	11	123	177	1
Driving with fatigue	30	20	20	23	93	1
Driving without attention	10	18	15	9	52	0
Improper parking/moving from parking	52	62	81	772	967	6
Excess loading	76	135	88	43	342	2
Failure in vehicle	79	73	110	171	433	3
Defective road environment	12	13	19	62	106	1
Pedestrian error	34	164	29	17	244	2
Others	81	81	162	240	564	4
Unidentified	87	65	60	54	266	2
Total	1,802	2,156	2,123	9,005	15,086	100

Data Source: Federal Police Commission; compiled by the consultant

### 2.2.2. Severity of Accidents

Table 2-4 shows the severity of traffic accidents over the last five years. Of the total traffic accidents occurring yearly, more than 11% are fatal accidents. Over 20% of the total traffic accident injuries are fatalities. The high percentage of fatalities indicates the critical lack of pre-hospital and emergency medical services.

**Table 2-4. Severity of traffic accidents in Ethiopia**

Ethiopian Fiscal Year	Severity of Accidents			Severity of Injuries		
	Fatal Accidents	Total Accidents	% Fatal Accidents	Total Fatalities	Total Injuries	Fatalities as % of injuries
2003/4	1,630	15,346	10.6	2,111	10,618	19.9
2004/5	1,801	17,722	10.2	2,188	11,073	19.8
2005/6	2,029	18,911	10.7	2,522	11,916	21.2
2006/7	2,047	17,147	11.9	2,517	12,070	20.9
2007/8	1,802	15,086	11.9	2,161	9,301	23.2

Data Source: Federal Police Commission; compiled by the consultant

### 2.2.3. Road Accident Deaths by Road User Types

Table 2-5 shows traffic accident deaths by road user types. On average, about 56 per cent of the road traffic accident fatalities are pedestrians, 36 per cent are passengers, and only 8 per cent are drivers. The figure of pedestrian fatalities rises in built-up areas. For example in the city of Addis Ababa, pedestrian fatalities are about 90 per cent of the total road accident fatalities in the city. These figures are indicators of the poor safety behaviour of road users and lack of pedestrian facilities and respect for them.

**Table 2-5. Traffic accident deaths by road user type**

Ethiopian Fiscal Year	Drivers		Passengers		Pedestrians	
	Number	Percent	Number	Percent	Number	Percent
2003/4	153	7.2	838	39.7	1,120	53.1
2004/5	149	6.8	791	36.2	1,248	57.0
2005/6	179	7.1	961	38.1	1,382	54.8
2006/7	210	8.3	926	36.8	1,381	54.9
2007/8	195	9.0	682	31.6	1284	59.4

Data Source: Federal Police Commission; compiled by the consultant

### 2.2.4. Involvement of Vehicles in Accidents

Table 2-6 shows the types of vehicles and their involvement in road traffic accidents in 2004/5. Without looking into the mileage travelled of the different types of vehicles, it appears clearly that taxis are accident prone vehicles followed by buses, both of which are public transport. Nearly half of the fatal accidents involve trucks, including Isuzu trucks, which are well known for their accident proneness by the public nationwide. Taxis and buses again are highly involved in fatal accidents.

**Table 2-6. Accident involvement of vehicles in 2004/5**

Types of vehicle	No. of inspected & registered vehicles		Fatal accident		Total accidents	Risk per 100 vehicles	% involvement
	Number	% age	Number	% age			
Car	71,672	43	362	20	6,786	9	38
Taxi	14,504	9	259	14	2,707	19	15



Bus	14,152	9	204	11	2,373	17	13
Trucks	61,710	37	859	48	5,363	9	30
Others	4,271	3	117	6	493	12	4
	166,309	100	1801	100	17,722	11	100

Data Source: Federal Police Commission; compiled by the consultant

### **3. LEGISLATIONS, INSTITUTIONAL ORGANIZATIONS, AND FUNDING**

#### **3.1. Legislations Related to Road Safety**

Ethiopia has no defined transport policy. However, the Government of Ethiopia has defined a long term strategy and developed huge investment programmes for the road network expansion and rehabilitation. Accordingly, it has been taking actions since 1997 to establish the foundations of a competitive road transport market. However, despite road traffic accident being a very critical problem to the road transport, the country has no road safety policy, strategy or programme to tackle this problem. TRL in association with Ross Silcock<sup>11</sup> underlined the absence of government policy regarding road safety which resulted in giving too low priority by road safety government agencies. The report indicated the greater attention started to be given to road safety, but pointed that the input is insufficient by any standard compared to the scale of the problem.

Some of the reasons why the country has no road safety policy are:

- The presences of other pressing economical and social issues of priority for the government;
- The economic effect is not fully appreciated by decision makers because much of it is indirect government expenditure, and more cost is borne by the society in general;
- Lack of awareness, knowledge, and experience on how road safety can be improved; and

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<sup>11</sup> TRL Limited in association with Ross Silcock Ltd. (2001). Study Report for a Sectoral Road Safety Programme in Ethiopia. Volume 1: Main Report and Appendices. Unpublished Project Report PR/INT/694/01.

- Constraints of funding.

Transport legislations and regulations used in Ethiopia are generally old for the current situations. A study on road transport regulations<sup>12</sup> identified problems related to the Road Transport Legislations among which (1) misinterpretation and misunderstandings of definitions of powers and duties of federal and regional transport organs; and (2) amendments, deletions and replacements of old legislations and regulations without systematic compilation are the most important ones to road traffic safety.

Legislations used in road transport activities in Ethiopia can be categorized in to the following groups:

- Legislations on identification, registration, and inspection of motor vehicles;
- Legislations on motor vehicle operator's (driving) license;
- Legislations on traffic control (Road Code);
- Legislations on vehicle sizes and weights; and
- Legislation on vehicle insurance against third party risks.

The present Ethiopian Traffic Control Regulations (Road Code) is based on the Transport Amendment Regulations (No. 279/1963) enacted in 1963. The regulations provide comprehensive provisions to regulate the traffic operation and safety precautions for that time, but very inadequate on all aspects of traffic requirements of today. It, for example, provides provisions on vehicle emissions, noise, drunk driving, pedestrian's priority on pedestrian crossings, pedestrian road use, and carrying passenger on trucks. However, the levels of emissions, noise, and alcohol are not defined, and implemented. Some of its inadequacy for today's road traffic

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<sup>12</sup> SPT in association with CA (2002). Study on Road Transport Regulations: Final Report, Addis Ababa, Ethiopia.

safety include lack of provisions for the use of seat belts, child restraints, wearing helmets, prohibiting the use of mobile telephone while driving.

Ethiopia's Speed Limit Regulation (No.361/1969) which is still in use was enacted in 1969. According to the regulation, the maximum speed limits are 100, 70, and 60 km/hr for private cars and motorcycles, 80, 60, and 50 km/hr for commercial vehicles, 70, 50, and 40 km/hr for motor vehicles and trucks with semi-trailers and trailers on primary, secondary, and feeder roads respectively outside urban areas. Within urban areas, the speed limits are 60, 40, and 30 km/hr for private cars and motorcycles, single unit trucks with maximum gross weight of 3,500 kg and public transport vehicles, and single unit trucks exceeding 3,500 kg and trucks with trailers respectively. The regulation also states that these speed limits shall be reduced where public safety requires for any or all vehicles on any particular roads by the road authority or local municipality. Although, the speed limits are reasonably low, the regulation is not enforced and operating vehicle speeds are much higher than what is stated in the regulation.

The Study on Road Transport Regulations<sup>13</sup> underlines that Ethiopia has never signed the various UN Road Traffic International Treaties, started with 1949 Geneva Convention and revised by the 1968 Vienna Convention. A comparison study made in this study between the Conventions on Road Traffic signed in Geneva 1968 and the Ethiopian Road Code marks important differences. The study further noted that Ethiopia being a member of COMESA (since 1994) has adhered to the COMESA Road Transport Treaty on harmonization of driving license, axle load standardization, notification plate, road user charges and third party insurance, but most of the agreed items have still to be implemented in Ethiopia, like in other countries in the region. In the past years (1991-1994) Ethiopia has also signed bilateral road transport agreements with all the neighboring nations (Eritrea, Sudan, Kenya and Djibouti). More recently, new agreements have also been signed with Djibouti and Somaliland.

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<sup>13</sup> SPT in association with CA (2002). Study on Road Transport Regulations: Final Report, Addis Ababa, Ethiopia.

After critically studying road transport regulations in Ethiopia, the Consultant<sup>14</sup> proposed the following regulations with present requirements:

- Road Transport Administration Proclamation;
- Motor Vehicle Identification, Registration, and Inspection Regulation;
- Commercial Vehicles Regulation;
- Motor Vehicle and special Mobile Equipment Operator's (Driving) License Regulation;
- Axle Load Regulations;
- The Road Traffic Control Regulations (The Road Code);
- Speed Limits Regulations;
- National Road Safety Council Legislation.

Following the recommendation of the study, a proclamation to provide the regulation of transport was enacted in August 2005 (proclamation 468/2005) which demarcated the roles and responsibilities of the federal and regional transport government agencies. The proclamation empowers the Federal Transport Authority (which used to be the Federal Road Transport Authority) to follow up the provision of safe transport services to the public and harmonize and standardize the nation's road transport system.

In line with proclamation 468/2005, proclamations on vehicle insurance against third party risks and driver's qualification certification license are also issued recently. The legal document for the establishment of a National Road Safety Council, and other transport legislations such as for Road Traffic Control (Road Code) and

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<sup>14</sup> SPT in association with CA (2002). Study on Road Transport Regulations. Ibid.

Standardization of Importing Vehicles revised in line with proclamation 468/2005, are on pipeline waiting approval.

Under the national minimum standard requirements, Regional States and Autonomous City Administrations have also provided regulations. Accordingly, the Addis Ababa City Administration has established Road Traffic Safety Council in 2003 and set penalties in 1998 which were amended in 2004. The Oromia Regional State has also made wearing seat belt mandatory.

### **3.2. Institutional Organizations**

Road safety issues in Ethiopia are, generally, addressed by different agencies in a piecemeal fashion without a legal lead agency. Legislations and regulations related to road safety are, therefore, linked to the powers and duties of the different government bodies both at the federal and regional levels. The main government bodies at the federal and regional levels concerned with road safety include Ministry of Transport and Communication, Transport Authority, Ministry of Works and Urban Development, Ethiopian Roads Authority, Road Fund, Ministry of Federal Affairs, Federal Police Commission, Regional Rural Road Authorities, Regional Transport Bureaus, Regional Police Commissions, and City Administrations. Figure 3-1 shows key stakeholders and the interim road safety management organizations.

As pointed out in Section 3.1, the legal document for establishing a National Road Safety Council is not approved; there is also no institution that takes a lead responsibility of traffic safety. Normally, road safety is perceived as the responsibility of the Transport Authority, Ethiopian Roads Authority, and the Federal Police Commission at the Federal level, and Regional or City Roads Authorities, Regional Transport bureaus, Regional Police Commissions at the regional level. The organization of road safety is complicated not only because it involves many different organizations, but also by the fact that it is given too low priority and there is a lack of coordinated effort. This is because road maintenance takes precedence for the roads authorities, driver licensing and vehicle registration and inspection for the Transport Authority and Transport Bureaus, and crime prevention and investigation for the police.

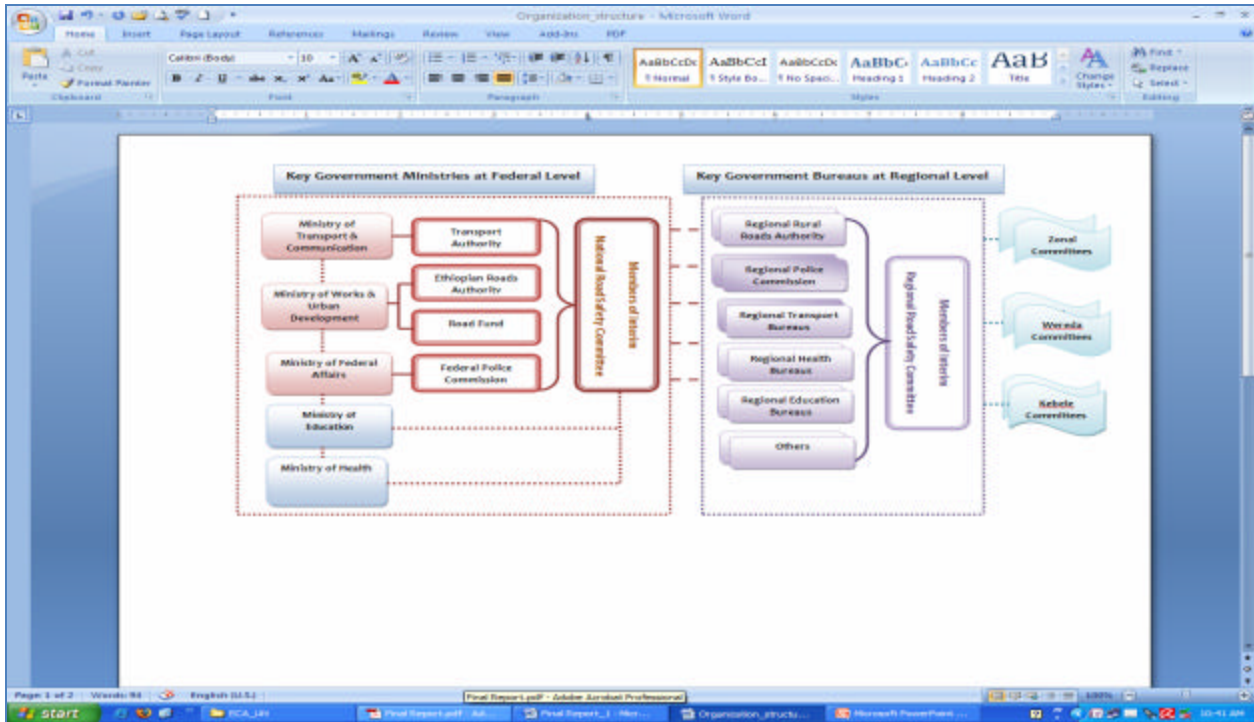


Figure 3-1. Flow chart showing key government stakeholders and the interim road safety management organizations

### 3.2.1. Key Stakeholders of Road Safety

Looking at the road traffic system components, it is logical to think that each public authority responsible for these components assumes the legal responsibilities of ensuring safety. The following sections provide the review of duties and responsibilities of the main road safety stakeholders related to safety activities. It is important to note here that Ethiopia is a federal country with regional states and consequently the government structures follows the federal system without direct hierarchy.

#### 3.2.1.1. Transport Authority

The Transport Authority (TA), accountable to the Ministry of Transport and Communications, is responsible for regulating transport services (road, rail, and water transport) in the country. According to proclamation 468/2005, TA has the power and duties to follow up the provision of safe transport services to the public.

Specifically, proclamation 468/2005 defined the responsibilities of the Federal Transport Authority, supported by transport bureaus in regional states but without direct legal relationships as:

- Determination of the operation, and capacity of vehicles using the road and issue approval certificate for registration;
- Registration and annual technical inspection of motor vehicles;
- Standardization of the importation or manufacture of motor vehicles;
- Certification of the technical competence, licensing, and grading of garages engaged in the repair and maintenance of vehicles; and
- Licensing of drivers and driving schools and instructors.

It is very clear from the list that the responsibilities that fall under TA concentrates on vehicle safety and driver training and licensing. Recently, TA has gone through business process reengineering and has reformed its organization setup giving important considerations to road safety responsibilities. Its organizational structure includes directorates which undertake responsibilities in vehicle inspection and registrations, driver training and licensing, and road traffic safety. This organization setup will enable the authority to give overall guidance to harmonize and standardize the transport system nationwide in general and the road safety activities in particular.

### ***3.2.1.2 Regional Transport Bureaus***

The organization of Regional Transport Bureaus differs from Regional State to Regional State. Some are under Trade and Industry and others are organized by their own. However, they are the main government bodies under regional states and without any authority link with the Federal Transport Authority undertaking or controlling vehicle inspection, registration and licensing, driver training and licensing, management of road transport operations, and, generally, the provision of safe transport services to the public.



They work very closely with the Federal Transport Authority. The Federal Transport Authority coordinate, harmonize, and sometimes control to make sure that the federal laws are uniformly interpreted and implemented and the country is practicing uniform and standard transport operation practices nationwide.

The Regional Transport Bureaus are also reforming their organizational setup benchmarking the Federal Transport Authority reform. Some have created road safety units. The organizational structure of the larger regional states has reached down to Wereda and Kebele levels creating the potential to strengthen the community level participation in road safety.

### **3.2.1.3. Road Authorities**

The Ethiopian Roads Authority (ERA) under the Ministry of Works and Urban Development assumes the duty of expanding and maintaining the federal road network to an acceptable standard and condition. ERA's formation proclamation does not explicitly state its road safety responsibilities. However, its vision is to "provide safe, comfortable, reliable, and adequate road infrastructure to support the socio-economic development of the nation and satisfy road users".

Regional Rural Road Authorities under respective Regional States assume the responsibilities of expanding and maintaining rural roads in the respective regions. Similarly, the establishment proclamations of the Regional Rural Road Authorities do not state explicitly the responsibility of road safety. The City Road Authorities in autonomous City Administrations have similar duties and responsibilities in their respective city administrations.

ERA has Environmental Monitoring and Safety branch under the Planning and Programming division which is within the regulatory department. The branch has no trained personnel in safety engineering. Its activity focuses in ensuring the considerations of environmental issues and traffic engineering in contract documents during road planning and design. It has also a separate section responsible for road signing and pavement marking.

The Addis Ababa City Roads Authority (AACRA) has a section with main responsibilities of traffic signals, road signs, and pavement markings. The head of the section is also a member of a committee responsible for road signing on existing roads together with members from the Addis Ababa Transport Branch Office (AATBO), and Addis Ababa City Traffic Police (AACTP). The signing and marking of new roads are provided with the design and the contractor furnishes them as part of the contract.

Generally, traffic safety is not an issue primarily considered in the establishment proclamations of roads authorities. These result in the very low commitment of ensuring safety in the planning, design, and operational management of road infrastructures in the country. Consequently, the road authorities do not have strong safety engineering units which take responsibility of undertaking road safety improvement works for safety reasons.

#### **3.2.1.4 Traffic Police**

Similar to the government bodies concerned with transport and road infrastructure, police is also organized at the federal and regional levels without any hierarchical links. At the federal level, there is a Federal Police Commission accountable to the Ministry of the Federal Affairs. At the regional level, there are Regional Police Commissions in Regional States and autonomous City Administrations.

The traffic police in Ethiopia play a twofold role in traffic safety. They primarily take the responsibility of improving safety by enforcing the traffic regulations. They secondly carry out accident investigation and reporting mainly for own use to document evidences required for court ruling, and as well as to identify priorities and plan enforcement strategies.

Enforcement, and accident investigation and reporting are done by local police station. The monthly and yearly aggregated traffic accident data is reported to the next higher police station following the hierarchy to the Regional Police Commission Office. Each Regional Police Commission sends the regional aggregate traffic accident data to the Federal Police Commission Office which forms the national aggregate traffic accident statistics.

### 3.2.1.5. *Other Institutions*

Road safety is multi-sectoral. For example, the Ministry of Health at the federal level and Health Bureaus at regional level are responsible to provide emergency medical treatments for victims of traffic accidents. One of the key issues in road safety in Ethiopia is inadequate post -accident emergency services and medical care.

Non-governmental organizations such as the Ethiopian Red Cross Society have significant roles in providing emergency transport services for injuries to reach emergency medical centres. However, emergency pre-hospital care is critically lacking.

The police in Ethiopia indicate that the major cause of traffic accidents is road users' error. This is true virtually in all countries. This indicates that safe road user behavior in children and adults is essential. This directly implies the role of the Ministry of Education at the federal level and Education Bureaus at the regional level in creating traffic safety awareness from the childhood through providing basic safety education for children at schools.

### 3.2.2. **Interim Road Safety Management System**

In 2001, a sectoral road safety study was carried out by TRL in association with Ross Silcock<sup>15</sup> with assistance from the European Commission. The key output of this study was originally proposed to be the development of a Five-Year National Road Safety Programme, which by the end of the study recognised to have a short-term Two-Year (2002-2003) action plan. The report by TRL includes Five-Year Programme, but focused on the Two-Year action plan. The recommended Two-Year road safety action plan targeted four key areas:

1. **National Management:** Establish interim working groups for developing and establishing interim Road Safety Committee (with members from the Ethiopian

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<sup>15</sup> TRL Limited in association with Ross Silcock Ltd. (2001). Op.Cit

Roads Authority (ERA), the Office of the Road Fund (RF), Federal Police Commission (FPC) and Federal Transport Authority (TA)), and establish and resource an interim Road Safety Office to serve as a focal point (secretariat of the board) for road safety activity and establish the permanent Nation Road Safety Council.

2. **Regional Initiatives:** Establish interim Regional Road Safety Committee, organize regional road safety awareness seminars, conduct regional road safety baseline surveys, and produce regional hazardous location maps.
3. **Roads Sector:** Introduce traffic safety into the Road Sector Development Programme (RSDP) and establish traffic safety engineering units in each road authorities.
4. **Demonstration projects:** Clarify and standardise the Road Fund safety allocation disbursement procedures, and promote the undertaking, monitoring and evaluation of demonstration projects. The demonstration projects were expected to serve as a means of developing experience and sharing lessons.

According to the action plan of the study, it was intended that by the end of five years' road safety investment, Ethiopia would have the capacity to develop, manage, and monitor its own road safety programmes.

Following the recommendation of the study, an interim National Road Safety Committee (NRSC) consisting of the General Directors of TA, ERA, and RF, and commissioner of FPC, was established in 2002. Under this an interim National Road Safety Coordination Office (NRSCO) was created. The responsibilities of the interim committee were to develop and approve programmes and project proposals. The NRSCO was established to serve them as a secretariat and to coordinate and promote road safety. The TA chairs the board and provides financial and administrative assistance to the NRSCO. Funding for covering expenses related to road safety activities are covered from the Road Fund.

The objectives of the NRSC are to:

- Prepare the legal document for the establishment of the permanent council;
- Promote cooperation between key road safety organizations; and
- Implement short-term road safety programmes.

NRSC and NRSCO, financed by RF, started its duties by preparing a Two-Year Action Plan. Accordingly, the establishment of regional committees was considered as a priority programme of the plan. The first activity made by the national interim body to establish the Regional Road Safety Committees was conducting a workshop in almost all regions in which all concerned government and non-government institutions, and selected individuals, participated to create awareness. The objectives of the Regional Road Safety Committees are to plan and promote road safety awareness and to coordinate the collaborative efforts of the concerned governmental and non-governmental organizations in their respective regions.

Currently, all regional states and autonomous city administrations (Addis Ababa and Drie Dawa) of the country have formed interim Regional Road Safety Committees (RRSC) with members normally from the respective regional transport, health, and education offices, the police commission, and the rural roads authority. Regional Transport Bureaus act as their respective Regional Road Safety Coordinating Offices (RRSCO). Regional Committees have been trained how to write, implement, and evaluate road safety projects. Some of the regions have formed zonal Road Safety Committees in others the structure has gone down up to the lower administration units (Wereda and Kebele levels). Implementation of road safety activities differ from region to region.

In the Addis Ababa City Administration, Road Traffic Safety Council is established by Proclamation No. 7/2003 with members from the City Administration and representatives from relevant associations. The council is accountable to the city Cabinet. The General Manager of the City Transport Authority (now a branch of the TA) is in charge of the Council's secretariat. This is lead by a coordinator assigned by the council upon recommendation by the General Manager of the City Transport Branch.

After the establishment of NRSC and NRSCO, road safety works have been coordinated centrally better than before, with the help of funding from the Road Fund. Experiences from some of the regions (Afar, Tigray, and Amhara) and the city of Addis Ababa indicate that road safety is being promoted effectively by the transport offices and traffic police with the emphasis being made on awareness creating. However, the interim Regional Road Safety Committees are not strong enough to shoulder responsibilities sustainably. The Addis Ababa City Road Safety Council is not also strong to undertake its comprehensive road safety functions due to reshuffling of members.

In the interim road safety management system, the road safety fund obtained from the Road Fund is managed and transferred to the federal and regional road safety stakeholders by the interim committee and NRSCO. Normally, requests of road safety yearly budget are forwarded to NRSCO. Then NRSCO aggregates the annual national budget and forwards the request to the Road Fund Board after getting the approval from the interim Road Safety Committee. The fund is then distributed to the regions from NRSCO as per the request made with the respective road safety action plans. When the fund is short of the requested budget, NRSCO uses previous performance and the planned road safety works as criteria to allocate the budget.

When the legal document for the establishment of a National Road Safety Council is approved the interim road safety management organs is expected to be substituted by legal institutions at all levels. Responsibilities and functions of the interim road safety committees at federal and regional levels (down to Kebele) are expected to be undertaken with full commitment and dedications by the legal institutions.

### **3.3. Funding**

The Road Fund was established in 1997 by Proclamation 66/1997 under the Ministry of Works and Urban Development with the objective of providing finance for maintenance of roads and road safety measures. The sources of the fund include:

- Budget allocated by the Government,

- A road maintenance fuel levy,
- Annual vehicle license renewal fee based on axle load,
- Overloading fines,
- Transit fee, and
- Any other road tariff's as may be necessary.

In practice, however, the value added tax on fuel is collected by the Ethiopian Petroleum Enterprise (EPE) and remitted directly to the Road Fund as part of the budget allocated by the Government. The value added tax on fuel accounts for the overwhelming majority of total funds available to the Road Fund. The only other funding source used to date comprises of transit fee of US \$15 per vehicle paid by foreign vehicles entering Ethiopia, but this has not yet accounted for even 1 per cent of Fund revenues.

The Road Fund Board generally allocates about 3 % of its collections for road safety work annually. But its actual allocation is based on budget requests from the interim National Road Safety Committee. As described in Section 3.2.2, the allocations are then distributed to federal and regional government offices through the interim National Road Safety Committee and the Regional Road Safety Committees.

Figure 3-1 shows the yearly budget allocation for road safety activities from the Road Fund and its disbursement. The funding is used for road safety projects proposed by governmental institutions through regional and federal interim road safety committees. As clearly shown in Figure 3-1, funding for road safety activities in Ethiopia has not been a critical problem at least for the past years. The key constraints to carry out road safety work in the country remains to be political commitment, strong institutional organization, and lack of road safety experience and technical skills.

**Table 3-1. National road safety budget allocation and disbursement<sup>16</sup>**

Year	Allocation (ETB)	Disbursement (ETB)	Utilization (%)
2002/3	9,000,000	Not disbursed	0.0
2003/4	10,448,500	6,268,900	60.0
2004/5	10,500,000	4,632,160	44.1
2005/6	10,500,000	7,073,160	67.4
2006/7	8,600,000	2,535,800	29.5
2007/8	12,261,310	12,261,310	100.0
2008/9	10,000,000	Not disbursed	0.0

#### **4. ASSESMENT OF ROAD SAFETY WORKS IN ETHIOPIA**

After the establishment of the interim NRSC and NRSCO, the following road safety issues were identified in the preparation of the two years action plan:

- Driver's capacity and behavior;
- Failure to give the right of way for pedestrians;
- Over-speeding;
- Transporting passengers with freight vehicles;
- Excess loading;
- Violating traffic regulations;
- Unsafe behavior of pedestrians;
- Animals and carts using the road;
- Inadequate capacity to control roadworthiness of vehicles;

<sup>16</sup> Faruk Ali (May 29, 2009), Finance Officer, Office of the Road Fund.



- Inadequate enforcement of traffic regulations;
- Inadequate safety consideration of road planning, and construction; and
- Inadequate emergency medical services.

With respect to the identified causes of road traffic accidents, the following tasks were listed in their two-year action plan:

1. *National management*: Establishment of a technical committee, preparation and approval of the legislation to form the permanent National Road safety Council, and formation and making the council operational.
2. *Demonstration projects* Develop the accident reporting and database system, accident data analysis system, train police, and provide software and computers. Accident data application on enforcement, safety road improvements by roads authorities, and produce annual accident reports.
3. *Traffic law enforcement*: Identify training needs, develop traffic police training programmes, train trainers, train, evaluate and revise training programme. Targeted enforcement: needs identification, develop plan, conduct targeted enforcement operations, and make annual review. Equipment and patrol vehicles: identify need, procure and introduce in pilot, evaluate, and expand.
4. *Driver Training and Testing*: Revise testing procedure; revise training procedures for examiners and instructors, upgrading TA training centre facility.
5. *Vehicle Inspection*: Revise vehicle inspection procedures, introduce roadside vehicle inspection, procure vehicle inspection equipment, and improve inspection buildings and sites.
6. *Traffic safety education for children*: Introduce traffic safety education at schools, strengthening traffic clubs, campaigning on how to walk on busy routes to schools, create safety awareness by producing road safety drama.

7. *Road safety publicity* Conduct research on pedestrian safety awareness, identify target groups, and design and conduct campaigns. Create safety awareness in transport company workers, and conduct mass media campaign, community road safety campaign.
8. *Emergency medical service*: Introduce trauma management, develop proposals and obtain funding to improve communication and ambulance services, research and advocacy, introduce computerised system of road accident patient recoding, train and introduce first aid treatment to police, drivers, and transport operators. Introduce victim support.
9. *Research*: Identify research needs, conduct research in pedestrian safety, drunk driving and blood alcohol content, and accident costs.
10. *Motor insurance*: Introduce mandatory third party insurance, and claims guidelines.
11. *Regional initiatives*: Regional road safety baseline study, regional accident maps, safety awareness seminars, establishment of regional safety committee, regional safety plans, and coordination.
12. *Road safety engineering*: Introduce road safety in the RSDP, establishment of road safety engineering units, train safety engineers, identification of black-spots and counter measures, and road safety improvements. Introduce road safety auditing and pedestrian management.

Information obtained from various stakeholders during this study indicates that the activities of the interim NRSC and NRSCO, have been focusing on some of the issues due to various reasons. The following sections present detail assessments made with respect to the road safety works in Ethiopia.

## **4.1. Road Traffic Accident Reporting**

As in most countries in the world, police is responsible for traffic accident investigation and reporting in Ethiopia. According to the Ethiopian transport regulation (Negarit Gazeta, 1963, which is still in use with amendments), a driver of a vehicle involved in a road accident shall notify the nearest police station immediately if the accident involves personal injury and within twenty-four hours if it involves property damage only. According to the regulation all accidents are reportable. In practice, however, the police are notified only when the accident involves serious injury, agreement cannot be reached between parties involved or if police accident report is required for insurance. Because of this, the reporting of nonfatal accidents is uncertain. Thus, the under-reporting of road accidents in Ethiopia is expected to be quite considerable.

Normally, in response to notification of an accident, a traffic police investigator attends the scene of the accident. Based on the information obtained from observations, the parties involved in the accident, and other evidences, police prepares a factual report and makes the sketch of the site on a plain sheet of paper. The police, who are inadequately equipped and trained, understandably, primarily see their role to take action if the law has been broken and give much attention to get evidence for prosecution rather than to investigate the many factors involved in the accident.

On return from the accident site, an account of the accident is recorded in a daily report book at a local police station. The accident recordings in the daily recording book form the basis of the Ethiopian road accident statistics. Periodic summaries of aggregate road accident records are made and sent to the immediate higher police department. They finally reach the Federal Police where the national road accident statistics are compiled.

The content of the road accident reporting, as it exists now, misses relevant details of an accident report required for any road safety improvement works. The reporting form, in the daily report book, is not designed to include details of each vehicle and road user involved in an accident. The report, further, does not contain

details of the road section and precise location of an accident. The location of an accident is reported broadly by *Kebele and Wereda*<sup>17</sup> or the name of the surroundings. Besides, because a plain paper is used on the spot, the investigating policeman is unlikely to remember the required accident details and as a result the form available at the local traffic police office is never completely filled.

The information recorded could generally be adequate for the police work, but it is of limited use to other bodies requiring information for identifying the causes and appropriate remedial measures. It is primarily inadequate in determining the location of accidents and the factors involved. Moreover, accident reporting lacks a significant level of consistency. Terminology of accident details does not have a uniform definition even among the staff members at a police station. There also exists a significant variation in accident reporting in different regional states.

In addition to the indicated limitations of accident reporting, there is no established system of computerized accident data bank to store detailed information on individual road traffic accidents occurring in the country. This is another handicap for the efficient management of the reported traffic accident data. Moreover, there is no system of periodic road traffic accident analysis and dissemination system to give information on road traffic accident trends, specific accident problems so that stakeholders are aware and aim to improve the situation.

NRSCO has prepared a traffic accident reporting standard format which contains necessary information for all users. The development of accident coding computer software to store and manage accident database is also completed. However, the software has no facility for accident mapping. The training of traffic police on the use of this accident reporting format has also been given. The use of on the spot standard reporting format and the accident software were also introduced as a pilot level in the city of Dire Dawa in 2005. However, the implementation has not gone far due to weak organizational structure of the police.

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<sup>17</sup> *Kebele* is the lowest local administration unit in Ethiopia and *Wereda* is the one above.

The accident statistics, although not complete and with all sorts of limitations, can, however, be used by interested stakeholders to make a broad accident analysis for various purposes. Moreover, the existing data can be used to create awareness and define policy and mobilize human and financial resources towards alleviating the problem.

## **4.2. Traffic Law Enforcement**

After the establishment of the interim NRSC, successive seminars and workshops have been conducted to train Traffic Police trainers from all regions. Trainers have also trained their colleagues in their respective regions on traffic law enforcements and accident investigation and reporting. Efforts were also made to improve the capacity of the traffic police to enforce traffic laws with the provision of vehicles, motor cycles, and introduction of radar speed measuring devices procured through the road safety funding. Training on radar speed measurement has been given to traffic police. The police college has also revised and strengthened road safety courses in its traffic law enforcement courses.

Traffic law enforcement focusing on sections where traffic accidents are high and on vehicles that are said to be highly involved in traffic accidents has been introduced. As part of the demonstration projects, targeted traffic control at accident locations and on main accident causes was conducted in Oromia Regional State and Addis Ababa in 2006. The project had encouraging results. Based on the results gained, Oromia has conducted workshops to implement targeted traffic control on injury accident causes throughout the region. However, its implementation is not effectively pursued.

Over speeding has been controlled as a pilot level on the Addis Ababa-Awasa road using radar guns. The result has indicated that it is very effective to enforce

speed limits. According to the NRSCO Report<sup>18</sup>, the NRSC is taking the necessary steps to acquire more radar equipment for distributing to priority zones.

Traffic law enforcement on pedestrian priority and pedestrian road use has been more focused in recent years with the assistance of student traffic policing in several Regional States and Addis Ababa. In addition to the publicity made with the use of mass media, special campaigns targeting rural communities have been conducted by the police with the support from RRSCO with very good results in Amhara Regional State. Such campaigns to create the safety awareness of the rural community are now expanding almost covering nationwide. The campaign is made at market places, ceremonial occasions, community gatherings, and worship places. As a result of this safety campaign, pedestrians from rural communities are now safely using the road more than the pedestrians in urban areas.

The traffic police in Ethiopia is, generally, making a good contribution towards creating safety awareness and traffic law enforcement. However, there is a general lack of adequate training, professional discipline, and capacity, coupled with improper organizational structure. The available and implementable traffic regulations such as speed limits, pedestrian priority on crossings, and driver lane discipline are not fully enforced. Although pilot projects show encouraging results to control over speeding using radar gun, its implementation is not sustainable.

In most Regional States, Traffic Police is organized under Crime Prevention and Investigation. This organizational structure does not give the required level of focus and capacity in terms of traffic law enforcement and traffic accident investigation and reporting.

The inadequacy of the organizational structure of the traffic police is currently recognized and under discussion at federal and regional levels. Some Regional States have already started reorganizing Traffic Police under their respective Transport Bureaus. Tigray Regional State has approved a regulation of reorganizing

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<sup>18</sup> National Road Safety Coordinating Office, February 2008; Overview of the Road Safety in Ethiopia.

the traffic police under Transport Bureau and is preparing for implementation. SNNP Regional State has organized traffic police under Transport Bureau in some administration zones as pilot implementation phase. Other alternative forms of organizations such as organizing traffic police under a board by giving more autonomy are being discussed. With current recognition of the bottleneck problems with respect to traffic law enforcement and traffic accident investigation and reporting, there is a high expectation that the problems will be effectively addressed when the legal document to establish the National Road Safety Council is approved and it is established.

### **4.3. Vehicle Inspection**

In Ethiopia, there is a mandatory annual vehicle technical inspection nationwide. Imported vehicles and vehicles which undergo body changes have to also pass through mandatory technical inspections before they are licensed to operate on the road. Transport Bureaus of regional states, undertake annual technical inspection for vehicles whose plate number have the respective regional codes. The Federal Transport Authority undertakes technical inspections for imported vehicles and body changes as well as annual inspections for vehicles their plate numbers cannot have regional codes (such as Eth. UN, AU, etc.) because of their type of service. However, as indicated by the results of the survey<sup>19</sup> made in 2002, the technical inspection of vehicles was not harmonized nationally. The standard of the technical inspection was not also satisfactory with respect to the requirements of road traffic safety.

The Federal Transport Authority has revised and strengthened the procedure of the technical inspection and made all the regions to comply with the new procedure. The new procedure has enabled the transport agencies to contract out the annual technical vehicle inspection and strengthening and focusing on the controlling functions. The new procedure has been implemented since 2005. Accordingly, about 90% of the annual vehicle inspections nationwide have been outsourced to

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<sup>19</sup> National Road Safety Coordinating Office, Federal Transport Authority; (February 2008): Over view of Road Safety Activities in Ethiopia; Addis Ababa.

private organizations. Transport agencies make sudden inspections of private organizations undertaking annual inspections with detail evaluation of sample inspected vehicles. They also receive monthly detailed reports from these organizations.

Special directives have also been introduced for public transport owners, associations, operators, and drivers to check the safety of buses at bus terminals and on the road. Every association is supposed to establish a road safety unit. Along with this, spot-checking on the road and at bus stations has been practiced in most of the regions and by the Federal Authority.

Following the recent reform (2008) of the Federal Transport Authority, the annual technical vehicle inspection and registration of imported vehicles and body changes has been taken as one of the focus areas and is organized under one directorate. In the reform, weak points were identified and strengthened for the second time. A new procedure is set by which contacts between the vehicle owner and the inspecting technician are avoided to avoid corruption. The owner has to hand-over his vehicle's key and the necessary documents to the inspecting office. The inspector collects the key with a vehicle code and inspects the vehicle and provides a report on his findings. If the owner of the vehicle is not convinced by the findings and applies for re-inspection, the vehicle can be inspected again by a team of three technicians.

The business process reengineering has also reduced the steps to be followed for the annual vehicle inspection so that time is saved for both the vehicle owner and the service giver. The implementation of this new procedure has started at the federal level on imported vehicles. The implementation of the procedure nationwide in 2009/10 is now under preparation to employ new private organizations which have a technical capacity to undertake technical annual vehicle inspections with the help of inspecting machines (such as brake tester, light tester, and exhaust tester).

Standard formats of annual vehicle inspection specific to public transport, dry freight transport, wet freight transport, and light vehicles are improved to suit inspection by observation and using machines, and these have been introduced in



all regions. The following are lists of the main vehicle inspection items related to safety requirements:

- Machine based inspections: lights; wind screen wiper and washer; content of vehicle exhaust (Co and HC); brakes and conditions of clutch, brake and fuel pedals; and
- Inspections by observation: external and internal body condition; condition of tyre and spare tyre with jacks; first aid kit; fire extinguisher; exhaust gas and silencer condition; reflector; and conditions of suspension system.

#### **4.4. Driver's Training, Testing, and Licensing**

The survey made<sup>20</sup> by the Federal Transport Authority (the then Road Transport Authority) in 2002 indicated that drivers' training, testing, and licensing was not harmonized and standardized nationally adhering to the then existing federal standards and procedures. Previous other studies have also identified that the national drivers' training standard is weak and the screening and licensing system is also open to fraud. As a result drivers are generally lacking the required skills and safety awareness.

Following the 2005 transport regulation, the drivers training and testing procedures have been reviewed and revised and the Federal Transport Authority has prepared and distributed the necessary training manuals, books, and video films. In order to standardize the quality of driver licensing, the Federal Transport Authority has evaluated facilities and capacities of all transport agencies issuing drivers' licenses and determined the license grades they can issue in accordance with their capacity. Lessons on defensive driving are given for professional drivers. In Addis Ababa, the theoretical test has also been computerized.

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<sup>20</sup> National Road Safety Coordinating Office, Federal Transport Authority; (February 2008): Over view of Road Safety Activities in Ethiopia; Addis Ababa.

In recognition of the traffic accident occurrence due to the deficiency of driver licensing and to create a uniform, standard and effective system of driver licensing free from corruption and bureaucracy nationwide, a new proclamation (proclamation No. 600/2008) revised in line with transport regulation 468/2005 and improves these shortcomings is enacted. The new proclamation has given the Federal Transport Authority the powers and duties to:

- Set detail standards,
- Supervise and issue recognition certificate to the licensing body,
- Prepare curriculum jointly with the appropriate technical and vocational training agency for driver training institutions,
- Determine the quality, content, and form of driver's qualification certification license book free from forgery, and
- Supervise the implementation of the provisions of the proclamation.

The new proclamation categorizes driving licenses into the following seven groups requiring passing through special theoretical and practical training and testing for each category as well as for the holder of lower qualification to change into higher within the same category:

1. Motor cycle driver with two or three wheels;
2. Automobile driver with up to 12 set capacity and light trailer;
3. Taxi drivers:
  - Category T1: motor cycle taxi with three wheels; and
  - Category T2: motor vehicle taxi with a capacity of up to 12 seats.

#### 4. Public transport vehicle drivers:

- Category P1: motor vehicle with a capacity of up to 24 seats; and
- Category P2: motor vehicle with a capacity above 24 seats.

#### 5. Truck drivers:

- Category D1: truck up to 7,000 kgs gross weight;
- Category D2: truck up to 28,000 kgs gross weight with light trailer; and
- Category D3: truck above 28,000 kgs gross weight with trailer.

#### 6. Tanker drivers:

- Category F1: tanker with loading capacity of 18,000 liters; and
- Category F2: tanker with trailer or semi-trailer loading capacity above 18,000 liters.

#### 7. Special equipment drivers:

- Category S1: special mobile equipment with weight up to 5,000 kgs;
- Category S2: special mobile equipment with weight up to 10,000 kgs; and
- Category S3: any special mobile equipment.

Accordingly, the preparation for the implementation of the provisions is currently underway. The Federal Transport Authority has prepared standards for licensing bodies and driver training institutions. Theoretical and practical training curriculum and examinations for each driving license category are prepared with the help of Ministry of Education. The quality, content, and security code of driving license certificate are set.

The theoretical examination is computerized and automated so that candidates answer examination questions on a computer and know their results instantly. Practical examinations are also made without contact between candidates and the examiners. A prospect driver is made to drive by her/his own throughout her/his practical examination after an examiner gives a go sign at the start. The manoeuvre of the examinee throughout the practical examination is evaluated by examiners with the help of a video camera. The system has made very easy to trace any complaints on theoretical and practical examination in a database on a server and a video recorder. The Federal Transport Authority has already tested the system. The transport agencies in regional states of Amhara, Oromia, SNNP, and Tigray and autonomous city administrations of Addis Ababa and Dire Dawa have started the implementation of the new system.

#### **4.5. Safety Education and Publicity**

Since the establishment of the interim committees at the federal and regional levels, safety education and publicity activities nationwide have been encouraging. Road safety has been included in the national basic education up to 8 grade syllabuses by integrating with other subjects since 2005. According to NRSCO report<sup>21</sup>, supporting reference materials, books and video films have been produced to assist the efforts taken to improve road safety education at schools. The Education Bureau of Addis Ababa city administration has prepared reference books usable at kindergarten and up to grade 8. Curriculum guideline for promoting road safety

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<sup>21</sup> National Road Safety Coordinating Office, Federal Transport Authority; (February 2008): Over view of Road Safety Activities in Ethiopia; Addis Ababa.

education at schools has also been issued by the Ministry of Education in 2004 to all the Regional Education Bureaus to follow.

Consequently, traffic safety clubs and student traffic policing have been contributing in improving safety awareness of students and assisting traffic police in traffic management on busy roads. Traffic road safety clubs at schools, about 1,500 in 2008, are promoting awareness through drama, competition and mini-media. Student traffic police are also participating in community road safety awareness programme.

The mass media organizations are making good progress in broadcasting road safety programme and campaigns. Road safety publicity is made regularly on the national and Addis Ababa TV since 2003 and 2004 respectively. Radios with national and local coverage are broadcasting road safety programme and campaigns including online interactive discussions with telephone public participations. According to NRSCO's report, the airtime allocated for road safety programme and campaigns by national and local TV and radios is estimated to be about 530 minutes a week. Newspapers also give coverage on road safety issues.

Safety awareness creations are also made by Traffic Police, Federal Transport Authority, and regional transport agencies at various occasions including special public gatherings and "Road Safety" weeks. Local traffic police conduct community campaigns in most of the regions. NRSCO and the Federal Transport Authority issue magazines and bulletins containing hot road safety issues. Transport associations also address road safety in their publications.

However, road safety publicity using mass media could be more effective if coordinated and organized by a lead agency to focus on identified groups of road users.

#### **4.6. Emergency and Pre-hospital Care**

Pre-hospital emergency medical system is practically non-existent in Ethiopia. A comprehensive emergency medical system includes not only a health facility based

care for emergency cases but also a functional pre-hospital care that gives primary care for injuries at the accident scene and while transferring victims to health facilities. Road traffic accident injuries are normally transported to the nearest health centre for emergency medical care without any health professional care at the scene of the accident or during transporting.

Transportation of the accident victims are made by the vehicle involved in the accident (if the vehicle is operational), volunteer driver or ambulance (such as Red Cross Ambulance) if there is any around the accident scene. There is little or no medical care during transportation even when using ambulances for various reasons including lack of medical professionals. The emergency medical care at health facilities is not also well organized. Consequently, the death rate is very high; about 20% of the total injury is fatalities.

A one year (July 2005-June 2006) retrospective descriptive audit of injuries<sup>22</sup> in public health facilities of Addis Ababa showed that motor vehicle accident is the second overall cause of injuries (first in the age group 15-44 years) and accounts for 34% of all injuries, leading causes of injury related admissions (61%), and 52% of injury related deaths. In another study cited in the strategy document, from the trauma patients in Tikur Anbessa Hospital, Addis Ababa, road traffic injuries accounted for 41% of all cases, and of them 93% were pedestrians.

Setting up emergency medical and pre-hospital care system needs clear national strategy and Government commitment. With respect to this, a Task Force for preparing a long-term national strategy and action plan on Violence and Injury Prevention (VIP) and Emergency Medical Services (EMS) was established under the coordination of the Ministry of Health in which road traffic accident is an important component. NRSCO is a member of this task force. The Task Force has prepared the draft national strategy and action plan for approval, but because the Ministry of Health has been undertaking business process re-engineering (BPR) study the approval of the strategy is delayed.

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<sup>22</sup> Ministry of Health of Ethiopia: National Multi-sectoral three-year Strategic Plan for Violence and Injury Prevention and Emergency Medical Services Strategy 2008/9-2010/11

The implementation of the reform of the Ministry of Health is now underway and Emergency Medical Service is taken as one of the focus areas in hospital organization. Accordingly, the Emergency Medical Care at hospitals will be organized with different specialized medical professionals and adequate facilities (equipment and pharmacy) in such a way that the injuries are prioritized and get immediate medical treatment. According to the current practice, accident injuries have to undergo registration before they get any medical treatment and may have to go out from the hospital for examination or pharmacy. The new reform of the Ministry of Health<sup>23</sup> has addressed these shortcomings.

Following the reform of the Ministry of Health, the gap that exists in pre-hospital care is identified as a critical problem and various discussions are being made to fill the gap. In the City of Addis Ababa, a legal document to reorganize Fire and Emergency Service is awaiting the approval of the cabinet. The approval of the legal document would mean to reorganize and reinstate the emergency dispatch centre of the city which was organized for the celebration of the Ethiopian Millennium with three-digit telephone service and ambulance to sustainable and coordinated scale to undertake the pre-hospital care and emergency medical service of the city.

The Federal Ministry of Health is responsible for setting national standards, providing guidelines, and giving assistance, and building capacity of Regional Health Bureaus. However, currently the ministry does not have standards or guidelines with respect to pre-hospital care and emergency service in the country. According to the information obtained, the model lesson that the Ministry will get from the implementation of the Addis Ababa pre-hospital care and emergency medical service will help it to expand the system to the Regional Health Bureaus.

During this case study, a newly established private ambulance service, known as Tebita Ambulance Services has started providing pre-hospital care and ambulance service to all accident injuries. It is also providing training on pre-hospital care for

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<sup>23</sup> Dr. Abrham Endeshaw, Assistant Director, Medical Service Directorate, Ministry of Health (May 21, 2009)

traffic police. "First Aid Training" has also been incorporated in the revised professional drivers training.

The third party mandatory vehicle insurance law which is enacted in January 2008 will help to materialize the emergency medical service in such a way that injured people get emergency medical care in advance of any payment which will be covered under the Insurance Fund (details are described in Section 4.8).

#### **4.7. Road Safety in Road Infrastructures**

The road agencies in Ethiopia, the Ethiopian Roads Authority, Regional Rural Road Authorities, and City Roads Authorities, generally considers safety in road design, construction, and maintenance works as their routine task of making allowance for designing road elements, posting road signs and pavement markings. The Two-Year Action Plan with respect to introducing road safety in the road sector has not been realized. Road safety improvements works based on detailed accident black spot studies are generally very limited.

The road infrastructure generally lacks due consideration of safety. One can observe easily unsafe sections of the road network due to lack of appropriate safety considerations during design, construction, and/or maintenance. Consequently the contribution of unsafe road environment in causing road traffic accidents or worsening the severity of traffic accidents is significant. A research conducted in Ethiopia<sup>24</sup> on the effects of road and traffic factors on road safety has underlined the significant contribution of unsafe road infrastructure.

Safety audit of the existing and new roads is very essential. This will help to consider safety during the design stage for new roads and provide safety features such as barriers, traffic signs and markings, pedestrian facilities, self-enforcing speed controlling devices and others wherever demanded on existing roads. A draft road safety audit has been prepared by ERA, but this has not been finalized and

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<sup>24</sup> Berhanu, G. (2000). Effects of Road and Traffic Factors on Road Safety in Ethiopia, Dr.Ing. Dissertation, Norwegian University of Science and Technology, Trondheim.



implemented. Safety improvement works for existing roads can also be made with detailed black spot studies. This however, requires improving the traffic accident reporting and data management system.

NRSCO has undertaken accident black spot studies on Addis Ababa-Dilla and Shashemene-Arbaminch Roads, and roads in Addis Ababa<sup>25</sup> as part of the demonstration projects. The results of the study were used for pilot study of enforcement using Radar speed controlling device. The study was not, however, made with the involvement of the road agencies and black spots identified were not detailed due to the nature of the available accident data, and therefore the results were not utilized for improving the road for safety.

Recently, for the first time ERA has employed consultants for the design and construction supervision of periodic maintenances of Addis Ababa-Nazareth and Modjo-Awassa Roads which includes accident black spot study and improvement works. The accident black spot studies in these projects would be good examples to demonstrate the importance of road traffic accident reporting and computerized database with detail information on exact locations of each accident.

Road transport in urban areas, particularly in the main cities is characterized by high traffic congestion and accidents due to mainly inadequate traffic management and unsafe road network infrastructure facilities with poor planning control and hierarchical system. As a result of inadequacy in controlling urban master plans, major developments are made linearly adjacent to the arterial road network without any form of access control and considerations of pedestrian and parking facilities. The capacity of the existing road infrastructure is not optimally availed due to improper use, misuse, and abuse. Although a huge investment is being made on expanding and upgrading the road infrastructure, poor traffic management coupled with inadequacies in controlling the master plan and the existing road network has made Addis Ababa a city with increasing traffic congestion and accidents.

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<sup>25</sup> National Road Safety Coordinating Office: Traffic Accident Black Spot Study on Addis Ababa-Dilla and Shashemene-Arbaminch Roads; September 2005 (Amharic).

There are three key government agencies which take responsibilities of road safety in the city: the Addis Ababa Transport Branch Office (AATBO) under the Federal Transport Authority which undertakes the responsibilities of the authority in the city; the Addis Ababa City Roads Authority (AACRA) and the Addis Ababa Police Commission under the Addis Ababa City Administration. The institutional organization in Addis Ababa is representative of most of the main cities with minor differences in Ethiopia.

AACRA is responsible for expanding and maintaining the road infrastructure. The city has no traffic engineering unit neither under AATBO nor AACRA and coordination between the two is generally poor as they are accountable to different bodies. Under the Addis Ababa Police Commission, there are Police Offices under the Sub-city Administrations and one central traffic police office, Addis Ababa City Traffic Police Office (AACTPO). Each Police Office under the respective sub-cities has traffic police officers responsible for traffic management and enforcement. AACTPO undertakes traffic accident investigations and accident recording as well as patrolling of the whole city. Traffic police, generally, critically lacks capacity to enforce traffic in the city.

One of the main problems with respect to safety of road infrastructures in Ethiopia is that main roads pass through built-up areas with little or without any safety considerations. According to ERA design standard, the typical urban cross-section is four lanes (the outer lanes for parking). Commonly, this is provided without any physical means of delineating parking lanes and sidewalks from the travelled ways. Such wide cross-section without any types of self-enforcing physical means of reducing speed encourages the through traffic to pass urban areas with a speed higher than the speed limits. This unsafe road environment creates conflicts between the through and local traffic which coupled with unsafe attitude and behavior of road users creates the worst traffic safety situation in built-up areas.

The safety awareness of the rural community in Ethiopia is generally increasing through the safety awareness creation campaigns. ERA undertakes overloading control on freight transport vehicles through weighbridge stations nationwide. The Federal Transport Authority and Regional Transport Bureaus controls excess loading

on public transports. Traffic police also foresees excess loading on public transports. This, however, requires close coordination to be more effective.

#### **4.8. Insurance System against Third Party Risks**

Acknowledging the social problem created due to the loss of lives, injuries, and property damages caused by road traffic accident and to establish a system for facilitating the provision of emergency medical treatments, the proclamation against third party risks (Proclamation No. 559/2008) has been approved in January 2008. The proclamation prohibits driving a vehicle without a third party insurance coverage, however, the Ministry of Transport and Communication is given the mandate to determine vehicles to operate on the road without requiring compulsory insurance coverage.

The proclamation limits the amount of third party compensation not to exceed:

- ETB 40,000 in the case of death;
- ETB 15,000 in the case of injury as determined by a medical board; and
- ETB 100,000 in the case of damages of property.

However, it indicated the right for any person to claim from the ensured person above the limits in accordance with other relevant laws.

The proclamation has also provided the provision for the establishment of an Insurance Fund under a Board accountable to the Ministry of Transport and Communication as a permanent financial source to provide for emergency medical treatment to any traffic accident injuries and compensation to a third party victim of an accident inflicted by uninsured or unidentified vehicle. The financial source of the Insurance Fund is the insurance tariffs the rate of which is determined by the Government on the basis of studies conducted by the Board.

According to this proclamation, any injured person by a road traffic accident is entitled to emergency medical treatment costing up to ETB 1,000 whether he/she is

a third party or not as defined by the proclamation. Any medical institution shall have the duty to provide the emergency medical treatment to a victim and claim its fee directly from the insurer or the Insurance Fund.

However, the proclamation is not fully implemented and the Insurance Fund is not yet established.

#### **4.9. Participation of the Private Sector in Road Safety**

The participation of the private sector in road safety in Ethiopia is very encouraging. However, their efforts have not been coordinated centrally to focus on certain targeted road traffic safety problems. According to the NRSCO<sup>26</sup>, the British Council has assisted the road safety programme by conducting "Project Cycle Management" courses for over 40 participants from all the regional states and related federal offices. International Road Safety Academy has also assisted by offering Radar Operators Course for over 40 participants.

The intensive efforts being made by the mass media in promoting road safety has been financed by private sectors. Shell Ethiopia and Ethiopian Insurance Agency have been promoting public road safety awareness programmes nationally through the Ethiopian Television for the last three years.

The Ethiopian Insurance Association has contributed in organizing road safety workshop and sponsoring, with other several private firms, the road safety week successfully celebrated throughout the Nation in June of 2006. The transport associations and organizations have participated in promoting road safety by conducting awareness programmes for their drivers and workers as well as by assisting road safety day celebrations in the regional states. The Ethiopian Red Cross Society has contributed towards this effort by training professional drivers in first aid service. Many more have assisted in road safety improvement efforts.

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<sup>26</sup> National Road Safety Coordinating Office, Federal Transport Authority; (February 2008): Over view of Road Safety Activities in Ethiopia; Addis Ababa.

#### **4.10. Research and Training**

Safety interventions are identified through scientific research and development. Very little is known in Ethiopia about the knowledge, attitude and behavior of road users, and traffic characteristics, apart from the police reports and observations. There is a need of detailed and sustainable research works in the area of road traffic safety which addresses critical problems in the country.

Although the interim Committee and NRSCO has planned to Identify research needs, conduct research in pedestrian safety, drunk driving and blood alcohol content, and accident costs in the Two-Year Action Plan, the efforts made by the interim body with respect this to has never been successful. Research activities in road safety have been limited to the research works made by academic staff members and thesis researches of higher educational institutions.

Short and long term trainings are critically important in improving road safety capacity in the key organizations so that they will be in a position to implement road safety programmes. However, this was not successful in the implementation of the Two-Year Action Plan. The Department of Civil Engineering, AAU, has started an M.Sc. Programme in Road and Transport Engineering in which one of the courses is on road safety. The capacity at the Department has the potential to be utilized with respect to carrying out research projects and building capacity through short term trainings.

## **5. NATIONAL ROAD SAFETY TARGETS AND INDICATORS**

Road safety targets represent the desired road safety results which a country or jurisdiction wishes to achieve over a given timeframe. The European Road Safety Observatory<sup>27</sup> provides detail information on why and how to set and monitor quantitative road safety targets. In the late 1980s, road safety targets were a fairly unique experience found in only a few developed countries. The well documented success, both quantitatively and qualitatively, of target setting initiatives in countries such as Great Britain has made the practice of adopting targets almost a necessity to improve the level of road safety in many countries. Today, most advanced countries have either a road safety vision or targets or a combination of both in place to help make road travel safer.

Road safety quantitative targets provide the focus for the national road safety strategy and the level of key institutional management decisions about coordination, legislation, funding and resource allocation, promotion, and monitoring and evaluation needs, as well as necessity for research, development and knowledge transfer. Research and experience indicate that long term goals and interim targets lead to:

- Increased political will and stakeholder accountability for road safety;
- Closer management of strategies and programmes, better safety programmes and better safety performance;
- Better use of public resource; and
- Increased motivation of stakeholders.

Current good practice involves a combination of top down long term goals as well as bottom up interim targets (usually of 7-10 year duration) which are soundly

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<sup>27</sup> European Road Safety Observatory (2006): Quantitative road safety targets, retrieved February 13,2008 from [ww.ero.eu](http://ww.ero.eu)

related to interventions, their likely effectiveness in the national road safety strategy. Top down long term goals are set based on an idealistic objective with little prior consideration of how the target is to be reached. Bottom up interim targets are set on the basis of forecasting long term past and future trends and relate to achievable outcomes for a specified package of measures within a given timeframe. Targets that are soundly related to the stated measures and their likely effectiveness provide both clear motivation for stakeholders and meaningful yardsticks against which progress with implementation of the strategy can be measured.

Road safety targets are generally proposed by a lead agency and/or the coordination body and are then submitted for Ministerial/Cabinet and/or Parliament approval. The activity is driven by the lead agency which reviews safety performance, identifies priorities, and organizes the other key government stakeholders to consider and approve proposed outcomes and outputs. Developing countermeasures and action plans at national, regional and/or local levels are integral to the formulation of road safety targets.

In good practice road safety management, 'results focus' is the overarching institutional management function. It determines the country's level of ambition for road safety and takes into account the interventions and institutional arrangements which need to be put in place in order to realise it. The process generally involves:

- Appraising current road safety performance;
- Adopting a far-reaching road safety vision or goal for the longer term;
- Analyzing what could be achieved in the shorter term;
- Agreeing targets; and
- Ensuring accountability across the road safety stakeholders.

In this section of the report, the current national road safety goal is presented and new road safety target is proposed together with safety performance indicators and monitoring mechanisms. The proposed new road safety target is based on the results of the review and assessment made on the existing system of managing road

safety issues, relevant laws, institutional organizations, funding, road safety works, and trends and characteristics of road traffic accidents.

It is very important to note here that the proposed target is made based on idealistic objectives with little prior knowledge of the extent of the commitment of the Government of Ethiopia. The proposal is based on the assumption that the Government of Ethiopia at the federal and regional levels will adopt the target and formulate detailed road safety strategy and programmes to reach the target.

### **5.1. The National Road Safety Goal**

The NRSCO report<sup>28</sup> referred to the target which was envisaged in the Road Safety Study<sup>29</sup> to stabilise the increasing traffic accident death rate in the two years period of the action plan. The report also noted the reduction of traffic accident death rates in the period 2002/03-2004/05 from 136 to 128 per 10,000 vehicles as the success of the envisaged goal.

Following the Road Safety Study and the establishment of the interim National Road Safety Committee, a two-year road safety action plan, in which road safety tasks are listed, was prepared. In the implementation phase, the interim NRSC and NRSCO has set a "national road safety goal" to reduce the benchmark rate (the rate in 2002/03, 136 per 10,000 vehicles) by 60% by the year 2009/10. This goal has also been accepted by the RRSCs.

The target was not, however, approved by the Government of Ethiopia at both the federal and regional levels. As a result of this, there has not been government commitment and well established system of intervention and effective institutional management system. Consequently, the target has not been widely advocated and given adequate focus on how to achieve it.

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<sup>28</sup> National Road Safety Coordinating Office, February 2008; Overview of the Road Safety in Ethiopia. Op. cit.

<sup>29</sup> TRL Limited in association with Ross Silcock Ltd. (2001). Study Report for a Sectoral Road Safety Programme in Ethiopia.



The trend shown in Table 2-1 shows a real decrease of death rates per 10,000 vehicles and absolute decreases in the total road traffic accidents and fatalities in recent years. Based on these, there is a strong belief among road safety stakeholders, currently, that road traffic accidents and fatalities are decreasing in Ethiopia and the national target will be met at the end of 2009/10.

## 5.2. Proposal for “Road Safety Vision 2020”

Recognizing the importance of road transport for the socio-economic development of the country, the Government of Ethiopia is implementing Road Sector Development Programmes since 1997. The assessment made in this case study on the existing institutional organization and safety performance in the country shows that the road safety works and its management system is not coping with the magnitude of traffic accident problems and the worsening situation related to the rate of road network expansion, population, and motorization. This requires the Government and all stakeholders to immediately understand the situation and start taking measures to address the problem in sustainable way.

Based on experiences gained from industrialized countries which effectively addressed road safety, it is proposed to establish a ten-year successive plan for the period 2010-2020, under the Road Safety Vision 2020: “**Making Ethiopian Roads Safer for Every One**”. A ten-year time frame would provide the Ethiopian road safety community with an overriding theme for a sufficiently lengthy period to permit the development and implementation of new or enhanced strategies and programmes to help it achieve its goal.

The proposed target of the Road Safety Vision 2020: “**Making Ethiopian Roads Safer for Every One**” is to reduce the fatality rate to 25 fatalities per 10,000 vehicles by 2020 from the current base rate. The intermediate target in 2015 is to reduce the fatality rate by half. The target should be related to road safety interventions, closely monitored, and adjusted if necessary at the midpoint, in 2015.

Based on the findings of the study, the following sub-targets are also proposed:

1. Improve the safety of pedestrians and cyclists through enhancing their safety awareness, effective enforcement of traffic regulations, and providing safer roads.
  - Bring behavioral change among pedestrians and cyclists by 85 % to safely using the road through education and road safety publicity;
  - Bring behavioral change among drivers by 85 % to respect and give the right of way for pedestrians and cyclists at crossings through training and publicity;
  - Provide safe road infrastructure by giving due consideration of the safety of pedestrians and cyclists. Provide sidewalks/cycle lane, crossing, segregating, and other facilities and take traffic calming measures on all roads as appropriate; and
  - Enforce traffic laws for pedestrian and cyclist safety.
2. Reduce over speeding by 85 % through effective enforcement of traffic laws, creating awareness among drivers that over speeding is a killer, and providing self-enforcing speed reduction devices on vehicles and measures on the road as appropriate through accident black spot study.
3. Reduce violation of traffic regulations, particularly those which are highly related to traffic accidents, by 40 % through effective enforcement and enhancing drivers' safety awareness. These include but not limited to driving without license; over speeding; driving under the influence of alcohol, drugs or Chaat; driving without respecting the right hand rule; failure to give way for other road users; following too closely; improper overtaking, turning, and parking; failure to respect traffic signs; and excess loading.
4. Reduce the involvement of commercial vehicles (public transport vehicles and trucks) by 30% through improving their road worthiness (standards), providing safer roads, controlling excess loading, controlling over speeding, prohibiting driving with fatigue, and improving safety awareness of drivers.
5. Improve the severity of road traffic accidents by 20% through the use of seat belts and helmets, providing forgiving roads and environment (through safety

audit and black spot study), improving the standard of vehicles, and providing pre-hospital care and emergency medical treatment.

6. Introduce and increase compliance with mandatory seat belt and helmet use, minimum 85 %.
7. Improve the safety of road infrastructure for all road users by 75% through safety audit and black spot study.
8. Improve the safety standard of vehicles and their road worthiness by 50% through revising the existing legislation, and effective and sustainable implementation of the newly introduced vehicle inspection system.
9. Implement drivers' training, testing, and licensing in compliance with the proclamation.
10. Create, recognize, promote, and strengthen the private-sector partnership in road safety.

Road Safety Vision 2020 should be undertaken with a clear Government policy commitment, lead agency, legal framework, and involvement of all road safety stakeholders. It has to build upon the strengths of the road safety works being carried out by the different stakeholders including the interim road safety committees at the federal and regional levels. All weakness should be identified and corrected. Road Safety Vision 2020 should effectively fill gaps and strengthen road safety works in areas identified in this study. Clear road safety strategy and programmes should be defined in which all road safety stakeholders implement their share in a coordinated manner under the lead agency. The accountability of each road safety stakeholder should be closely monitored in the implementation of road safety programmes.

Table 5-1 provides the proposed list of broad interventions related to the proposed safety target that should be undertaken by road safety stakeholders. The political will and commitment of the Government is mandatory to devise a policy, necessary legal framework, establish a road safety lead agency, and provide the required funding. These will ultimately create enabling environment for all other stakeholders

to effectively work for the improvements of road traffic accidents under the coordination of the lead agency.

It is important that the road safety targets are agreed by governmental agencies and an understanding is put in place to ensure the systematic follow-up through which the success or failure of specific actions are determined. In this process, under the umbrella of the national road safety targets, strategies and programmes, each government agency at federal or regional levels has to develop a strategic plan outlining its goals and the means of achieving them. This activity represents the cornerstone of the road safety performance assessment system. The lead agency for road safety has to coordinate this activity.

Systematic and transparent quantified monitoring of the implementation of road safety strategies and progresses towards meeting the targets is essential both for maintaining the motivation of stakeholders (and hence the effectiveness of implementation) and for updating of the strategies and targets in light of experience. The road safety agency, should take the responsibility of coordinating and systematically monitoring the implementation and updating the strategies and targets.

**Table 5-1. List of proposed interventions related to the proposed road safety target**

No.	Interventions	Time frame	Responsible body
1	<b>Policy and legislations</b>	2009	Government
	<ul style="list-style-type: none"> <li>Defining clear road safety policy: Make road safety a political priority</li> </ul>		
	<ul style="list-style-type: none"> <li>Approval of legal document to establish lead agency; give it adequate resources, and make it publicly accountable</li> </ul>		
	<ul style="list-style-type: none"> <li>Revised Traffic Control Regulation (Road Code) which addresses: the use of seat-belts, child restraints, use of motorcycle and bicycle helmets, drug and alcohol-impaired driving with maximum limits (including prevention of the influence of Chaat chewing), and the use of mobile telephone when driving. Set appropriate fine limits.</li> </ul>		
2	Road Safety Vision 2020: <b>"Making Ethiopian Roads Safer for Every One"</b>	2010	Road Safety Lead Agency
	<ul style="list-style-type: none"> <li>Adopt "Road Safety Vision 2020"</li> </ul>		
	<ul style="list-style-type: none"> <li>Develop a multidisciplinary national road safety strategies and programmes to achieve the road safety targets under Road Safety Vision 2020.</li> </ul>		
3	Introduce on the spot traffic accident reporting using a standard format containing all information required by multidiscipline, and computerize traffic accident data recording and management system	2010	Lead Agency & Police
4	Provide adequate resource and build the capacity of traffic police with adequate training, equipment, and discipline for effective traffic management, enforcement, and traffic accident investigation, reporting, and computerized data management.	2010	Federal and Regional Police
5	Provide legal framework, resources, and manpower for the implementation and the sustainability of the vehicle inspection system devised following the reform of the	2009-2020	Federal & Regional Transport

	Federal Transport Authority which is being introduced.		Agencies
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**Table 5-1. List of proposed interventions (Continued)**

No	Interventions	Time frame	Responsible body
6	Provide resources and manpower for the implementation and the sustainability of driver training, testing, and licensing system as per Proclamation 600/2008.	2009-2020	Federal Transport Authority
7	Establish traffic and safety engineering units under road agencies to give due considerations for road safety in the planning, design, construction, and maintenance of road infrastructure: "Safer Roads for all road users".	2009-2020	Road Agencies
	<ul style="list-style-type: none"> <li>Set appropriate design standard, ensure that road safety considerations are embedded in the planning stage of new road projects, and manage infrastructure to promote safety for all</li> </ul>		
	<ul style="list-style-type: none"> <li>Introduce road safety audit for new and existing roads to make the road infrastructure safer for every road user</li> </ul>		
	<ul style="list-style-type: none"> <li>Improve the safety of the existing road infrastructure through accident Black Spot Identification and selecting low-cost and cost effective mitigation measures</li> </ul>		
8	Coordinate, strengthen, and focus on targeted road user groups to make road safety education and publicity more effective. Promote safer road use through publicity.	2009-2020	Lead & Transport Agencies
9	Provide legal framework and adequate resources to institute effective emergency and pre-hospital care sustainably for road traffic accident victims. Build capacity.	2009-2020	Government & Ministry of Health
10	Implement proclamation 559/2008 fully so that third party risks are covered and Insurance Fund is established for any traffic accident victim to get immediate medical treatment	2009	MOTC, TA & concerned bodies
11	Promote, support, and coordinate capacity building and road safety research to effectively and sustainably improve the occurrence of road traffic accidents	2009-2020	Road Safety Lead Agency
12	Coordinate and motivate the involvement of non-governmental organizations and the private sector in road safety works	2009-2020	

The European Road Safety Observatory<sup>30</sup> suggests that monitoring and updating should be the integral parts of implementation and require appropriate collection, processing and publication of reliable data for:

- Continuous monitoring of targeted and other safety performance indicators;
- Establishing the effectiveness of specific road safety measures by carrying out before and after studies;
- Reviewing and updating of policies and measures with re-distribution of resources towards more cost-effective measures;
- Identifying delays in implementation requiring corrective action; and
- Establishing the level of public support for interventions.

The Observatory document further cites that most countries which are active in road safety have a comprehensive set of databases across transport, health and justice sectors to inform road safety problem analysis, target-setting, and the monitoring and evaluation of programmes, measures and performance. The data requirements and the level and type of disaggregation are closely linked to the detail of the road safety plan.

Safety performance indicators or intermediate outcome data for monitoring “Road Safety Vision 2020” for Ethiopia should include but not limited to:

- Government commitment in defining road safety policy, establishing lead agency, providing the required legal framework and resources;
- Adopting “Road Safety Vision 2020” and defining multisectoral road safety national strategy and programmes, capacity in coordinating and monitoring;
- Modernized traffic accident reports and computerized traffic accident data by police, casualty data in hospitals and insurance records;
- Process and system indicator information on the effective implementation of the new vehicle inspection procedure, driver training, testing, and licensing,

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<sup>30</sup> European Road Safety Observatory (2006). Op. Cite.



insurance system and establishment of Insurance Fund, emergency and pre-hospital care, and safety education and publicity;

- Behavioral indicators from survey data on drunk driving, changes in speed or seat belt , and helmet use, drivers violating traffic regulations;
- Process and system indicator information on safety compliance with pedestrian and cyclists safety requirements on road infrastructures, the number of road safety audits made on existing and new roads, the number of black spot studies undertaken, the number of hazardous locations treated, the number of junctions improved for safety; and
- Before and after studies on safety awareness of road users, standards and road worthiness of vehicles, violations of traffic laws, over speeding, private-sector partnership, and others.

## 6. RECOMMENDATIONS

This case study attempts to provide a review of road safety management system, road safety works, road traffic accident problem, and proposes ideal road safety targets in Ethiopia. The assessment, generally, indicates that road safety is not a priority government concern. Road traffic accidents are causing heavy loss of human and economic resources with the relatively low road network and motorization level. The risk is increasing with the increase in population, the road network expansion with little consideration of safety, and the increase in motorization with the vehicle fleet generally in poor conditions. Considering the severity of traffic accident problem, the importance of road transport in this country and the rate at which the road network is expanding, road safety is a vital issue to be addressed.

After the TRL and Ross Silcock<sup>31</sup> Road Safety Study and the establishment of the interim Road Safety Committee at the federal level and Road Safety Committee in the regions, road safety activities have been undertaken with funding from the RF. The institutional organization and coordination, however, remains weak due to the lack of capacity and a leading agency which fully undertakes the responsibility of road safety. The absence of road safety policy in the country results in lack of commitment to road safety in the key agencies.

In order to avert the increasing losses of human and economic resources caused by road traffic accident, it is vital that road traffic safety issues are dealt with adequately at early stage in the development of road transport infrastructure and services. This can sustainably be achieved through an ambitious Road Safety Vision 2020 **“Making Ethiopian Roads Safer for Every One”**. The specific road safety target in a ten-year period, 2010-2020, is to reduce the fatality rate to 25 per 10,000

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<sup>31</sup> TRL Limited in association with Ross Silcock Ltd. (2001). Study Report for a Sectoral Road Safety Programme in Ethiopia.

vehicles from the current base rate. The proposed Road Safety Vision 2020 also has numerous sub-targets listed in Section 5.2.

The following are recommendations made based on the findings of this case study. The recommendations are fundamental interventions indicated in a broader sense so that they can be defined in detail by the lead road safety agency and all stakeholders in the form of national road safety strategy and programmes.

## **1. Policy, Legislation, Institutions, and Funding**

It has been demonstrated from the experiences of other countries that the presence of political commitment and policy directions are fundamental requirements to tackle road safety problem sustainably and effectively. Thus, a comprehensive road safety policy that ensures the commitment of the government and all other stakeholders at all levels is fundamental for a sustainable road safety in this country.

The establishment proclamation for the National Road Safety Council, which has been awaiting approval, needs immediate attention and be approved to establish a leading agency, at the federal level, fully responsible to institute sustainable road safety. Similar leading agency should also be established at regional level.

It is essential that the establishment proclamations for road authorities (to incorporate safety adequately in the expansion of road infrastructure and up keeping its safety) and other relevant key government agencies be revised to clearly state and define their responsibilities in road safety.

Horizontal and vertical legal linkage between the relevant public agencies at all levels (federal and regional) should be established.

Relevant transport legislations need to be revised or established to provide the legal framework for safer transport operations and enforcement. This should include but not limited to the introduction of laws to institute the use of seat belt, helmets, child restraints, and prohibiting driving under the influence of alcohol, drugs or chaat,

and use of mobile telephone while driving. Along with the introduction of these laws, levels of penalties should be fixed to enable effective enforcement.

Although the current financial requirement for road safety is satisfied from the RF, in the long-term, funding is expected to be a bottleneck. It is very important, therefore, to identify possible sustainable sources of funding such as percentages of penalties from traffic violations and compulsory third party insurance premiums, and private sector funding.

## 2. National Road Safety Strategy and Programmes

The road safety lead agency should adopt Road Safety Vision 2020: “Making Ethiopian Roads Safer for Every One” and get the approval of the government. The safety target should relate with clear multidisciplinary national road safety strategy and programmes. The lead agency should closely coordinate and monitor all road safety stakeholders to effectively involve and implement their share. The main recommended areas of focus include but not limited to:

1. *Organization and capacity of traffic police:* It is vital that the traffic police be given adequate priority and reorganized so that it shoulders its responsibility effectively in managing the safe operation of traffic and accident investigation and reporting. Enforcement of road safety legislations such as over speeding, failure to give-way for pedestrians and vehicles, risky driving discipline, use of seat belt, control of driving under the influence of alcohol and drugs, use of helmets, and others can only be effective through good organization, adequate training, necessary equipment, and professional discipline.
2. *Road traffic accident investigation, reporting, and computerized database:* the establishment of a standardized accident reporting procedure and database system is the fundamental requirement of any type of road safety activity. Efforts being made in this area should be consolidated and a way for its fast introduction throughout the country needs to be devised.
3. *Road safety engineering:* With the revision of the establishment proclamation of road authorities to include road safety responsibilities, a strategy should be devised so that road safety engineering activities such as road safety audit, black spot identification, accident reduction engineering measures,

and road planning, design, and operation management with due consideration of vulnerable road users are undertaken as routine tasks to up keep the safety of the road network.

4. *Road safety education, training, and publicity*: One of the main reasons for the unsafe road transport system and giving it low priority is the critical lack of road safety knowledge at all levels. Safety education for children at schools, appropriate training for all stakeholders (politicians, managers, road safety workers, and road users), and publicity should be given adequate importance and a means to do so should be devised. Road safety publicity should focus on identified and targeted road user groups related to the causes of accidents.
5. *Vehicle safety standard and annual inspection*: A national strategy on vehicle standards based on multiple factors including the benefits from savings in traffic accidents or injuries and pollutions as well as improvements in traffic operations (congestion) should be defined. The provision of adequate legal framework, resources, and manpower development is critically important for the sustainable implementation of the new vehicle inspection system being introduced by the Federal Transport Authority.
6. *Driver's training, testing, and licensing*: Drivers' error is the major contributor of traffic accidents. In order to improve this, the provision of adequate resources, and skilled and dedicated manpower for the sustainable implementation of driver training, testing, and licensing system in compliance with Proclamation No. 600/2008 is fundamental.
7. *Pre-hospital care and emergency medical service*: The study findings indicated that pre-hospital care is lacking and emergency medical facilities are not providing adequate treatments for traffic accident victims in time. The provision of legal framework, adequate resources, and defining a national strategy to improve communication, pre-hospital care, ambulance, and emergency medical services are absolutely needed to improve the critical post-accident problem and the number of deaths.
8. *Insurance system*: It is fundamental to immediately provide adequate resources and manpower to sustainably implement the mandatory the insurance system against the third party risks and to establish the Insurance Fund for emergency medical treatment for road traffic accident victims.

9. *Research and training*: The need for research is fundamental to adapt proven and promising road safety methods and technology, as well as to identify appropriate solutions for unique national and local road traffic situations. There is a also clear need for training to improve acute shortage of manpower. A national strategy to create, promote, support, and coordinate research and training should be defined and the capacity and enabling environment should be developed so that the road safety problem is addressed systematically and sustainably.