



Royal Government of Bhutan Decade of Action for Road Safety (2011-2020)



Road Safety is everyone's responsibility

Abbreviations

ALS	Advance Life Support
CPR	Cardio Pulmonary Resuscitation
DMS	Department of Medical Services
DOR	Department of Roads
DOPH	Department of Public Health
DUDES	Department of Urban Development and Engineering Services
DDM	Department of Disaster Management
EMS	Emergency Medical Services
HHC	Health Help Centre
HR	Human Resource
DLG	Department of Local Government
MoH	Ministry of Health
MOE	Ministry of Education
MOEA	Ministry of Economic Affairs
MOHCA	Ministry of Home and Cultural Affairs
MOIC	Ministry of Information and Communication
MOWHS	Ministry of Works and Human Settlement
RBP	Royal Bhutan Police
RSTA	Road safety and Transport Authority
RSC	Road safety Council
RICBL	Royal Insurance Corporation of Bhutan Limited
SOP	Standard Operating Procedure
TMD	Traffic Management Division
PPD	Policy and Planning Division
TIN	Transport Infringement Notice
UN	United Nations

TABLE OF CONTENTS

1. INTRODUCTION.....	6
1.1 BACKGROUND	6
1.2 EXPANSION OF ROAD NETWORK	6
2. PROBLEM	8
2.1 MOTORIZATION GROWTH TREND	8
2.2 MODAL SPLIT.....	8
2.2 ROAD CRASHES IN BHUTAN	9
2.3 CAUSES OF ROAD ACCIDENTS IN BHUTAN.....	10
2.4 ROAD SAFETY VIOLATIONS	10
3. DECADE OF ACTION FOR ROAD SAFETY (2011-2020).....	11
3.1 RATIONALE AND PRINCIPLES.....	11
3.2 VISION.....	12
3.3 GOAL	12
3.4. OBJECTIVES:.....	12
4. BROAD AREAS OF ACTION.....	13
4.1 SAFER BEHAVIOR OF ROAD USERS	13
<u>4.1.2</u> <i>Drink or drug driving:</i>	13
<u>4.1.3</u> <i>Compliance to speed control and speed limits:</i>	14
<u>4.1.4</u> <i>Restraint use:</i>	14
<u>4.1.5</u> <i>Fatigue and distracted driving:</i>	15
4.2 ROAD ENGINEERING.....	15
4.4. ROAD TRANSPORT AND TRAFFIC FLOW MANAGEMENT:.....	17
4.5 PROFESSIONAL DEVELOPMENT IN ROAD SAFETY	18
4.6 BUILDING EVIDENCE FOR ROAD SAFETY SYSTEM.....	19
4.7 POST CRASH RESPONSE:	20
4.8 LEGISLATION MEASURES:.....	20
5. DECADE OF ACTION PLAN MATRIX	21
6. FINANCIAL RESOURCES	28
6.1 FUNDING FOR ROAD SAFETY INITIATIVE:.....	28
6.2 COST OF ROAD TRAFFIC ACCIDENTS	29
6.3 WORK PLANS AND ANNUAL BUDGETING.....	29
7. PARTNERSHIP, COORDINATION ACCOUNTABILITY FRAMEWORK	30
7.1 MINISTRY OF INFORMATION AND COMMUNICATIONS	30
<u>7.2.1</u> <i>Road Safety and Transport Authority</i>	30
7.3 TRAFFIC POLICE – ROYAL BHUTAN POLICE	31
7.4 CITY CORPORATION/THROMDEYS:.....	31
7.5 MINISTRY OF WORKS AND HUMAN SETTLEMENTS.....	31
<u>7.5.1</u> <i>Department of Roads:</i>	31
<u>7.5.2</u> <i>Department of Urban Development and Engineering Services (DUDES)</i>	32
<u>7.6</u> MINISTRY OF EDUCATION:.....	32
7.8 MINISTRY OF HEALTH.....	33
7.9 INSURANCE COMPANIES	33

8. EVALUATION OF THE DECADE OF ACTION FOR ROAD SAFETY.....	34
8.1 INDICATORS FOR DECADE OF ACTION FOR ROAD SAFETY	35
DOCUMENTS CONSULTED:	41
ANNEXURE.....	42
ANNEXURE 2: LIST OF STAKEHOLDERS CONSULTED	42
ANNEXURE 3: CORE DRAFTING MEMBERS FOR THE DECADE OF ACTION FOR ROAD SAFETY (2011-2020).....	42

FOREWORD BY THE MINISTER FOR INFORMATION & COMMUNICATIONS

With the rapid increase in motor vehicle numbers, the safety of our people using surface transport is of growing concern to the Royal Government. Over the past six months alone 592 motor vehicle accidents were reported across the country, with 49 lives lost and 317 people injured. A majority of the crash victims were youth in the prime of their lives. This number may seem small but it is a relatively large proportion of our population. In fact Bhutan suffers 15 deaths for every 10,000 registered vehicles, which is very high by global standards.

An even greater reason for concern is that a majority of vehicle crashes in the country are caused by “human error” - negligence and carelessness of motorists as well as problems like drink driving. Our people are also losing lives because of lapses in monitoring and implementation of safety rules and regulations. In addition there is a lack of understanding and public awareness among the people.

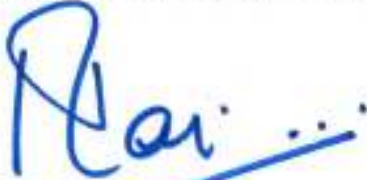
The comfort and safety of the people on our roads is of utmost importance and of the highest priority for the Royal Government. The Road Safety & Transport Authority (RSTA) is the focal Agency for road safety aspect across the Kingdom. And road safety must be ensured through a well-coordinated approach with relevant agencies like the Traffic Police, Municipal Corporations, Ministry of Health, and Department of Roads. But road discipline is also a civic responsibility, particularly of people driving motor vehicles. Citizens must exercise sense of civic awareness and be willing partners in our program to instill healthy driving codes.

A Plan of Action has been designed through extensive consultations with all major stakeholders, and activities carefully selected, keeping in mind difficulties like funding limitations. There must be a conscious effort by every motorist to prevent the loss of innocent lives and save families and society from trauma and tragedy. We ask for cooperation of all Bhutanese people to make this a success.

The UN General Assembly’s declaration of 2011-2020 as the Decade of Action for Road Safety has come at a time when Bhutan faces the menace of this developmental paradigm. Bhutan has set an ambitious but achievable target to reduce road deaths to below 5 per 10,000 registered vehicles and vehicle crashes by 50% by 2020. We will inculcate in our people a strong road safety culture through awareness program and the enforcement of the RST Act.

Investment into such preventive efforts will pay off in saving of lives, minimizing damage to properties, payment of compensation, health costs, personal and societal trauma and tragedy. Therefore, I urge and encourage agencies including insurance companies, vehicle dealers, NGOs, and the media to support and contribute the road safety initiatives. We also look forward to real commitment from our development partners to help us realize the noble goals of the Plan of Action. The understanding and timely intervention by citizens will make Bhutan a safer place for vehicle road users and all citizens.

Drive with Better Civic Awareness.



Nandalal Rai
MINISTER

DECADE OF ACTION FOR ROAD SAFETY (2011-2020)

1. INTRODUCTION

1.1 Background

Over the years, road crashes have claimed many lives and injured even larger number of people, causing untold suffering and sorrow to the family members of these victims. This has also imposed enormous cost to the national health care system. Recognizing road safety as a growing concern and an important social responsibility of the government, suitable laws have been enacted. The enactment of the Road Safety and Transport Act 1999 and subsequent establishment of the Road Safety and Transport Authority (RSTA) under the then Ministry of Communications as the lead agency responsible for road safety in Bhutan is a major initiative of the Government.

Owing to wide areas of intervention required, road safety responses have so far not been vigorous enough and remained fragmented among the major players. Road crash is not only a public health or transport issue; other government agencies, private sector, community and individuals, are equally responsible. Road crashes are a serious problem with growing motorization. Crashes are caused by numerous factors and so are solutions to preventing them. To fulfill the commitment made by Bhutan as part of the UN General Assembly Resolution A/64/255 of 02 March 2010, proclaiming the Decade of Action for Road Safety 2011-2020, the Road Safety Plan of Action has been drawn for Bhutan as well. This will be yet another major initiative in the government which is expected to enhance road safety situation in Bhutan significantly.

The plan of action is drawn through key stakeholder consultation referring to the international best practices but tailored to the unique requirement of the country. The interventions cover all possible areas dealing with human behavior, road engineering, awareness and education, and law enforcement, capacity of implementing agencies and funding. The Action Plan is divided into specific areas of intervention by different stakeholders and within a defined time-frame.

1.2 Expansion of Road network

Bhutan embarked on the modern road transport system in January 1961 with the construction of the 179 km Phuentsholing -Thimphu highway. In spite of late start, the road transport system is rapidly growing. The network has now

expanded to over 7,000 kilometers of road covering different parts of the country through mountains and valleys, as shown in the table 1.

Table 1: Length of road by road types

Road Type	Length (Km)	Percentage
Expressway	6.20	0.09
Primary national highway	1753.83	25.34
Secondary national highway	505.59	7.31
Dzongkhag road	1066.09	15.41
Urban road	295.00	4.26
Farm road	1980.26	28.62
Forest road	583.39	8.43
Access road	580.57	8.39
Power tiller track	149.20	2.16
Total	6920.13	100.00

Source: Department of Roads, Ministry of Works and Human Settlements (2010)

Road network and therefore road transport services will only keep growing. The Thimphu - Phuentsholing highway is designated as the Asian Highway (AH48), as a part of the larger initiative to link all capital cities, urban centers and sea-ports in Asia. All *Dzongkhag* head-quarters are connected by road system except for Gasa. All *gewog* headquarters will be connected by road under the government's common minimum program. The strategic national highways are being realigned with the construction of double lane roads of which the second east-west highway from the south, and five north - south high ways are of particular significance.

High cost of building roads and improving the quality of the existing ones is a huge challenge. Further up-gradation through better engineering designs is necessary to improve the safety of roads.

2. PROBLEM

2.1 Motorization growth Trend

With rapid socio-economic development, there has been an exponential rise of number of vehicle since the arrival of first motor vehicle in early 1960's. As of December 2010, there were 53,382 registered vehicles¹ with the average growth of around 9% annually. Of them, almost 55% are registered in Thimphu² region, 34% in Phuentsholing region³ and 6% in Samdrupjongkhar⁴ and 4% in Gelephu⁵ region. The vehicle registration for the last six years (2005-2010) has almost doubled from 28,472 to 53,382 vehicles in the country. This translates to 7657 registered vehicles per 100,000 people in 2010. In other words, one in 13 Bhutanese owned a vehicle⁶ in 2010. The vehicle ownership is higher in urban setting than in rural areas. For instance, according to Population and Housing Census of Bhutan 2005, 30% of the households (4741/ 15728 households) in Thimphu owned a vehicle which would have now increased further.

Motorization has particularly helped in reducing travel time; enhanced mobility of people, goods and services; provided easy and faster access to basic public facilities, and brought about unprecedented improvement in the living condition of our people. It has indeed, driven the socio-economic development process. Conversely, growing motorization has also led to several negative consequences and proved detrimental to the natural environment, human health, and more seriously on the victims of road crashes.

2.2 Modal split

About 58 percent of vehicles in the country comprises light vehicles. Two wheelers is around 17 percent with a decreasing trend over the years. Taxi number is also growing with 7 percent share currently. Obviously, crash rate is highest in the light vehicle category. Rough analysis of 2005 data indicates that 52% of accident cases involve light vehicles, followed closely by truck accidents at about 40%.

¹ Figures Excluding vehicles belonging to Armed Forces

² Thimphu region covers Thimphu, Paro, Haa, Punakha and Wangdue dzongkhags.

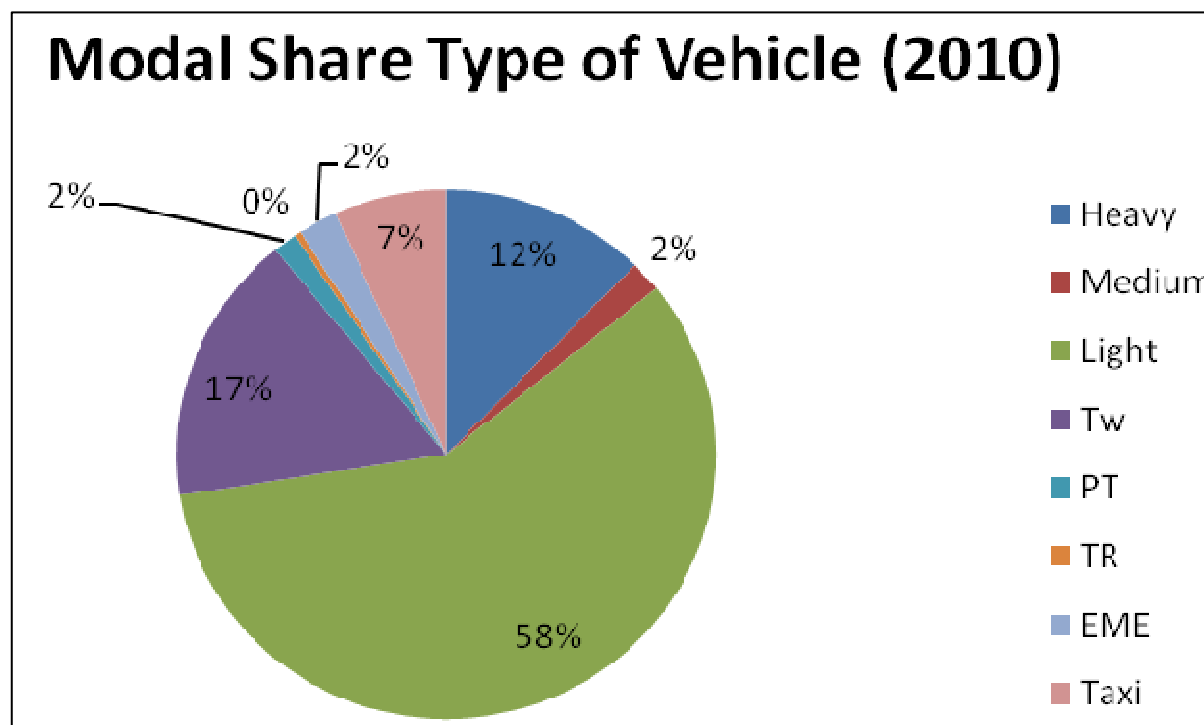
³ Phuentsholing region covers Chhukha and Samtse dzongkhags

⁴ Samdrupjongkhar region covers Mongar, Lhuentse, Pemagatshel, Samdrupjongkhar, Trashigang and Trashiyangtse Dzongkhags.

⁵ Gelephu region covers Bumthang, Dagana, Sarpang, Trongsa, Tsirang and Zhemgang Dzongkhags

⁶ Figure includes all types vehicles including earth moving equipments, power tillers, tractors, etc

Figure 1: Modal share type of vehicle 2010



2.3 Road crashes in Bhutan

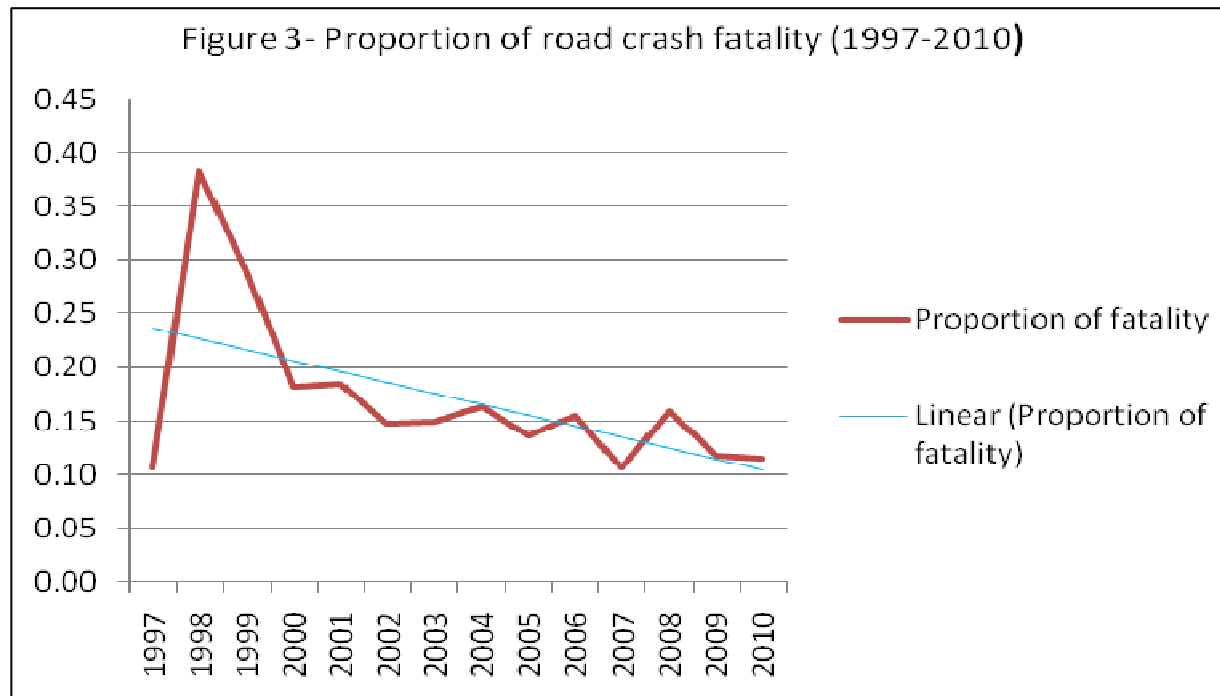
The road crash fatalities has averaged around 66 per year over the past 5 years and has shown a small annual increase, despite rapidly increasing traffic volumes. However, the fatality rate was 15 deaths per 10,000 registered vehicles in 2010 which is unacceptably high by international standards. The equivalent figure in developed countries is generally less than 2 or 3 per 10,000 vehicles. Deaths due to road traffic crashes in 2010 were 11.35 per 100,000 populations.

Fatality in a road crash event had been consistently more than 10% in a road crash (Refer figure 3). This indicates that when involved in road crash risk of dying is high on the Bhutanese road. During the last five years (2005-2010), 319 persons died and 2648 persons were injured in Bhutan. In 1998 and 1999, the fatalities were 100 and 76, respectively. These high figures were due to few passenger bus crashes.

In Bhutan, like in many other countries, road crashes are obvious public health problem resulting in substantial deaths and disabilities. Road traffic events are huge socio-economic losses to the individual, family and the society at large.

2.4 Causes of Road Crashes in Bhutan

From the limited data available on the cause of road traffic crashes, human error accounts for the majority of the cases of crashes documented from 2005 to 2010, 60% is related to human error. Alcohol and unlicensed driving contributed to 7% and 5% road crashes, respectively (Refer figure 3).

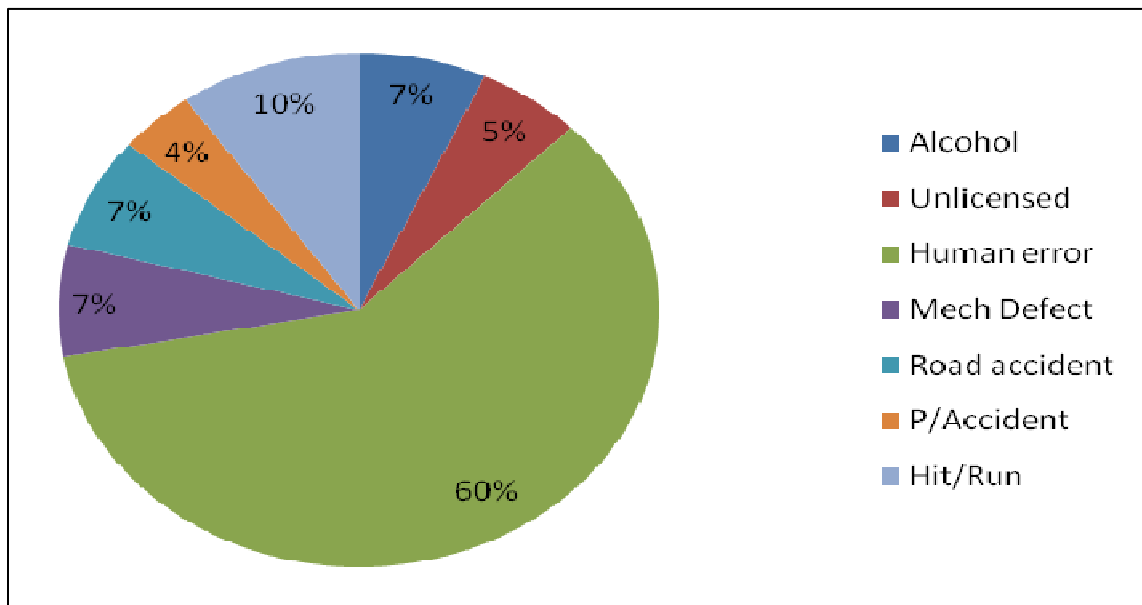


2.5 Road safety violations

The RSTA and the Traffic Division under the Royal Bhutan Police are the key enforcement agencies empowered by the RSTA Act 1999 and entrusted with road safety responsibilities which specifically include licensing of drivers, ensuring compliance to loading and seating capacity in vehicles, vehicle roadworthiness tests, enforcing speed limits and drink driving. During the recent nationwide highway patrol conducted on April 2011, it was observed that unlicensed driving (inexperienced drivers on the road) carrying extra passengers were the leading violations.

The past records of the Police records confirm that road safety violations is rampant among the Bhutanese drivers.

Figure 3- Percentage of road crash causes from 2005-2010



Source: Royal Bhutan Traffic Police, Thimphu (2010)

3. DECADE OF ACTION FOR ROAD SAFETY (2011-2020)

3.1 Rationale and principles

The Decade of Action for Road Safety is appropriate and timely for Bhutan to address the existing road safety gaps along with the global fraternity to improve road safety. This is an opportune moment to bring road safety as a high public health priority. During the Decade of commitment, Bhutan will review the existing practices and interventions in road safety, adapt programs and introduce evidence based activities with adequate financial resource allocation.

The Decade of Action for Road Safety (2011-2020), will take a balanced approach for road safety promotion and management on Five Es:

Education, **E**nforcement, **E**ngineering and design of roads, **E**mergency and post crash response, and **E**valuation of the program.

The focus will be on how safety can be engineered into the road network and use of the community based road safety programmes to address the risks faced by the drivers, pedestrians, cyclists and motorcyclists. Law enforcement will be scaled up to take tougher measures to address the major driver behavior problems such as drink-driving, speeding and serious repeat offending.

A detailed plan of action will be prepared by the stakeholders and implemented by the relevant stakeholders with RSTA as a lead agency. The initiatives will be promoted through media and other means of communication to educate the people on the efforts on road safety goals, objectives and sectoral initiatives. A regular update on the progress of the road safety promotion will be provided to the nation.

The Decade of Action Plan for Bhutan (2011-2020) will contribute to the bigger government vision of achieving Gross National Happiness (GNH) and synergistically contribute to:

- Injury prevention program of the Ministry of Health
- Crime reduction strategy of the Royal Bhutan Police
- Bhutan Transport 2040 Integrated Strategic Vision of the Ministry of Information and Communication
- Climate change mitigation Plan of Action by reducing vehicle emission

The successful implementation of the Decade of Action Framework for Road Safety will rely on the joint efforts of the road safety partnership with the sectors.

3.2 Vision

To build an excellent, well coordinated and well funded road safety system contributing to minimum rate of road crashes, minimum loss of lives and hospitalization due to road crashes.

3.3 Goal

By 2020, Bhutan will maintain the deaths and injuries due to road crash below the current level.

3.4. Objectives:

- Improve the level of safe behaviors among road users
- Improve road engineering and vehicle safety
- Improve post crash responses and medical management in road traffic crashes
- Build greater evidence and scientific information on road safety system in Bhutan
- Make road safety a national priority through multi- sectoral approach

4. BROAD AREAS OF ACTION

Road safety requires broad approach interventions addressing the behaviors of road users, road engineering, enforcement, education with appropriate legal and financial support. The Decade of Action for Road Safety takes all these components into consideration to ensure achieving the goals. Under the broad areas of actions are identified the key and supportive actions. Key and supportive areas are both priority interventions but would provide a guide for prioritizing the time frame during planning the key actions could be provided the priority than supportive ones.

4.1 Safer behavior of road users

The unsafe behaviors among the road users that are likely to result in crash or road accident must be recognized. Road users must be educated to change such behaviors through public education campaigns. Road users must also have access to long time behavior modification programs. The safer behaviors must be promoted through strict measures to detect and deter such behaviors among the road users.

4.1.2 Drink or drug driving:

Use of unacceptable level of alcohol among road users is perceived to be common among the Bhutanese road users because of low level of awareness and inadequate surveillance system. Road violations are also likely to increase due to the increasing problem of drug use that impairs driving. Therefore measures to reduce drink or drug driving will need to be given appropriate focus.

Key actions:

- Intensify structured public education and media campaigns on avoidance of alcohol during driving or legal limit of alcohol level during driving.
- Reinforce the sobriety checks for alcohol and drug level among the drivers and motorists.
- Improve the capacity of the traffic police and RSTA to build efficient surveillance system for use of alcohol and drugs while driving

Supportive actions:

- Educate road side hotels, restaurants and bar owners on their supportive actions for responsible serving of alcohol as a linkage to road safety
- Link alcohol abusers and chronic alcohol users on roads to alcohol rehabilitation services
- Link road safety messages to develop community pilot programs and draw best practice lessons for reduction of alcohol use while driving.

4.1.3 Compliance to speed control and speed limits:

Compliance to speed limit can prevent road crashes or minimize the injuries due to impact in the crash. The current system of speed control and speed limiting is not optimal due to the lack of safer speed education program and the weak enforcement.

Key actions:

- Conduct public and media campaigns for reduction of speed for road safety including the penalties for the speed offenders
- Identify high risk and accident prone road locations and install crash barriers and proper signage to regulate speed
- Strengthen monitoring system for speed limit compliance while driving by using appropriate technologies and gadgets
- Pilot programs for speed control measures in the designated locations on the high traffic areas and disseminate and use these evidences for program planning and expansion

Supportive actions:

- Engage communities and youth to educate on the adoption of safer speeds
- Establish certification of recognition programs for the community volunteers for road safety
- Engage school children to advocate on safer driving and safer speed on roads.

4.1.4 Restraint use:

The benefits of use of seat belts have proven to be protective in road crashes for all types of terrain. However, Bhutanese are on the early phase of behavior adoption for use of seat belts. Both education on use of seat belt and enforcement have been less aggressive. Child restraint is not required by practice for the vehicles.

Key actions:

- Improve enforcement and monitoring of the use of seat belts among driver and passengers
- Educate drivers and vehicle occupants on the safety benefits on use of seat belts
- Make drivers responsible to promote use of seat belt for passengers
- Promote use of proper child restraints for vehicles

Supportive actions:

- Make seat belt warning system mandatory for all types of vehicles imported into the country
- Conduct evaluation on the use of child restraints

4.1.5 Fatigue and distracted driving:

Fatigue and distractions contribute to road crashes. Long distance driving, inadequate sleep and use of mobile phone and other gadgets while driving are few of the many that can cause distraction. It is important to prevent fatigue or minimize distractions while driving.

Key actions:

- Strict enforcement of driving hour restriction of maximum 8 hours (as indicated in RST Regulation -1999) for passenger buses
- Educate other fleet of vehicles to restrict to maximum hours of driving
- Educate drivers on how to prevent fatigue during driving
- Develop more road side amenities such as rest places, drinking water facilities, alcohol free road side restaurants

Supportive actions:

- Educate general public and passengers about the driving hour restrictions for the drivers and encourage to report violations to the relevant agencies

4.2 Road engineering

Roads with greater safety standards and design can significantly contribute to greater road safety. Road safety should be the core consideration in the design and engineering standards of the road construction.

Key actions:

- Review and develop road design safety standards for all types of roads
- Introduce and conduct road safety audits on a regular basis by competent Authority
- Conduct general review for road alignments of the existing road networks and undertake corrective measures of the geometric designs in hot spots (bends, sharp turns, side drains, etc)
- Identify hazardous locations (roads located in landslide prone areas, sinking areas and settlements below the road) and reinforce safety standards
- Review and standardize road signage and markings

Supportive actions:

- Proper and effective maintenance of the road safety infrastructure
- Encourage the participation of all road users for building safer roads by proper usage of the roads and road side facilities
- Foster community based ownerships to maintain community roads -farm and feeder roads

4.3 Safer vehicles:

Vehicles with higher safety standards contribute to better safety and minimize risk of injury and death during the crash. The safety standards of the vehicles should be regulated by developing trade policies that promote the import of vehicles with better safety standards.

Key actions:

- Introduce vehicle import policies to reduce the rapid rise of number of vehicles in the country
- Develop and enforce general vehicle safety standards, ensure that un-road-worthy vehicles do not ply on roads and introduce road worthiness checks for all types of vehicles including armed force and diplomats
- Create well equipped inspection stations to conduct road worthiness testing of vehicles
- Enforce age limit for use as commercial passenger vehicles
- Enforce vehicle emission standards
- Educate the consumers on the safety features of the vehicles and promote vehicles with the highest safety features
- Participate in International/regional Forum For Harmonization of Vehicle Regulations and apply relevant standards

Supportive actions:

- Provide more differential tax deductions for the vehicles with higher safety standards.
- Introduce compulsory comprehensive seat belt (front and rear) and child restraints
- Promote safety air bags for vehicles as a standard requirement
- Introduce “new vehicle assessment program” for commercial vehicles

4.4. Road Transport and traffic flow management:

There is increasing volume of vehicle traffic due to the growth of motor vehicles in the country. The increasing level of congestion in the two biggest cities: Thimphu and Phuentsholing are due to growing number of cars coupled with absence of an effective bus service. There is a lack of or inadequate footpaths for the pedestrian crossings across the country. Bhutan needs to revisit the vehicles import policies and adopt key measures to limit the importation of vehicles to promote road safety as well as a way to reduce the carbon emission and commit to greener minimize carbon intake and fuel consumption. Measures must be introduced to promote effective alternative means of public transport over private cars and to have good complementary linkage with the transport policies by creating friendly environment for pedestrian, motorists and bicyclists.

4.4.1 Pedestrians

Key actions:

- Construct pedestrian friendly footpaths, pavements, overhead bridges and under passes
- Demarcate pedestrian crossings on the roads
- Educate pedestrians on the safer use of roads and traffic discipline

Supportive actions

- Conduct walk-ability index surveys in key urban towns and use the findings for policy support to build pedestrian friendly environment in urban settings
- Greater investment in pedestrian facilities

4.4.2 Bicycle

Key actions:

- Identify and construct bicycle routes/lanes
- Prepare safety standards and policies for the bicyclists
- Ensure that the safety package and rules are informed to the vehicle dealers responsible for providing the information
- Continue enforcement of use of helmet for bicyclists

Supportive actions

- Encourage use of protective gears such as luminous jackets
- Develop enlisting/licensing procedure and policy for the cyclists

4.4.3 Traffic and transport management:

Key actions:

- Designate proper parking spaces, stands and stops for different categories of vehicles
- Designate and enforce stand and stop points for buses and taxis
- Develop strategies for vehicle entry system for busy parts of the selected urban towns

Supportive actions

- Review vehicle import policy and consider introducing differential taxation system to minimize or regulate vehicle import
- Develop a good public transport system in the entire country within the inner cities, urban settlements to reduce traffic volume and discourage use of private vehicles
- Encourage private sector for public transport

4.5 Professional development in road safety

Road safety and transport sector is in need of professional categories to build efficient road safety system in the country. Investment in human resource capacity building must be a priority in order to achieve the goals by road safety by 2020. The basic core group of professionals in road safety system must be developed as a part of the long term response for road safety improvement.

Key actions:

- Develop a cross sectoral Human Resource Master Plan for Road Safety Action (2011-2020)
- Train pool of professionals in road safety management such as traffic engineers, road safety specialist, road design specialist, traffic inspectors, trauma team, search and rescue team.
- Standardize driver training and testing

Supportive actions

- Build institutional net work with road safety training institutes in the region
- Study feasibility for establishing road safety and transport training institute in Bhutan

4.6 Building evidence for road safety system

Road safety from the public health perspective is a new initiative for Bhutan. The road safety framework of Bhutan will be built based on our local experiences and the international best practices. To build a strong evidence for road safety for future programming, key evidences are vital to program planning. This information will be generated through multiple ways.

Key actions:

- Establish road traffic crash data system consistent with internationally accepted definitions
- Establish trauma registry in all the hospital and generation of reports
- Review and improve existing road crash database for Royal Bhutan Police, Road Safety and Transport Authority and Ministry of Health
- Publish annual road crashes and road safety reports
- Publication of annual reports and dissemination of Transport Infringement Notice (TIN) data
- Strengthen monitoring system for unsafe driving behaviors by developing Standard Operating Procedures(SOP)
- Conduct cost effective analysis of road safety interventions

Supportive actions:

- Conduct impact analysis of road traffic crashes
- Assess the walk-ability index and pedestrian friendliness environment

4.7 Post crash response:

Ensuring adequate emergency responses to handle the crash to save lives and prevent disabilities are very crucial. These services will be integrated into the emergency medical services and also focus on building efficient coordination response system mainly involving traffic police, RSTA, DDM, MOH, Local Government and other relevant stakeholders at the time of the crash event.

Key actions:

- Enhance response to crashes to prevent post crash injury complications
- Strengthen trauma registry system in the hospitals
- Strengthen provision of trauma care services by strengthening the existing health care system

Supportive actions:

- Contribute to local road safety evidence by conducting research, evaluation related road safety interventions
- Participate in evaluating the public awareness campaigns for road safety
- Lobby for additional resources and funds for road safety interventions from the Government and International Partners

4.8 Legislation measures:

Road Safety and Transport Act of Bhutan 1999 provides broad frame work for road safety. After over a decade since its enactment, it is felt that new developments emerged which needs amendment during the Decade of Action for Road Safety to further strengthen the legislative measure.

Key actions:

- Review and amend the current legislation on distinction of major and minor cases for motor vehicle crash offenders.
- Incorporate prevention of fatigue and distractions in the legislation to regulate commercial vehicle drivers
- Enact legislation that prohibit the vehicles without the use of comprehensive seat belt (front and rear)
- Develop mechanism for issuance or renewal of driving license, motor vehicle registration certificate based on offence records

5. DECADE OF ACTION PLAN MATRIX

The Bhutan Decade of Action for Road Safety (2011-2020) contains clear cut activities for various stakeholders along with the expected duration of completion. The Road Safety Decade of Action 2011-2010 for Bhutan will be a result based frame work with fixed time lines for achievement of goals set. The activities have specific timeframe for completion which is labeled as A, B and C. All the categories are core activities required for achieving the goals and objectives of the Bhutan Decade of Action for Road Safety. These labels only indicate the categorical time line required for completing the activity from the day of endorsement of the document. The interpretations for these labels are:

A= within 18 months

B= within 36 months

C= within 54 months

It is expected that all the activities outlined within the document are initiated latest within 54 months (4 ½ years) of the endorsement of the document. This is critical to ensure adequate time for implementation of the activities so that goals and objectives are achieved by the end of the decade. The broad action areas may not match exactly with the information contained within the matrices due to the expansion of details.

Table 1: Strengthening management and coordination bodies:

Activity	Activity label	Time required*	Agency responsible
Segregate Regulatory function which will also be responsible for coordination of road safety program	B	36 months	MoIC/RSTA
Establish a separate National Traffic Police Team	B	36 months	MoHCA/RBP
Review & integrate existing programs as one (EMS, Disaster, post crash events)	B	36 months	DMS/MoH
Establish Injury Prevention and Road Safety Program	A	6 months	MoH

**Time required refers to duration of completion of the activity after the endorsement of the Decade of Action*

Table 2: Safer designs, planning of roads and improvement of hazardous locations:

Activity	Activity label	Time required*	Agency responsible
Review, revise and develop the road design standards for all types of roads	A	18 months	DOR
Review, revise and develop planning guidelines for quality assurance to promote road safety standards	B	36 months	Bhutan Standard Bureau
Introduce road safety audit (tool kit, Manual)	B	36 months	RSTA
Conduct general review of road alignment on existing primary & secondary high way road networks and identify critical areas needing structural adaptation	A	24 months	DOR
Adaptation and improvement of the geometric design in critical areas (bends, sharp turns, side drains)	B	36 months	DOR/ DANTAK
Improvement of hazardous locations i.e, roads in landslide and sinking areas, settlements below the road)	A	On going	DOR/ DANTAK/ Thromdey
Review , standardize and monitor road markings and signage	A	12 months	RSTA
Installation and monitoring of the proper road signage	A	18 months	Thromdey/ DOR/ DANTAK in respective jurisdiction
Inclusion of pedestrian friendly foot paths, pavements, over head bridges and cycle tracks in urban designs and implementation	B	36 months	DUDES/Thromdeys
Introduce traffic signal lights in populated urban areas (policy directive needed)	C	54 months	MoIC/RSTA, Traffic Police, MOWHS (DOR, DUDES) and Thromdeys

Table 3: Driver Training and Testing:

Activity	Activity label	Time required*	Agency responsible
Revise driver training standards	A	12 months	MOLHR/RSTA
Review curriculum of driver training institutes	A	18 months	MOLHR/RSTA
Revise vehicle safety standards and testing	B	36 months	RSTA
Standardize driving testing and licensing procedures	A	12 months	RSTA
Review learners licensing policy and implement the revised license policy	A	12 months	RSTA
Training for road safety and traffic discipline for drivers	A	18 months	RSTA
Develop/revise the refreshers training curriculum for commercial vehicles	A	18 months	RSTA
Develop/revise refreshers training program for commercial vehicles	A	18 months	RSTA
Develop/revise training curriculum for non-commercial vehicles	A	18 months	RSTA
Develop/revise refreshers training program for non-commercial vehicles	A	18 months	RSTA

Table 4: Road safety awareness programs

Activity	Activity label	Time required*	Agency responsible
Develop communication strategy for road safety (hiring a national/international expert, consultative processes, printing , dissemination)	B	36 months	RSTA
Conduct communication campaigns (IEC Materials, Radio, TV, Print, interpersonal) for road safety	B	36 months	RSTA/ Traffic Police/MOH
High level advocacy to policy makers	A	Ongoing	MoH/RSTA/ Traffic
Observation of global days on Road Safety	A	Ongoing	MoIC/RSTA/ Traffic/ DoR/MoH
Introduce road safety education of children and young people	A	18 months	MoE/Traffic/ RSTA
Strengthen pilot innovative programs for schools road safety in selected schools	A	12 months	MoE/RSTA
Introduce school wide national programs for road safety and expand school youth volunteers for road safety	A	18 months	MoE/RSTA
Conduct annual /workshop seminars on road safety for stakeholders to review the communication events	C	54 months	RSTA/Traffic

Table 5: Promotion of safer road behaviors

Activity	Activity label	Time required*	Agency responsible
Develop safer speed policies and strategy	A	12 months	MoIC/RSTA
Review/revise use of seat belt and helmet policies	A	12 months	MoIC/RSTA
Implement child restraint actions	B	36 months	RSTA/Traffic
Conduct annual stakeholders meeting to review the lessons of promotion of safer behaviors on roads	A	Ongoing	RSTA/Traffic Police
Develop SOP for analyzing level of alcohol and drugs for road users	B	36 months	Traffic Police/MoH

Table 6: Vehicle import, Vehicle worthiness and vehicle safety standards:

Activity	Activity label	Time required*	Agency responsible
Review vehicle import policies to reduce the rapid rise of vehicles in the country	A	12 months	MOEA/MoF/MoIC
Review of commercial vehicle (Buses, Taxis and Trucks) fitness system	A	12 months	RSTA
Strengthen monitoring system of vehicle emission	A	18 months	RSTA
Develop standards for vehicle fitness	B	36 months	RSTA
Establish vehicle fitness inspection centers with required standard facilities in all dzongkhags	C	54 months	RSTA/Private sector/MoEA
Review commercial vehicle standards	B	36 months	RSTA
Review the age limit policy for commercial vehicles	B	36 months	MoIC/RSTA
Train motor vehicle inspectors and Traffic Police on vehicle roadworthiness testing and monitoring	A	Ongoing	RSTA/Traffic Police

Table 7: Post crash response systems

Activity	Activity label	Time required*	Agency responsible
Establish SOPs for coordination mechanism of RSTA, Traffic and Health in road traffic events	B	36 months	RSTA/Traffic/Health
Training program on search and rescue operation for RSTA and Police	A	12 months	RSTA/Traffic/DDM
Training of Health Help Center (HHC)staffs on pre-hospital care management for Road Traffic injuries	A	Ongoing	DMS
Evaluate the response system of HHC for road traffic crashes annually	A	Ongoing	DMS
Training of health care providers in road trauma in seven strategic locations	C	54 months	DMS
Establishment of one rehab centre for post injury including road trauma other than Gidakom	C	54 months	MOH
Introduce post trauma counseling services at the hospital services	C	54 months	DMS
Strengthen community rescue teams in road crash	B	36 months	RSTA/Traffic/MoH
Strengthen community based rehabilitation services to the victims of road traffic crashes	B	36 months	DOPH/DMS
Develop training curriculum and conduct training of drivers, RSTA inspectors, Police on First AID responses including CPR	A	Ongoing	DMS/RSTA

Table8: Strengthen traffic police management system

Activity	Activity label	Time required*	Agency responsible
Develop a strategy for enforcement that reflects risk behaviors associated with traffic crashes and other offences.	A	12 months	Traffic Police
Establish five traffic police units along with the RSTA Offices	B	36 months	Traffic Police
Assess human resource requirement for Traffic Police for road safety and traffic management at the national level and develop the HR policy	A	12 months	Traffic Police, RBP, MoHCA
Deployment of the required traffic police	B	24 months	RBP, MoHCA
Construction of Road Traffic Police Head Quarters in Thimphu	C		Traffic Police
Revise accident reporting forms and introduce computerized reporting system	A	12 months	Traffic Police/RSTA
Establish traffic control centre	A	24 months	Traffic Police

Table 9: Procurement and Installation of equipments

Items	Activity label	Time required*	Agency responsible
Procurement and installment of CCTVs in key locations	C	48 months	RSTA/MOIC/Thromde
Computers and accessories	C	54 months	Traffic Police
Alcohol testing devices and spares	C	48 months	RSTA/Traffic police
Reflector batons & search lights	B	36 months	RSTA/Traffic police
Speed guns/speed cameras	B	36 months	RSTA/Traffic police
Portable weighing scales for heavy vehicles	A	12 months	RSTA
Motor bikes	C	54 Months	RSTA/Traffic police
Vehicles for Traffic Police	B	24 months	RSTA/Traffic police
Rescue van	C	54 months	RSTA
Driving simulators for driving testing	C	54 months	RSTA
Communication sets	A	12 months	RSTA/Traffic police
Towing vehicle	C	54 months	Traffic police
River rafts	C	54 months	Traffic police
Ladders	C	54 months	Traffic police
Carriage van	C	54 months	Traffic police
Stretchers	C	54 months	Traffic police
Ambulance (ALS)	A	On-going	MoH
Spreader/cutter	C	54 months	RSTA/Traffic police

Table 10: Professional development in road safety

Activity	Activity label	Time required	Agency responsible
Traffic planners	C	48 months	RSTA MOIC
Traffic engineers	C	48 months	DOR/DUDES
Road Safety specialist	B	36 months	RSTA/DOR
Road Design specialist	C	48 months	DOR
Train existing traffic police and MVIs	B	36 months	RSTA/RBP
Injury epidemiologists	C	48 months	MOH
Trauma specialist	C	54 months	MOH
Training of Traffic and motor vehicle inspectors on crash investigation	B	24 months	RSTA/Traffic
Injury statistician	C	48 months	MOH

Table 11: Improving Road Safety Data base

Activity	Activity label	Time required*	Agency responsible
Establishment of trauma registry in all hospitals	B	36 months	MoH
Annual report based on the trauma registry	A	Ongoing	Traffic/RSTA/MoH
Revision of the existing road accident reporting system for RBP, RSTA and Health into a international standard reporting system	B	36 months	Traffic/RSTA/MoH
Publication of the annual road accidents and road safety reports	A	ongoing	RSTA/Traffic
Publication of the annual report and dissemination of transport infringement notice (TIN) data	A	ongoing	RSTA/Traffic
Introducing real time road conditions and accident information system (Through radio/sms)	C	54 months	DOR,MOWHS
Introduce hotline services for Road conditions	A	12 months	DOR,MOWHS
Recruitment and training of hotline and real time information management staff	A	18 months	DOR,MOWHS

Table 12: Operational research, surveillance, monitoring and evaluation system

Activity	Activity label	Time required*	Agency responsible
Appointment of M and E coordinator for Decade of Action For Road Safety at the RSTA	A	12 months	RSTA
National workshop of stakeholders to review the Indicators for the Decade Action Plan	B	36 months	RSTA /MoH
Develop SOPs and routine sobriety monitoring system for alcohol use during driving	A	12 months	Traffic Police
Develop SOPs and monitoring system for safer driving behaviors on use of seat belt, helmet, child restraint and use of mobile phones	A	12 months	RSTA/Traffic
Surveys on walk-ability index in major urban towns	C	54 months	MOH/Urban Planning
Impact analysis of Road Traffic Accidents	C	54 months	RSTA/Traffic/MoH
Causal studies for road accidents	B	36 months	MOH/RSTA/Traffic
Road Safety Audits (from planning to implementation stage)	B	36 months	RSTA/DoR
Epidemiologic analysis of burden of road traffic injuries and accidents (Baseline)	B	36 months	MOH
Socio-economic burden of the road traffic injuries and accidents (Baseline)	B	36 months	MOH
Epidemiologic analysis of burden of road traffic injuries and accidents (End line)		98 months	MOH

Table 13: Advocacy and Legislation measures:

Activity	Activity label	Time required*	Agency responsible
Review of legislation (RSTA Act/Regulations and propose amendments)	B	36 months	RSTA/MoIC
Develop evidence-based policy communication materials for advocacy of legislation changes	B	36 months	RSTA/MoIC
Authorize police to repudiate insurance claims (false claims, repeat offenders)	B	36 months	Traffic Police/Insurance Companies
Review permissibility of insurance claims in drink driving and unlawful driving behaviors	B	36 months	RSTA/ Insurance companies

Table 14: Road safety funding:

Activity	Activity label	Time required*	Agency responsible
Obtain approval for the minimum annual funding policy for road safety equivalent for cross sectoral response	B	36 months	MoIC/RSTA
Establish policies for retention of funds collected through the enforcement	A	12 months	MoIC/RSTA
Mobilization of the external donor funds	A	Ongoing	GNHC /MoIC

6. PROPOSED FINANCIAL RESOURCES

6.1 Funding for road safety initiative:

To implement the nationwide road safety program systematically, the strategy must be supported with sufficient fund and human resources. In the past, the financial commitment for the road safety initiatives was nominal. For instance RSTA received Nu. 500,000 as a budgetary support for road safety communication campaign in 2010. The traffic police hardly has any budget for the road safety activities. Both the agencies have limited budget for the duty vehicle fuel restricting the mobility to carry out enforcement duties. Similarly, the Ministry of Health also had no budgetary support for road safety activities in the past. On the other hand, the transport sector contributes substantial amount of revenue to the Government. In 2010, RSTA collected Nu. 173 million from the motor vehicle fees, taxes and penalty.

Adequate resources will be provided by the Government either through internal revenue or external donor supports to the implementing agencies.

To initiate the Decade of Action for Road Safety the Government will support through a minimum budgetary support mechanism and provide an annual budget support for cross-sectoral road safety programs from the government revenue.

The possible sources of funding for road safety are revenues generated from fees and penalties and other levies from insurance companies and vehicle dealers. It is also recommended that the revenue collected through fines and penalties to be retained by RSTA for carrying out the activities related to road safety. For instance in 2010-2011, RSTA has collected about Nu.17.63 million through fines and penalties only.

To institute the structural safety of roads, 10% of the annual road infrastructure budget should be allocated for road safety design and standards as per the international norms.

6.2 Cost of Road Traffic Crashes

There is no formal study on cost incurred due to road traffic crashes in the country. The national economic loss estimates due to road traffic crashes is anticipated to be high. In 2010 there were 615 hospital admissions out of which 94% (579) are in between 15 to 64 years, affecting the socio-economically productive group and indicating significant burden to health care system. The insurance reimbursement for the vehicle accident by the Royal Insurance Corporation of Bhutan in 2008 to 2010 shows increase from Nu 79.90 million, to Nu. 123 million to Nu. 139.84 millions

Considering indirect and other administrative costs such as police services, court proceedings RSTA investigations, rescue team and other health personnel services, the per-capita cost of road traffic crash is appears to be enormous.

6.3 Work plans and annual budgeting

The activities in the plan of action will be implemented by the respective agencies as a part of the annual work plan based on this Action Framework. The annual work plan will be guided by this action framework. The other stakeholders shall share a copy of annual work plan and budget related to road safety activities to RSTA for effective coordination and implementation.

In addition to the above the respective implementing agencies would also explore funding support from the donors and other partners.

7. PARTNERSHIP, COORDINATION ACCOUNTABILITY FRAMEWORK

The central coordination and administration of road safety is one of the most significant factors in optimizing the road safety efforts and their effectiveness within any country.⁷ Given the wide range of sectors that can influence road safety it is essential that activities are coordinated and harmonized to achieve maximum impact. Where a country lacks an effective coordinating body, the road safety activities tend to be fragmented and under-funded and thus very ineffective. The RSTA will act as the lead coordinating agency for coordinating and implementing the activities proposed under this report.

Suggested responsibilities of the stakeholders who would be involved in promoting road safety in Bhutan are outlined below. This will however be subject to review and changes based on circumstances and needs.

7.2 Ministry of Information and Communications

7.2.1 Road Safety and Transport Authority

The Road Safety and Transport Authority will coordinate the activities under this action plan with the stakeholders.

In particular, the RSTA will:

- Ensure that the safety standards are built in the road transport management system
- Coordinate the national response to improve road safety and ensure that the Decade of Action For Road Safety is implemented in harmony with the key stakeholders
- Develop and supervise regulations related to road safety
- Ensure safer behaviors of the road users, safer vehicles, and promote safer road engineering and design for road safety by implementing pragmatic programs
- Provide efficient, affordable and safe public transportation system
- Monitor motor vehicle road worthiness inspection regime
- Conduct driving test and issue driver licensing
- Conduct pre-departure inspection of passenger buses
- Set driving training standards and monitor driving schools
- Monitor professional/ refresher driving courses
- Set standards for road traffics signs, signals and markings

⁷ ADB Road Safety International Guidelines,3.1.1.2

- Conduct road safety audits
- Conduct road safety research including costing of road crashes

7.3 Traffic Police – Royal Bhutan Police

The traffic police of the Royal Bhutan Police will be one of the lead agencies to enforce road safety and traffic laws. Enforce and implement road traffic laws

- To promote road traffic safety
- To investigate road crashes & accident
- To maintain unhindered flow of vehicular traffic and pedestrians
- To regulate and control traffic during emergencies and natural disasters
- To monitor, regulate and enforce traffic safety strategies in coordination with responsible stake holders
- Awareness and education campaign in collaboration with the RSTA
- Conduct road safety program evaluation

7.4 City Corporation/Thromdeys:

The City Corporation offices will ensure road safety standards in the urban setting by following the friendly urban designs, proper road designs, signage, road markings, roundabouts, and fly-over's. The City Corporation will promote proper pedestrian friendly environment and ensure greater walkability. The City corporations will ensure proper parking and stop points for buses and taxis.

- Urban Planning & designing
- Proper Road Construction and designing within the city
- Planning of parking , road marking, signboards, roundabout, flyover,
- Building and constructions approvals.
- Public Transport services
- Parking fees management
- Maintenance of roads, footpaths for pedestrians Street lightings, Bus stops & taxi stands

7.5 Ministry of Works and Human Settlements

7.5.1 Department of Roads:

Reinforce and implement the road safety standards:

- Road improvement works- widening of carriage width, geometric improvement

- Road signages at critical locations
- Center line markings for roads
- Erection of crash barriers
- Delineators/reflectors on road edges, on bridge points etc.
- Road precautionary signs- slippery area, foggy area, speed limit, loads capacity on culvert/bridges etc.
- Road side drain (L-shape)
- De-icing on high altitude
- Road construction as per Environment Friendly Road Construction(EFRC) method

7.5.2 Department of Urban Development and Engineering Services (DUDES)

The DUDES will focus on design and maintenance of standards of urban roads, urban land use planning, pedestrian facilities, parking spaces and street lighting. In addition DUDES will also monitor the implementation these standards and plans.

7.6 Ministry of Education:

The Ministry of Education has great strength in reaching the school children directly to promote road safety and also to build future pool of advocates for road safety in the communities. MoE will promote safety of the school children on road travel, walking to and from homes and schools, road safety by role modeling youth participation. The Ministry will intensify implementation of school safety concept by including the road safety in the daily school management system. Specific areas of interventions for road safety are:

- Integration of road safety awareness programs in schools to reach school children and teachers
- Incorporate road safety lessons into school safety system through curricular and extra-curricular mechanisms
- Promote safer travel plan to schools such as training, class education for road safety, mode of travel,
- Promote road safety for school children through appropriate media communication
- Schools take leadership to link road safety education for parents through school parent education program (SPEA)
- Schools develop youth programs to participate in road safety initiatives

- Develop structural standard for safer road and safe school environment and incorporate in the school construction projects
- Carry out structural re-adaptation for unsafe schools particularly in urban settings

7.8 Ministry of Health

The role of the Ministry of Health has an immediate role to retrieve and treat the injured people at the site of the road crash and prevent complications due to road traffic injuries. The Department of Medical Services of the MOH would focus on the trauma management services, prevention of disability and enhancement of quality of trauma services. The Department of Public Health Services will bring about the visibility of issues of road safety by partnering with the stakeholders and build local evidence for road safety through program evaluation, operational research and engaging in public education for prevention of road crashes. MoH will:

- Enhance responses to road crashes
- Strengthen trauma registry system in the hospitals
- Strengthen provision of trauma care services by strengthening the existing health care system
- Contribute to local road safety evidence by conducting research, evaluation related road safety interventions
- Participate in evaluating the public awareness campaigns for road safety
- Lobby for additional resources and funds for road safety interventions from the Government and International Partners
- Provide technical support for other partners in designing and developing a public health response for road safety promotion

7.9 Insurance companies

Insurance companies have realized their role in promotion of road safety through the direct engagement or through insurance payment measures. The specific measures for road safety:

- Support public awareness on road safety and related insurance entitlements through public education, pamphlets, talk shows, banners, in collaboration with related agencies like RSTA and Traffic Police.
- Introduce reduction or non-payment of insurance claims for drunk and rash drivers and drivers who do not comply with rules.
- Initiate different insurance rates/imposing higher deductibles for repeated offenders.(incorporated within the policy contract document

8. EVALUATION OF THE DECADE OF ACTION FOR ROAD SAFETY

To assess the progress and performance for Decade of Action For Road Safety in the country, multiple evaluations must be conducted. These evaluations will monitor the achievement of the programs, identify strengths and weaknesses of the national response and provide recommendations to adjust the activities and approaches wherever required. The details of evaluation type and time frame for the Decade of Action for Road Safety are shown in the table.

Types of evaluation:

Internal Evaluation: The evaluation will be carried out by the team(s) of independent national evaluators coordinated by RSTA.

External Evaluation: A team(s) of international experts will be assigned by the RSTA in consultation with MoH to assess the progress of the commitment of Decade of Action for Road Safety. It is expected that relevant UN partners and donors will participate in the review.

Joint Evaluation: Evaluation will be carried out by national and international teams to assess the mid decade progress.

Final evaluation: This is the end line assessment of the Decade of Action for Road Safety. There will be a joint evaluation of national and international teams. This evaluation will provide evidence of what has worked and what has not. The evidence will be used for next decade programming for road safety.

Table A: Evaluation framework

Number of Evaluation	Time line	Type of evaluation and Agency
First evaluation on the implementation of action plan	36 months	Internal (RSTA to identify independent national evaluator and coordinate the evaluation)
Second evaluation	54 months	External (RSTA to identify a external Neutral Agency)
Mid Decade Evaluation	66 months	Joint evaluation (RSTA to identify a National and International team for evaluation)
Final evaluation	98 months	Joint evaluation (RSTA To identify a national and international team for evaluation)

8.1 INDICATORS FOR DECADE OF ACTION FOR ROAD SAFETY

The Decade of Action for Road Safety will be monitored against series of indicators at various levels. The impact of the Decade of Action for Road Safety is to reduce the morbidity and mortality due to road traffic crashes. The key outcome indicators are levels of unsafe behaviors for road safety. The key output indicators will be contributed by multiple process indicators. The following tables present the details of the indicator framework for the Decade of Action For Road Safety.

Table B: Key indicator targets

Impact	Areas	Indicator	2010	2020
Overall outcomes				
	Deaths	Per 10,000 vehicles	15	7-8
	Crashes	No of Vehicle crashes per 10,000 registered vehicles	236	118
	Injuries due to road crash	No. of people injured in road crash	611	15-20% reduction
Improve the level of safe driving behaviors among road users	Speed	Drivers reporting compliance to the speed limits signs (%)	0	85%
	Alcohol	Percentage of people driving with alcohol	7%	Less than or maintained 4%
	Restraints	Vehicle occupants wearing seat belt Child restraints under 15 years (Say Under 8)	0 0	Front (50%) Back (50%)
	Phones	Percentage of Drivers not using mobile phones while driving	0	(75%)
Immediate		Reduction in drink-driving (excess of 0.08 mg/dl) for private	-	By 90 % of the baseline

		vehicles		
		For professional driving license holders	-	100%
		Number of unlicensed driving	-	80%
		Percentage of drivers complying with vehicle load limits	0	90%
Others	Resources	Increase in availability of appropriate human resources as proposed to implement the plan of action	0	80%
		Availability or allocation of required financial resources as proposed to implement the plan of action	0	75%

Table C: Decade of Action Plan –Indicator framework by specific objectives

Objectives and targets	Indicators for monitoring progress
Objective One: Improve the level of unsafe behaviors among road users	
1. 85% of drivers reporting compliance to the speed limits signs	% of drivers reported as over speed offenders
2. 50 % of Vehicle occupants wearing seat belt and 50 % child restraints	% of drivers and occupants wearing seat belts
3. Reduce use of mobile phones while driving by 75 %	% of drivers using mobile phones
4. Zero tolerance for commercial vehicle drivers consuming alcohol and other drivers to comply strictly with the permitted level.	Number of deaths and crashes due to road traffic crashes resulting from drink driving.
5. 90 % compliance by drivers on permitted load limits	Percentage of drivers complying with permitted carrying capacity limit regulations
Objective Two: Improve road engineering and vehicle safety	

Integrate road safety in all stages of road development including improvement of hazardous locations and road safety audit.	Number of road safety audits undertaken. Meters of crash barriers installed.
	Number of revised standards for road design
	Number of standards and planning guidelines for quality assurance for road safety developed
	Number of Road safety audit manual and tool kits developed
	Length of pedestrian friendly paths built in urban areas
Objective Three: Improve post crash responses and medical management in traffic crashes	
Increase coverage of emergency services to cover urban settings and primary high ways	Number of trauma and rehab centers set up
Establish at least one rehab centre for post injury including road trauma other than Gidakom	Introduce post trauma counseling services in all the hospitals
	Number of health staff trained in trauma management
Establish coordination mechanism for search and rescue	Number of post trauma counseling centers established
Objective Four: Build greater evidence and scientific information on road safety system	
Establish road safety and road crash reporting system in key agencies	Number of Reports of the Impact analysis of Road Traffic Accidents
undertake at least one road safety research annually	Number of Reports of the causal studies for road accidents
	Number of Reports of the scheduled evaluations
	Number of Reports of Road safety Audits
	Number of Reports of the epidemiologic analysis of burden of road traffic injuries (Baseline and end line)
	Number of Reports of socio-economic burden of road traffic injuries

undertake at least two program evaluations every three years	Number of evaluation reports
Objective Five : Make road safety a national priority	
Create road safety policy/strategy, designate a lead agency and implement the plan of action by 2011	Number of road safety advocacy policies developed
	Documents of road safety policy/strategy and plan of action developed
Implement minimum annual funding and human resource policy for road safety	Amount of fund allocated and additional human resources provided.
	Number of road safety equipment procured
	Amount of private sector and donor contribution

Table D: Indicator description

Areas of focus	Indicator definition	Sources of data	Method of measurement	Frequency
Impact	Hospitalization rate due to road traffic injuries per 100,000 persons	Trauma registries and health facility data	Analysis of the hospital and health facility data	Annual
	Hospitalization rate due to road traffic injuries per 100,000 persons	Trauma registries and health facility data	Analysis of the hospital and health facility data	Annual
	Deaths due to road traffic injuries per 100,000 persons	Trauma registry of hospitals and Police records	Analysis of trauma registries, health facility data and police records	Annual
	Deaths due to road traffic injuries per 10,000 registered	Trauma registry of hospitals and Police records	Analysis of trauma registries, health facility data and	Annual

	vehicles		police records	
	Vehicle crashes per 10,000 registered vehicles	Police records from all the divisions in the country	Analysis of police records	Annual
Resource allocation	Amount of expenditure incurred on road safety program implementation apart from human resource pays through national and international sources of funding	Review of the annual work plan and progress reports of the stakeholders	Actual expenditures for road safety related programs in each stakeholder	Annual
Education and awareness	Drivers aware of the rules and policies on speed limit, seat belt, child restraint, helmet and use of mobile phones during driving	KABP Survey Report	KABP surveys	Two surveys: Baseline, and end line
Safer driving practices	Number of drivers using alcohol above the permissible limits while driving	Police reports (TIN)	All the divisions of Police will provide monitoring reports	Annual
	Number of unlicensed driving encounter	Police reports (TIN)	All the divisions of Police will provide monitoring reports	Annual
	Number of vehicles complying with the carrying capacity allowances for passenger	RSTA reports	RSTA offices will provide monitoring reports	Annual

	vehicles			
	Number of commercial carriage vehicles not complying with the loading limits	RSTA reports	RSTA offices will provide monitoring reports	Annual
Enforcement and legislation	Number of laws legislated for road safety promotion after the launch of the Decade of Action 2011-2010	Resolutions of the parliament sessions	Review of the parliament resolutions	Annual
	Number of policies and rules framed for road safety promotion after the launch of the Decade of Action 2011-2010	Reports of the stakeholders,	Review of the reports from the stakeholders	Annual
Research and evaluation	Number of scientific researches on road safety promotion in Bhutan	Reports	Collect reports from the stakeholders	Annual
	Number of program evaluations conducted	Reports	Collect reports from the stakeholders	Annual
	Number of research publications in peer reviewed journals	Journals	Online search	Annual

DOCUMENTS CONSULTED:

1. Road Safety and Transport Act of Bhutan , 1999
2. Form 1- Number of vehicles checked by Royal Bhutan Police 2011
3. Development Partnership Program For South Asia, December 2010
4. Bhutan Transport 2040 Integrated Strategic Vision (Draft)
5. Annual Report Financial Year 2008-09, RSTA (August 2009)
6. National Road Safety Strategy for 2011-2020, Australia (December 1, 2010)
7. National Road safety Action Plan 2009-2010, Australian Transport Council
8. Road Safety to 2010, New Zealand
9. Over view of Current Road Safety Situation, Malaysia, Mohamad, Nizam Mustafa, High Way Planning Unit, Road Safety Section, Ministry of Work, Jalan Sultan Salahuddin, 50580 KL, Malaysia
10. Decade of Action For Road safety 2011-2020, WHO

Annexure

Annexure 1: List of stakeholders consulted

- Ministry of Information and Communications
- Road Safety And Transport Authority
- Royal Bhutan Police (Traffic division)
- Department of Roads (MOWHS)
- Department of Urban Development and Engineering Services
- Department of Youth and Sports (MOE)
- City Corporation (Thimphu)
- Royal Institute of Health Sciences
- Department of Medical Services
- Department of Public Health
- Royal Insurance Corporation of Bhutan
- Department of trade (MOEA)

Annexure 2: Core drafting members for the Decade of Action for Road Safety (2011-2020)

1. Dr. Gampo Dorji, Acting Chief Program Officer, DPH, MoH
2. Mr. Sonam Dendup, Senior Planning Officer, PPD, MOIC
3. Mr. Karma Pemba, Chief Registration and Licensing Officer, RSTA
4. Major Passang Dorji, Superintendent, Traffic Division, RBP
5. Ms. Karma Doma, Senior Program Officer, DPH, MoH
6. Mr. Thinley Namgyel, Chief Engineer, TMD,RSTA
7. Mr. Wangchuk Namgyel, General Manager General RICBL
8. Mr. Tsheten Dorji, Executive Engineer, DOR



**The Decade of Action for Road Safety (2011-2020),
will take a balanced approach for road safety
promotion and management on Five Es:
Education, Enforcement, Engineering and design of roads,
Emergency and post crash response, and
Evaluation of the program.**