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ROAD SAFETY MEASURES IN BANGLADESH

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DECLARATION

I hereby declare that the work reported in this thesis has been performed group VIII and this thesis or any part of it has not been submitted elsewhere for any award of degree of Bachelor of Science in Engineering or for any Diploma.

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ABSTRACT

Being a riverine country, the road transportation system is vitally important to the economic and social welfare of Bangladesh. Therefore, it must be so maintained and continually improved with due consideration for safety, minimizing accident hazards and risks. However, terrible losses of lives and injuries with consequent property damages resulting from road traffic accidents have now emerged as serious issues in Bangladesh affecting the community personally, socially and economically. The road safety situation is very severe by international standard. An overview of the prevailing accident problem characteristics and some road safety priorities that should be addressed with due urgency are briefly discussed in the paper. Some recent advances in promoting road safety activities including holding of international conference, national workshops and the observance of the UN first global road safety week are also discussed. The way forward to activate and strengthen efforts towards greater safety is highlighted as well.This paper presents a brief overview of the status of the road safety problems in Bangladesh by highlighting the scale and characteristics of road traffic accidents. It also discusses some initiatives taken by the government of Bangladesh in an effort to address road safety challenges. Most recent advances made in this regard are also highlighted.The problem resulting from road traffic accidents, injuries and property lose is an emerging,challenging and one of the major concerning issues in Bangladesh like many other developing countries in the world. To counteract this problem, road safety research has proven beneficial in documenting the road accident problem, appraising the current situation in terms of priorities and problem areas and has provided the means to develop and evaluate countermeasures. In respect to the magnitude of the problems, the safety initiatives are at a very infant level and the progresses in very slow for the causes of enormous constraints at different levels in Bangladesh. Indeed, the allocation for road safety research and intervention is very low in comparison to other diseases and disasters. In this paper, the authors briefly reviewed some major road safety initiatives in Bangladesh. The key issues of this paper is to evaluate the road safety research constraints in Bangladesh and future requirements for developing research based scientific, pragmatic and cost effective counter measures to improve the carnage on road. At the very outset of the paper, the scale and magnitude of road safety problems in Bangladesh has also been highlighted

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ABBREVIATIONS

ALG	Advanced Logistics Group
BRTA	Bangladesh Road Transport Authority
BRTC	Bangladesh Road Transportation Corporation
DCC	Dhaka City Corporation
DHUTS	Dhaka Urban Transport Development Study
DITS	Dhaka Integrated Transport Study
DTCA	Dhaka Transport Co-Ordination Authority
DTCA	Dhaka Transport Co-Ordination Board
JICA	Japanese International Cooperation Agency
JBIC	Japan Bank for International CO-Operation
NMV	Non Motorized Vehicle
STP	Strategic Transport Plan

CHAPTER 1

INTRODUCTION

1.1 General

Road transportation is the major mode of transport in Bangladesh. Over 70 percent of passenger travel and much of our goods movement occur over the highways. There is no doubt that road transportation is vitally important to our economic and social welfare and
must be so maintained and continually improved with due consideration for safety, minimizing accident hazards and risks. However, each year thousands of people are killed and injured on our roads. These terrible losses of lives and injuries affect us personally, socially and economically. The Government of Bangladesh is greatly concerned about the growing road safety problems and is committed to fight against such trauma on our roads. As a part of Government's significant initiatives numerous pragmatic programs have been taken to ensure safer transportation. Efforts are underway for integrating different organizations both at public and private sectors, civil societies, communities and individuals towards identifying their specific roles and responsibilities and thereby developing effective measures to tackle road safety problems. This paper forms part of the road safety research and investigation works being carried out at the Accident Research Centre (ARC), BUET and is an extension of the paper by Hoque et al, (2005). It briefly summarizes the striking accident problem characteristics and priority road safety issues. The paper in particular highlights some of the advances made in regard to raise awareness and commitment in organizing road safety activities, professional capacity building and improved road user behavior. The way forward to activate and strengthen efforts towards greater road safety in Bangladesh is also discussed.

1.2 Background of study

According to the official statistics, there were at least 3334 fatalities and 3740 injuries in 4114 reported road accidents in 2003. It is estimated that the actual fatalities could well be 10000- 12000 each year. The statistics revealed that Bangladesh has one of the highest fatality rates in road accidents. About 70 percent of road accident fatalities occurred in rural areas including rural sections of national highways. The following are the striking accident problem characteristics in Bangladesh as revealed from the accident research studies. Pedestrians-The Most Vulnerable Road User Group: In Bangladesh, with alow level of motorization (around six, registered vehicles including motorcycle), the role of walk mode is quite significant. Up to 62 percent of urban road accident deaths are pedestrians alone and in Dhaka city they represented nearly 70 percent. Pedestrians need protection in the form of facilities by ensuring their legitimacy, safety and convenience. Predominant Accident Types: Accident type analysis showed 'hit pedestrian' as the dominant accident type both in urban and rural areas, 45 percent involvement in fatal accidents. Other common accident types are: rear end collision (16.5%), head on collision (13.2%) and overturning (9.3%). These four accident types account for nearly 85 percent of the fatal accidents. Accidents on National Highways: Of the total reported accidents nearly 37 percent occurred on national highways. Almost 30 percent of total accidents on
national highways are occurring only in 4 percent of total kilo . Hazards associated with roads and roadsides were particularly predominant. Studies are underway at the Accident Research Centre for identification and treatments of hazardous road locations using standard definitions, criteria and methods together with field observations so that cost effective countermeasures particularly the low cost countermeasures can be devised for highway safety improvement. Nature of Accident Occurrence: The distribution of accidents occurrence on road network was characterized as 'clustering' at few sites, demonstrating that accidents area men able to site specific treatments through wide spread implementation of cost effective countermeasures, low-cost road environmental improvements in particular Over Involvement of Trucks and Buses: Studies of road accidents revealed that heavy vehicles such as trucks and buses including minibuses are major contributors to road accidents. This group of vehicles is particularly over involved in pedestrian accidents accounting for about 79 percent (trucks 37%, buses 20% and minibuses Involvement of Children in Road Accidents: Nationwide road accidents statistics in Bangladesh revealed a serious threat to the children. The incidence of overall child involvement in road accident fatalities in Bangladesh is found to be very high, accounting for about 22 percent. This involvement of children less than 15 years of age in road accident fatalities is much higher than those in other developing countries.

1.3 Objective of study

The specific objectives of the study are started below:

1. To identify road service characteristics in Dhaka City.
2. To perform a questionnaire survey for identifying road service quality in Dhaka City.
3. To suggest some improvement options of roads according to better road safety.

1.4 Scope of the study

The scope of this study is to describe details information about Road Safety. Road condition of Bangladesh is not so good. Accident rates of Bangladesh increased day by day. Many people has been died and injured by road accident.

CHAPTER 2

LITERATURE REVIEW

2.1 General

Road traffic safety refers to methods and measures for reducing the risk of a person using the road network being killed or seriously injured. The users of a road include pedestrians, cyclists, motorists, their passengers, and passengers of on-road public transport, mainly buses and trams

2.2 How accidents Happen

A loaded open pick-up truck had around 60 to 70 passengers mostly school children on board lost control and fell into a ditch. Most common accident types are Hit pedestrian (43.7%), Rear end collisions (16.4%), Head on collisions (13.3%), Overturning (9.4%).
These four accident types account for nearly 83 % of the accidents



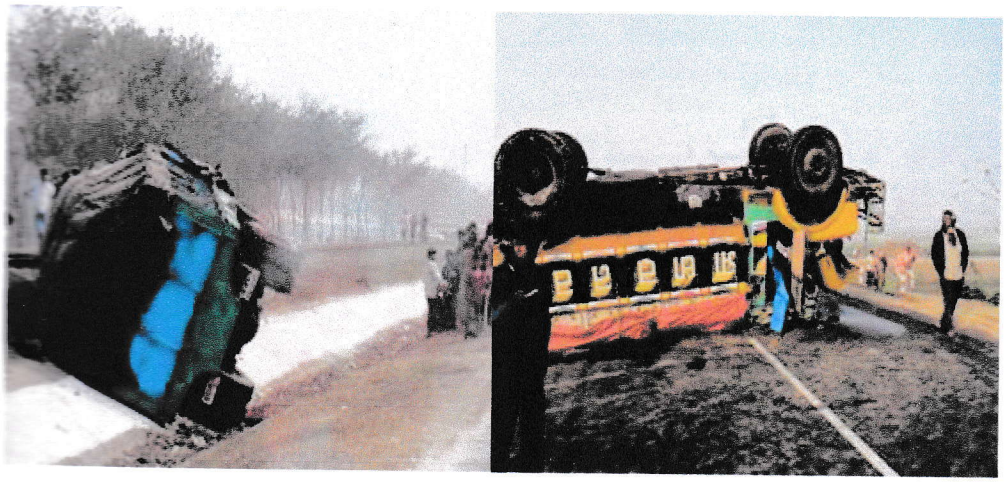


Figure-1: Some accidental face of Track

2.3 Some News On Road Accident:



সিলেটের বালাগঞ্জে ঢাকা-সিলেট মহাসড়কে গতকাল ভোরে ট্রাকের সঙ্গে মুখোমুখি সংঘর্ষে দুমড়েমুচড়ে যাওয়া গ্রিনলাইন পরিবহনের যাত্রীবাহী বাস ● ছবি : প্রথম আলো

সড়কে মৃত্যুর মিছিল

সিলেটে আ.লীগ নেতাসহ আট, ঢাকায় দুই সাংবাদিক ও গাইবান্ধায় পাঁচজন নিহত

নিজস্ব প্রতিবেদক


বিভাস চন্দ্র সাহা


শহীদুজ্জামান

ভোরে সিলেটের বালাগঞ্জে বাস-ট্রাকের মুখোমুখি সংঘর্ষে একজন মুক্তিযোদ্ধা, রাজনীতিবিদসহ আটজনের মৃত্যু। এর আগে গাইবান্ধায় ট্রাকচাপায় পাঁচজন মারা গেছেন। দুপুরে ঢাকায় বাসচাপায় প্রাণ হারান বরিশালের এক আলোকচিত্র সাংবাদিক। পাঁচ ঘণ্টা পর আবারও বাসচাপা ঢাকায়। এবার প্রাণ হারালেন একজন জ্যেষ্ঠ সাংবাদিক।

গতকাল শুক্রবার ছুটির দিনটা শুরু হয়েছিল সড়ক দুর্ঘটনার প্রাণহানি দিয়ে। দিন শেষে মৃত্যুর হিসাবটা হলো ১৫। এভাবে সড়ক দুর্ঘটনায় প্রতিদিন হারিয়ে যায় বাংলাদেশের সম্ভাবনাগুলো। ঘটনার পর শোক প্রকাশ করে দায়িত্ব শেষ করেন রাজনীতিবিদ ও মন্ত্রীরা। কিন্তু সড়ক দুর্ঘটনা বন্ধে কিংবা দায়ী গাড়িচালকের বিরুদ্ধে কার্যকর কোনো ব্যবস্থা নেওয়া হয় না।

গতকাল দুপুরে ঢাকায় সড়ক দুর্ঘটনায় প্রাণ হারান বরিশালের মতকণ্ঠ পত্রিকার আলোকচিত্রী শহীদুজ্জামান। বিকেলে মারা যান ইংরেজি দৈনিক ইনডিপেনডেন্ট-এর জ্যেষ্ঠ সাংবাদিক বিভাস চন্দ্র সাহা (৪৭)।

ঘটনাস্থল ধানমন্ডি : সন্ধ্যা সাড়ে ছয়টা। রাস্তায় তখন পড়ে রয়েছে চ্যাপ্টা হয়ে যাওয়া হেলমেটের ভাঙা প্লাস্টিক আর কালচে রক্ত। কিছুক্ষণ আগেই সরিয়ে নেওয়া হয়েছে উপুড় হয়ে পড়ে থাকা বিভাসের দেহটা। মোটরসাইকেলে ধানমন্ডির বেল টাওয়ারের অফিসে যাচ্ছিলেন বিভাস। পেছন থেকে বাক্কা মেরে ফেলে চাপা দিয়ে চলে যান ঘাতক বাসচালক। মোহাম্মদপুর-নারায়ণগঞ্জ পথে চলাচলকারী মৈত্রী পরিবহনের বাসটি আটক করা হলেও

এরপর পৃষ্ঠা ২ কলাম ৪

● সিলেটে বাস-ট্রাক সংঘর্ষে নিহত ৮, গাইবান্ধায় ট্রাকচাপায় ৫ জনের মৃত্যু : শেষের পাতায়



মিটফোর্ড হাসপাতালের মর্গে পাশাপাশি রাখা কফিন। সেই কফিনের একটিতে হাত রেখে নির্বাক এক স্বজন। গতকাল কেরানীগঞ্জে যাত্রীবাহী বাস-মাইক্রোবাসের মুখোমুখি সংঘর্ষে প্রাণ হারান একই পরিবারের নয়জনসহ ১২ জন ● ছবি : প্রথম আলো

বাস-মাইক্রোবাস সংঘর্ষ

একই পরিবারের ৯ জনসহ ঝরে গেল ১২ প্রাণ

নিজস্ব প্রতিবেদক ও কেরানীগঞ্জ প্রতিনিধি

রাজধানীর অদূরে কেরানীগঞ্জের কদমপুর এলাকায় ঢাকা-মাওয়া মহাসড়কে বাস ও মাইক্রোবাসের মুখোমুখি সংঘর্ষে ১২ জন নিহত হয়েছেন। গতকাল বুধবার সকাল সাড়ে ছয়টার দিকে এ দুর্ঘটনা ঘটে।

নিহত ব্যক্তিদের সবাই মাইক্রোবাসের যাত্রী। তাঁদের মধ্যে নয়জন শরীয়তপুরের ভেদরগঞ্জ উপজেলার আরশিনগর ইউনিয়ন পরিষদের চেয়ারম্যান জাকির সর্দারের পরিবারের সদস্য ও আত্মীয়। বাকি দুজন গৃহকর্মী ও একজন গাড়িচালক। নিহত যাত্রীরা হলেন: ইউপি চেয়ারম্যান জাকির সর্দারের স্ত্রী বেবী সর্দার (৪৪), মেয়ে নবম শ্রেণীর ছাত্রী দিপরখা আক্তার (১৩), জাকিরের বড় বোন ফেরদৌসী বেগম (৪৭) ও তাঁর ছেলে সায়েম হাসান (১৫), জাকিরের ছোট বোন রোকিন (৩৩) ও তাঁর স্বামী সাউথইস্ট ব্যাংক মতিঝিল শাখার কর্মকর্তা রেজাউল আমিন (৩৮), তাঁদের ছেলে ইয়াশ (৮) ও মেয়ে ইশরা (২), জাকিরের মেজো বোন ফাতেমার মেয়ে

এরপর পৃষ্ঠা ২ কলাম ৬

● ছুটি কাটাতে যাওয়ার পথে জীবন থেকেই ছুটি : পৃষ্ঠা-২

Figure-2: Accident news

মাতুয়াইলে বাস কেড়ে নিল মা-ছেলের প্রাণ

নিজস্ব প্রতিবেদক



রেবেকা ইয়াছমিন



রিফাত মাহমুদ

ছেলে রিফাত মাহমুদকে (১২) নিয়ে স্কুলে যাওয়া হলো না রেবেকা ইয়াছমিনের (৪০)। রাজধানীর মাতুয়াইলে ঢাকা-চট্টগ্রাম মহাসড়ক (বিশ্বরোড) পার হওয়ার সময় বেপরোয়া গতির বাস কেড়ে নিয়েছে এই মা-ছেলের প্রাণ। গতকাল মঙ্গলবার বেলা ১১টার দিকে মাতুয়াইলে মা ও শিশু স্বাস্থ্য ইনস্টিটিউটের সামনে মর্মান্তিক এ ঘটনা ঘটে।

রিফাত মাতুয়াইলের শামসুল হক স্কুল অ্যান্ড কলেজের চতুর্থ শ্রেণীর ছাত্র ছিল।

পুলিশ ও স্থানীয় সূত্র জানায়, রিফাতদের বাসা মা ও শিশু স্বাস্থ্য ইনস্টিটিউটের কাছে তুষারধারা আবাসিক এলাকায়। তার স্কুল মহাসড়ক পেরিয়ে কিছুটা দূরে। বেলা ১১টার দিকে রেবেকা ছেলেকে স্কুলে নিয়ে যাওয়ার জন্য মহাসড়ক পার হচ্ছিলেন। রিফাত ছিল কিছুটা সামনে। এ সময় বেপরোয়া গতির একটি বাস পেছন থেকে তাকে সজোরে ধাক্কা দেয়। এতে সে সামনে ছিটকে পড়ে ওই বাসের চাকায় পিষ্ট হয়। রেবেকা ছেলের কাছে যাওয়ার চেষ্টা করলে বাসটি তাঁকেও চাপা দিয়ে পালিয়ে যায়। ঘটনাস্থলেই মা-ছেলে মৃত্যু হয়। খবর পেয়ে যাত্রাবাড়ী থানার পুলিশ দুর্ঘটনাস্থলে আসে এবং নিহত রেবেকার সঙ্গে থাকা মুঠোফোন থেকে তাঁর স্বামীকে ফোন করে মৃত্যুর খবর জানায়। রেবেকার স্বামী সেনাবাহিনীর সাবেক সার্জেন্ট মনছুর আলী খান ঘটনাস্থলে ছুটে এসে স্ত্রী-সন্তানের মরদেহ দেখে কান্নায় ভেঙে পড়েন।

মনছুর কাঁদতে কাঁদতে বলেন, 'সোমবার আমার জ্বর ছিল। স্ত্রী অনেক সেবা করেছে। ছোট ছেলে রিফাত আমার জন্য শরবত বানিয়েছে। রাতে তার সঙ্গে বাসায় ক্রিকেট খেলেছি। ছেলে হারালাম, স্ত্রী হারালাম। আমার সবকিছু শেষ হয়ে গেছে। আমার আর কিছুই নেই।' কিছুক্ষণ পর তিনি বলেন,

এরপর পৃষ্ঠা ২ কলাম ৭

Figure-3: Accident news



রাজধানীর রমনায় সড়ক ভবনের সামনে গতকাল মিনিবাসের সামনের বাম্পারে আটকে যায় আরোহীসহ একটি মোটরসাইকেল। এতে ঘটনাস্থলেই আরোহীর মৃত্যু হয় ● ছবি : প্রথম আলো

Figure-4: Accident news

মর্মান্তিক





নিহত হামিম

বাইরে কেবল কোমল দুটি পা। তবুও এই দৃশ্য সহ্য করা কঠিন। হামিমের কোমল পা শক্ত লাথি কষুক আমাদের বোধে



নিজের স্কুলের সামনে রাস্তায় পড়ে আছে শিশু হামিমের নিথর দেহ। ডানে ঘাতক বাসের চালক ● ছবি : প্রথম আলো

Figure-5: Accident news

স্কুলের সামনে বেপরোয়া বাস কেড়ে নিল শিশুর প্রাণ

বিশেষ প্রতিনিধি

নাম-হামিম শেখ, শ্রেণী-কেজি, রোল-৬২, শাখা-খ, বাংলা মাধ্যম। কার্টুন আঁকা স্কুল-ব্যাগটির ওপর এভাবেই কাঁচা হাতে লেখা পরিচয়। ভেতরে বই-খাতা, শ্রেণীশিক্ষকের লেখা দিনের কাজ, টিফিন বক্স, পানির বোতল—সবই আছে। নেই শুধু ব্যাগ কাঁধে করে বাড়ি ফেরা শিশু হামিম। স্কুলের সামনেই ঘাতক বাস তার প্রাণ কেড়ে নিয়েছে। এ ব্যাগটিই এখন সবার স্মৃতি।

স্কুল-ব্যাগের দিকে তাকাতেই ফৌজি পোশাক পরা অধ্যক্ষের চোখ ভিজে আসে। চোখ মুছতে মুছতে বললেন, জীবনের জন্য তার ছুটি হয়েছে। আর কোনো দিনই সে স্কুলে আসবে না।

গতকাল বুধবার বেলা ১১টায় কাকরাইলে উইলস লিটল ফ্লাওয়ার স্কুলের সামনের সড়কে মধুমতি পরিবহনের একটি বাসের চাপায় ঘটনাস্থলেই প্রাণ হারায় হামিম শেখ। বয়স ছয় বছর। এ ঘটনায় তার মা সেলিনা শেখ চোখে গুরুতর আঘাত পান। ঢাকা মেডিকেল কলেজ হাসপাতাল থেকে তাঁকে ইসলামিয়া চক্ষু হাসপাতালে নেওয়া হয়েছে। পুলিশ চালকসহ বাসটি আটক করেছে।

স্কুলের সামনেই ছাত্রকে গাড়ি চাপা পড়তে দেখে ফোভে ফেটে পড়ে ছোট ছোট শিশু ও তাদের অভিভাবকেরা। তারা রাস্তায় বেরিয়ে

এরপর পৃষ্ঠা ১৯ কলাম ৩

আরও ছবি : পৃষ্ঠা ৩



ঘাতক বাস থেকে নিজেকেও রক্ষা করতে পারেননি হামিমের মা ● ছবি : প্রথম আলো

'রক্তে ধুয়ে গেল সব স্বপ্ন'

উদিসা ইসলাম

'আমি বাড়ি না ফিরলে তো সে ঘুমায় না, এহন একা ঘুমাইসে ক্যান? বাজানরে...ঘুমায়ও না মানিক।' প্রাণহীন হামিমের শরীরে হাত বুলিয়ে বাবা একনাগাড়ে চিৎকার দিয়ে ডেকেও ছেলের ঘুম ভাঙাতে পারেন না। আবারও বলতে থাকেন, 'আদরের ধন, তোমারে না দেখলে মা ভাত খাবে না। ওঠো, চলো মার কাছে যাই।' একমাত্র শিশুসন্তানের লাশ বুকে নিয়ে বাবার এই আর্তচিৎকারে স্তব্ধ হয়ে যায় চারদিক।

ঢাকা মেডিকেলের মর্গের সামনে তখন মানুষের ভিড়। কেউ জানে না, ঠিক কোন কথাটা এখন হামিমের বাবাকে একটু সান্ত্বনা দেবে। ঘাতক বাসের আঘাতে গুরুতর আহত স্ত্রী হাসপাতালে আর কাফনে ঢাকা ছয় বছরের ছেলের লাশ যার সামনে, তাঁকে কী-ই বা সান্ত্বনা দেওয়া যায়। হামিমের বাবা মোতালেব শেখ হঠাৎ কান্না থামিয়ে দ্রুত বলতে থাকেন, 'হায় হায়,

এরপর পৃষ্ঠা ১৯ কলাম ২

Figure-6: Accident news



Figure-6: The intercity Ekata Express hit the bus around 3:05am when the bus was crossing Elenga Rajabari level crossing on the Mymensingh-Tangail Highway between the Ibrahimabad and Tangail stations.

2.4 Who are involve in accident:

Over involvement of Buses and Trucks In Accidents, bus/minibus - 33% trucks - 27% and In fatal accidents bus/minibus - 38% trucks - 30%



Figure-7: Over loaded bus

2.5 Causes of road accident:

1.Excessive and Inappropriate Speeding

2.'Break Rules' Now Rules Highways

3.Lack of Maintenance of Roadway

4.Driver Incompetency

5.Heavy Vehicles in Road Accidents

6.Curve of the Road



7.Risky Spots Left Risky

8.Negligence of the Traffic Police

9.Need for Driver Licensing Control

10.Need for Vehicle Licensing Control

11.The Re-planning of Stations, Stops and Terminals

12.Enforcement of Traffic Rules

2.6 .Factors of road traffic accidents:

1. Road Users
2. Road
3. Vehicle

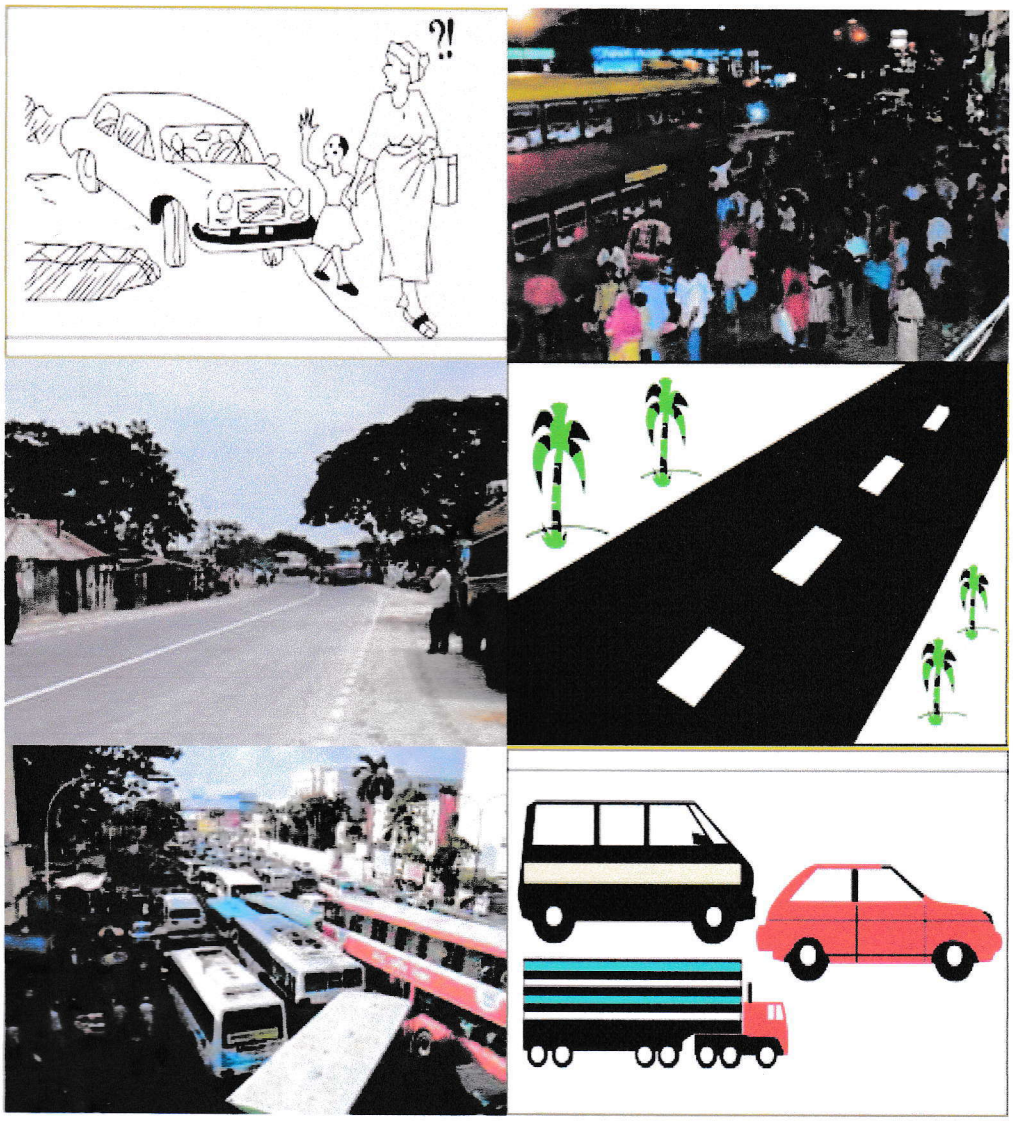


Figure-8: Road Condition

2.7 Factors contribute of accident:

1.
Road user errors (90%)

2
.Adverse road conditions
or environment (30%)

3.
Vehicle defects (10%)

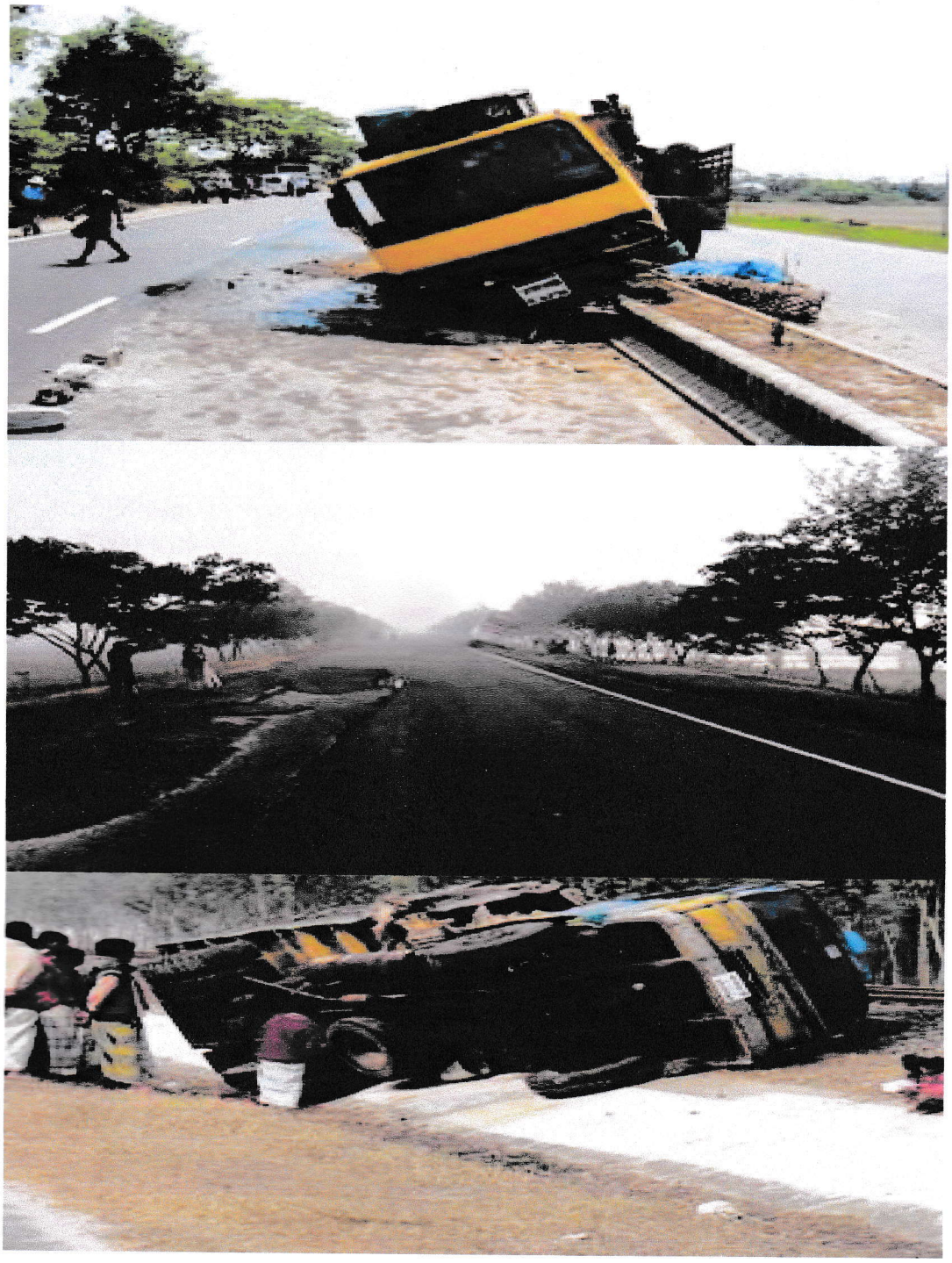


Figure-9: Accidental face of track

2.8 Lack of traffic Rules:

1. Lack of suitably qualified and trained police personnel
2. Lack of reliable up to date database of licensed vehicles and drivers
3. Lack of proper equipment and tools for enforcement
4. Lack of co-ordination between various departments involved in the traffic and transportation system
5. lnadequate penal provisions and enforcement procedures
6. Highly mixed vehicular traffic on the road controlled under separate rules and authorities

2.9 Accident Rates in Bangladesh:

- According to police statistics, Road accidents in Bangladesh claim, on average 4000 lives and injure another 5000 a year.
- However, WHO estimates that the actual fatalities could well be 20,038 each year (WHO, 2009).
- Death rate of 12.7 deaths per 100,000 population
- In economic terms, road accidents cost the community in the order of nearly US$1500 million, nearly 2% of GDP per annum.
- Reported fatalities increased 4 times in 26 years
- In terms of vehicle ownership, Bangladesh has one of the highest fatality rate internationally, over 100 deaths per 10,000 motor vehicles .
    - In Current prices, road accident in Bangladesh is costing community at least Tk. 10,000 crore/US$ 1450 million per annum (1-3 percent of GDP)
- Nearly 70% of road fatalities occurred on rural sections of the main highways as the metropolitan cities accounted for only about 20 percent.
- Over 80% of fatalities are vulnerable road users e.g. pedestrian, bicyclists, motorcyclists & users of unsafe and informal public transport

2.10 Total Accident Statistics:

According to the official statistics, there were at least 3334 fatalities and 3740 injuries in 4114 reported accidents in 2003. It is estimated that the actual fatalities could well be 10000-12000 each year. Significant fluctuations in the numbers of fatalities and injuries as reported by police clearly reflect the problems of reporting and recording inconsistencies. The number of fatalities has been increasing from 1009 in 1982 to 3334 in 2003, nearly 3.5 times in 22 years period. The statistics revealed that Bangladesh has one of the highest fatality rates in road accidents, over 100 deaths per 10,000 motor vehicles. About 70 percent of road accident fatalities occurred in rural areas including rural sections of national highways.

Table-01: Accident Statistics of Bangladesh

YEAR	Registrated Vehicle No	No of dead people	No of injured people	Total No of victim
1995	**44004**	**1653**	**2864**	**4517**
1996	**46457**	**2041**	**3301**	**5342**
1997	**32283**	**3162**	**5076**	**8238**
1998	**32481**	**3085**	**3997**	**7082**
1999	**31503**	**3314**	**3453**	**6767**
2000	**28764**	**3430**	**3211**	**6641**
2001	**42510**	**3109**	**3172**	**6281**
2002	**54877**	**3398**	**3770**	**7168**
2003	**59248**	**3289**	**3818**	**7107**
2004	**49202**	**2748**	**1080**	**5621**
2005	**65878**	**3187**	**2754**	**5941**
2006	**80305**	**3193**	**2409**	**5602**
2007	**121272**	**3749**	**3273**	**7022**

1.25-30 people died everyday for road accident, its more than 80 percent high from developed countries.

2.Victims are mainly pedestrians, which is one-third age less than 15 years.

3.Annual loss is more than 5000 corer.

4. Statistics show that, every year more than 85 people died from 1000 registered Vehicle in Bangladesh, On the other hand only 5 people died in developing countries every year.

5. Recently road accident research result show that, pedestrians, Bicycle, Motor cycle & private car is use only unsafe road.

Table-02: Accident locations:

Road Types	Fatal Accidents		Non-fatal Accidents		Total	
	No.	**%**	**No.**	**%**	**No.**	**%**
National	14251	44.9	4830	34.4	**19081**	**41.7**
	(74.7)		(25.3)		(100)	
Regional	4502	14.2	1501	10.7	**6003**	**13.1**
	(75.0)		(25.0)		(100)	
Upazila	4953	15.6	1580	11.2	**6533**	**14.3**
	(75.8)		(24.2)		(100)	
Union	2638	8.3	663	4.7	**3301**	**7.2**
	(79.9)		(20.1)		(100)	
City	5369	16.9	5478	39.0	**10847**	**23.7**
	(49.5)		(50.5)		(100)	
Total	**31713**	100	**14052**	100	**45765**	**100**
	(69.3)		(30.7)		(100)	

CHAPTER 3

MEASURES OF ROAD SAFETY

3.1 Major road safety initiatives on Bangladesh:

In order to improve the road safety situation as well as to minimize the recurrent losses of valuable lives and properties, several initiatives have been taken by the various government, non-government and donor agencies in Bangladesh in the form of policy implementation, institutional development, geometric improvement of roads, sanction of legislation and enforcement,capacity building of professionals and academician and awareness development of mass people. Some of the major initiatives are:

3.2 Adoption of National Land Transport Policy (NLTP) :

National Land Transport Policy (NLTP) has been adopted in 2004 by the Planning Commission of Bangladesh, which sets vision for "providing safer roads" and policies there-for, such as (i) road safety auditing at all phases of road projects, road construction & maintenance, (ii) speed restrictions on roads, (iii) safety improvement of existing roads etc. which are needed to achieve the vision (RHD, 2005b).

3.3 Preparation of Safety Manual, Hand Book and Guidelines:

RHD has prepared different Manual, Hand Book and Guidelines for road safety such as the Guidelines for Road Safety Audit, Road Safety Improvement Works Manual, Road Safety Users Guide, Road Geometric Design Manual, Police Training Handbook, Road Safety Engineering Toolkit, Pavement Design Guide, Guidelines for Identification of Sites for Road Safety Improvement Works, A Guide to Safer Road Design, among others with the help of development partners under different projects. In addition, Traffic Sign Manual has been developed by Bangladesh Road Transport Authority (BRTA) in 2000 (BRTA, 2000).

3.4 Establishment of National Road Safety Council (NRSC) :

The National Road Safety Council (NRSC) was established in 1995 under the auspices of the Ministry of Communications. Initially with support of WB funded road improvement project of RHD; now a unit of BRTA. The NRSC acts as apex body for approving and driving forward the national policy and plans. The NRSC also formulated the National Road Safety Action Plan. Besides, the NRSC is responsible for holding periodic meetings to provide policy level guiding decisions and directives to road safety related stakeholder
organizations.

3.5 Establishment of Road Safety Cell and District Road Safety Committee:

Besides NRSC, District Road Safety Committees (DRSCs) at the district and metropolitan levels have been formed by the involvement of DC and SP along with BRTA, road authority and other transport / road user agencies, which implement programs and policies of NRSC and will undertake local road safety programs according to local needs. There is an Executive committee headed by the chairman BRTA to co-ordinate NGO regarding road safety issues (Hossain, 2002).

3.6 Establishment of Accident Research Institute (ARI) at BUET :

In response to the growing accident problem in Bangladesh, the concerned authorities have started to realize the need for scientific study and research regarding the causes of accident and commensurate remedial measures. The highest level of commitment in this regard came from the Honorable Prime Minister to establish an independent Accident Research Centre (ARC) within the top priority programs of the government. Accordingly, the ARC has been established at Bangladesh University of Engineering and Technology (BUET) in 2002. After the successful completion of the project period, ARC becomes an institute named Accident Re-search Institute (ARI) under education ministry at BUET in 2007.

3.7 Development of Road Safety Unit at RHD and LGED :

With the technical assistance of DFID, RHD has established road safety division in January 1999 with a view to deal with the safety aspects of national, regional and feeder roads. (Hossain, 2002). There are severe lacks in man-power, logistics and facilities; hence yet to become fully functional. Recently, MoC approved proposed upgrading of the Unit, its roles and functions and procedures for implementing roles and functions. LGED has planned to create Road Safety Unit within LGED; and undertaking activities in this regards (RHD, 2005b).

3.8 Establishment of Highway Police :

With the aim of increasing of the safety and improving traffic management on highways, the Government of Bangladesh created the Highway Police in 2005 with a view to maintain and ensure discipline, enforce traffic rules and regulation on the highway, traffic management, prevent highway crime, collect and disseminate of intelligence, police patrolling as well as ensure safety on road etc.

3.9 Formation of Road Safety Voluntary & Advisory Group:

In addition to government organizations, many road safety non-government voluntary or advisory groups have been formed at national, regional as well as local levels in Bangladesh. Nirapad Sarak Chai, Work for Better Bangladesh (WBB), Safe Community Foundation, Poribesh Bachao Andolon etc. are pre-dominant at national level.

3.10 Approval of Speed Limit Zoning and Speed Restriction Rules :

Excessive and inappropriate speed is the most important factor contributing to the road injury problem faced by many countries (GRSP, 2007). Incognizance with these facts Speed Limit Zoning & speed restriction rules have been developed for different highwaysin Bangladesh. It has been approved and published in a gazette by BRTA in 2005 (Bangladesh Gazette, 2005).

3.11 Preparation of National Road Safety Strategic Action Plans :

From the establishment of The National Road Safety Council (NRSC) in 1995, drew up first National Road Safety "Strategic Action Plan" covering the period from July 1997 to June 1999 and subsequently 2000 to 2002, 2002 to 2004 & 2005 to 2007 have developed. Subsequently the National Road Safety Council (NRSC) of Bangladesh formulated an updated "National Road Safety Strategic Action Plan 2008-2010" with the hope that is will provides an important opportunity for improving safety in a comprehensive way and
makes an effort to approach the issue holistically.

3.12 Development of Accident Database:

A standard format for accident information recording was designed in 1995 as an initiative under Institutional Development Component (IDC) program was adopted by Police Department and promulgated appropriate rules for mandatory use as part of "First Investigation Report" of accident cases by Police. Besides, MAPP5 software based accident database system has been developed and data has been being stored in this software since 1998. In addition, Under Institutional Development Component (IDC), RHD has conducted road inventory survey and has prepared inventory book to identify the accident locations and find out Black spot on the road as well as to treat that location through different site-specific intervention. Computerized data base for recording registered motor vehicle and officially licensed driver's data have also been established at BRTA by the Dhaka Urban Transport Project (DUTP) funding under IDC program (RHD, 2005b).

3.13 Preparation of BRTA Annual Report :

The Bangladesh Road Transport Authority (BRTA) has been collecting and analysing road traffic accident statistics since 2001. Since its inception in January 2001, BRTA has been preparing reports based on the National Road Traffic Accident (RTA) database. Since 2005, the Bangladesh Road Transport Authority (BRTA) has been continuing this process of data collection and analysis independently, without international assis-tance.

3.14 Training of Road Safety Professionals :

Efforts are underway for strengthening the capabilities of the key agencies throughorganizing different long and short term training program both local and overseas for the professionals and providing facility to partici-pate different workshops, seminars and conferences on road safety.

3.15 Safety Awareness and Training :

Different safety awareness campaign and training programs have been taken at different levels in the country including professionals, transport owners & workers, students, cadet, BNCC, mass people by different government and non-government organizations under different projects and by individual initiative.

3.16 Implementation of Road Safety Audit :

Incognizance with the facts, RHD road safety unit has introduce formal road safety audit on the different locations or spot of national highway from the past few years under different projects.

3.17 NGO Initiatives towards Road Safety:

The Non-Government Organizations (NGOs) are becoming active in the area of road safety in Bangladesh. The activities of two leading NGOs such as BRAC and Center for Rehabilitation of the Paralyzed (CRP) are quite noticeable in this regard, (Quazi, 2003). The major programs being undertakeninclude are Community Road Safety; Training of Students; Road Safety Training for Office Staffs; Community Road Safety NGO 167Network; Publicity and Awareness; Research; Driver's Training; Treatment and Rehabilitation of Paralyzed People.

3.18 Geometric Improvement of Roads :

Significant improvement works have taken place on the national highways as well as regional and feeder roads of all over the country in the past decade by RHD and LGED with the support of Government of Bangladesh and donor agencies. Construction of new and strategic road, realignment of existing road, widening of road, surface treatment, road and roadside improvement like shoulder improvement, removal vision obstruction, providing loading and unloading facilities were the major link improvement work among them. Besides, some of the hazardous road locations both spots and links have been improvement with the prime objective of safety improvement on the different national highways in Bangladesh.

3.19 Procurement of Safety Equipments and Logistics :

Different types of enforcement and road safety equipments have procured by the concerned agencies including police, BRTA in different times under different projects in particular SRNDP funding. Besides, office equipment and logistics also have been procured to setup and organized of Road Safety Unit of RHD and LGED.

3.20 Establishment of International/Regional Cooperation Regarding Road Safety:

Various concern organizations of Bangladesh have developed effective linkages and professional exchange programs with different institutions, organizations, universities etc. at local, regional and international levels viz. GRSP, VTI, ESCAP, ADB, WB, REAAA, TRL, TRIPP and other international aid agencies and the specialized institutes in order to facilitate exchange of knowledge and technologies regarding road safety.

which would provide the means to develop and evaluate ef-fective countermeasures. Financing of traffic safety research is at present fully the responsibility of the Government of Bangladesh. The administration does not carry on research of its own, but both research institutes anduniversities can ap-ply for funds for research projects. No industry or private organization has focused on safety research issues and funding support yet. Work on a joint traffic safety research program is trying to carry out at present in co-operationbetween the donor agencies like the World Bank, UNICEF and the other government organizations and institutions.

4.3 Expenditure and Funding for Road Safety in Bangladesh:

Financial resource crisis for developmental work is acute in developing country, like Bangladesh posing threat to sustainable road development. Very small proportion of required fund could be allocated per year. During financial year 2005-06 development fund allocated from National ADP for RHD and LGED are Tk. 2004 Crore (RHD Website) and Tk. 3069 Crore (LGED Office,1 US$ = Tk. 70.00 and 1 Crore = 10 mil-lion) respectively with about 10% year to year annual increase (MOC, 2006-07). There was a significant increase in major periodic maintenance in 2004-05 provided by DFID (Sector Budget Support) and JBIC (dept swap arrangement). Excluding this, externally finance expenditure and ferry costs, expenditure was reasonably constant at about 350Crore Taka per year. The total estimated expenditure on maintenance of full network is Tk. 1400 Crore which is around Tk. 450 Crore more than was spent in 2004-05 (Road Fund Office, 2006). However, RHD expenditure includes Tk. 380 Crore from International aid agencies. Without this assistance the total expenditure would only be 40% of the total requirement. Cur-rent backlog for the whole RHD road network is 1844.9 Crore Taka (MOC, 2006-07).

4.4 Under Reporting of Accidents:

The widespread under reporting and incomplete collection of specific details of accident data are, however a major problem in Bangladesh. Most of the injury and property damage accidents are not reported at all. Indeed, many of the fatal accidents are not reported particularly in the remote regions. A case study on selected police stations adjacent to the highway have shown that there is a significant difference in the number of acci-dents between the MAAP5 accident database and the First Information Report (FIR), with lower number of accidents in the central MAAP5 Database (ARI, 2007). Due to such immense under reporting, it is difficult to understand the magnitude and economic burden of accidents and to carry out comprehensive road safety research to identify the causative factors for developing scientific and effective measures.

4.5 Institutional Weaknesses :

Road safety improvement efforts and initiatives in Bangladesh seriously affected fromseveral drawbacks and weaknesses in particular institutional weaknesses. Lack of support, coordination, cooperation, collaboration among safety stakeholders is could be noted as the leading barrier for institutional capacity building

4.6 Lack of Professional Capacity and Expertise:

A road safety research unit ideally needs several members interacting to ensure a critical mass working together and maximizing the research's potential impact on road safety policy. Training needs should be covered by university courses, short in-house courses, and overseas training. These are lack of a strong professional safety agency with adequate executive power sand responsibilities; fragmentation of responsibilities between agencies and insufficient inter-agency co-ordination; low level of staffing and lack of professional capacity; lack of trained traffic police for effective enforcement and traffic regulations etc

4.7 Resource Constraints:

According to the Technical Note No.1 Review of Recent Projects and Research. March 1996 , ADB, In South Asia, India has been the most active in promoting road safety with research being undertaken by the Central Road Research Institute (CRRI) and the Indian Institute of Technology (IIT). On the other hand, road safety project in other countries like Bangladesh, include very insignificant local financing (ADB, 1996).. Without a stable and sufficient flow of funds for road safety, any attempt to solve road safety problems is bound to fail. Therefore, it is necessary to establish national road safety funds that are run like a business and financed through road user charges and insurance company revenues and automobile companies revenues among others. The character of such road safety funds as noted in the Pakistan country paper, 2007b is listed
below:

- Sound legal basis with a road safety fund administration and clear rules and regulations.
- Straing oversight by a board with qualified and powerful members from the private and public sector and representing all important groups with vested interest in road safety.
- Revenue incremental to the public budgets and coming from charges related to road use and channeled directly to the national road safety fund band account.

- Sound financial management systems with lean efficient administrative structure
- Regular technical and financial audits All of those principles are overwhelmingly important inthe context of safety improvement programs in Bang-ladesh.

4.8 Lack of Strong Political Support and Commitment:

Funding is synonymous with political support and is required to ensure appropriate staffing and resources are available for road safety research. Funding must also be consistent and reliable to allow research adequate development time. There is a strong need of political commitment and support. For the absence of lead agency, there is no owner of road safety in the state.

4.9 Wrong Policy :

The development history of road transport in Bangladesh, particularly after the independence of the country, more focus was given in developing road length and number of bridge by constructing new roads and bridges and very insignificant consideration was given for the maintenance and road safety. Road construction followed standard geometrics with least concern for roadsafety. Undertaking/implementing road safety program initiatives as a component or a sub-component of other large roadimprovement projects resulted in lower attention by the concerned authorities of project implementation.

4.10 Lack of Integration between Concern Agencies :

Road safety is a multi-disciplinary issue and the concern of government at national, regional and local levels, civil society and business. Road safety research is not an end in itself and findings need to be shared, discussed, and applied in order for the full benefits to berealized. Research findings can be disseminated through seminars and training courses, and through international conferences. Research findings should be integratable into transport policy, which requires a close working relationship and integration between different con-cern organizations and institutions particularly the traffic police, road engineers and researchers. In Bangladesh, different organizations are working for transport mobility and safety but there has huge lack of coordination and integration between them.

4.11 Lack of Government and Private Partnership :

In Bangladesh the very few road safety initiatives which is usually undertaken particularly by the Government organization, Universities and Research Institutes and is
normally financed by the country. In many of the developed and developing countries road safety programs spans several public and private organizations and which is funded from several different sources viz. industries, manufacturers, development authorities. Involvement of insurance, motor industry, and road transport industry groups (bus/truck owners association workers Federation) should be considered in the roadsafety initiatives. Unfortunately, such initiatives are extremely infrequent in Bangladesh particularly in last few years.

4.12 Lack of International Linkage, Support and Cooperation :

As discussed earlier, development of international linkage, support, cooperation and coordination is initiated through organizational or individual effort; but it is very infant level yet to deal with the road safety crisis. There is a strong need to develop a global partnership with international aid, funding, social welfare organizations/institutions and academic and research institutions through strong leadership and communication.

4.13 Poor Accident Data Recording System:

Currently, there is only police reported accident database in Bangladesh. Hospital or insurance-based accident database has not yet been developed. ARI is continuing its effort to develop newspaper based accident database but the newspapers have large reporting inconsistencies and highlight generally on major fatal accidents
particularly in the nearby core areas around growth centers. Injury accidents or remote areas' accidents are almost unseen in the newspaper reports. Even the newspaper reporting quality is not quite significant and elaborated with respect to facts finding analysis and research. Indeed, the police reported accident database is also not sufficient and substantial for in-depth accident analysis and qualitative research. Multiple independent database is needed to reduce underreporting and to maintain and improve quality of databases.

CHAPTER 5

TRAFFIC SAFETY RULES FOR BANGLADESH

5.1 TRAFIC SIGN

5.2 GUIDE POST

5.3 K.M. POST

5.4 JUNCTION CONNECTION

5.5 ROADS SLOPE



Figure-10: Traffic sign

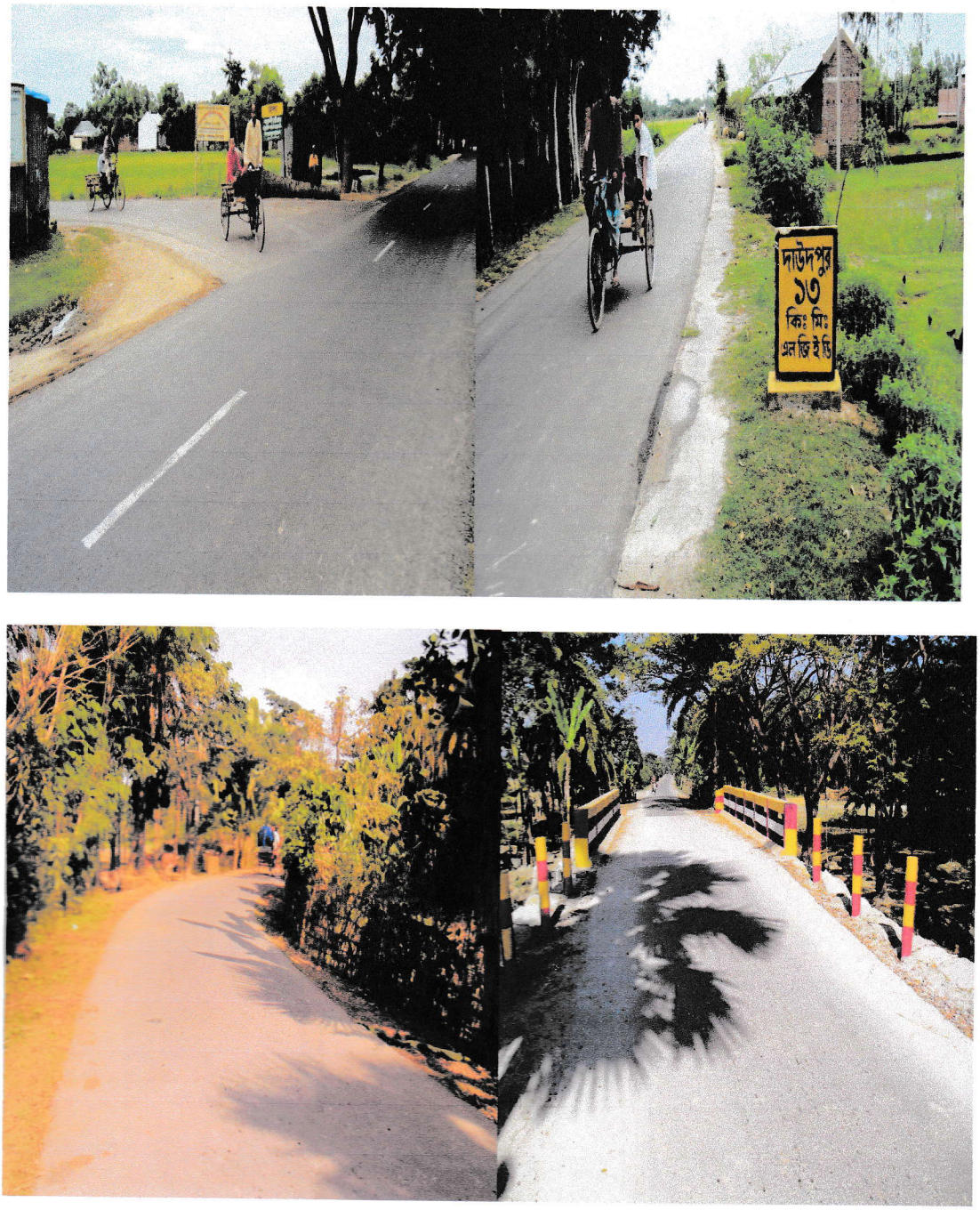


Figure-11: Traffic sign



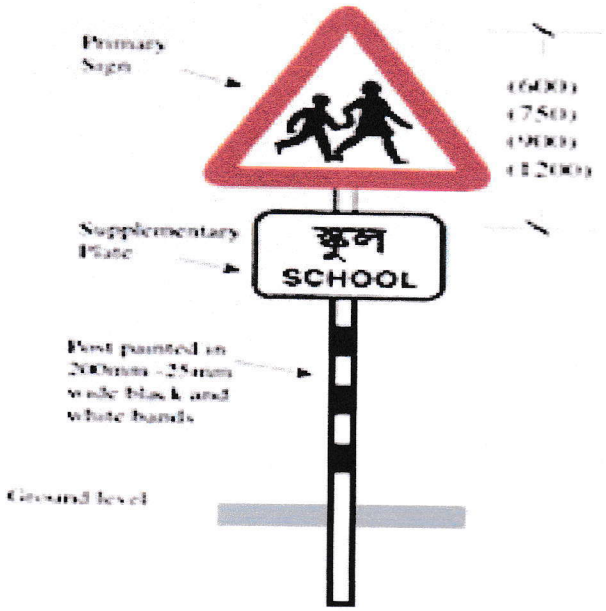


Figure-12: Traffic sign

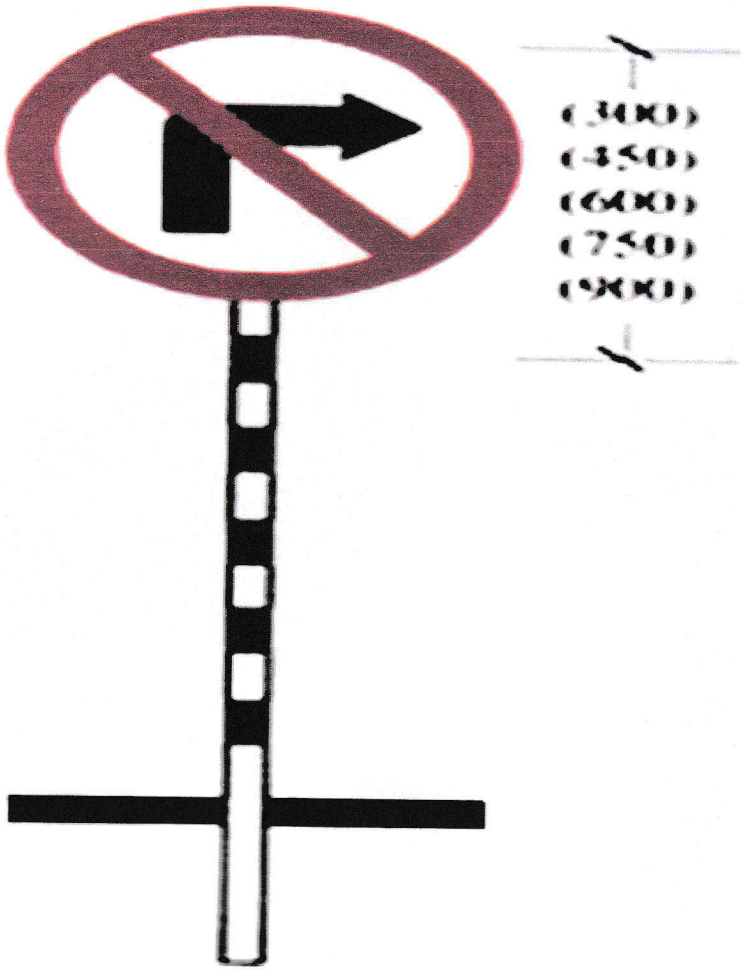


Figure-13: Traffic sign

5.6 Warning of road safety:

1. Pedestrian & driver are also avoid to talking mobile in the road





Figure-14: Mobile Talking

2. Stop tree cutting in road side.

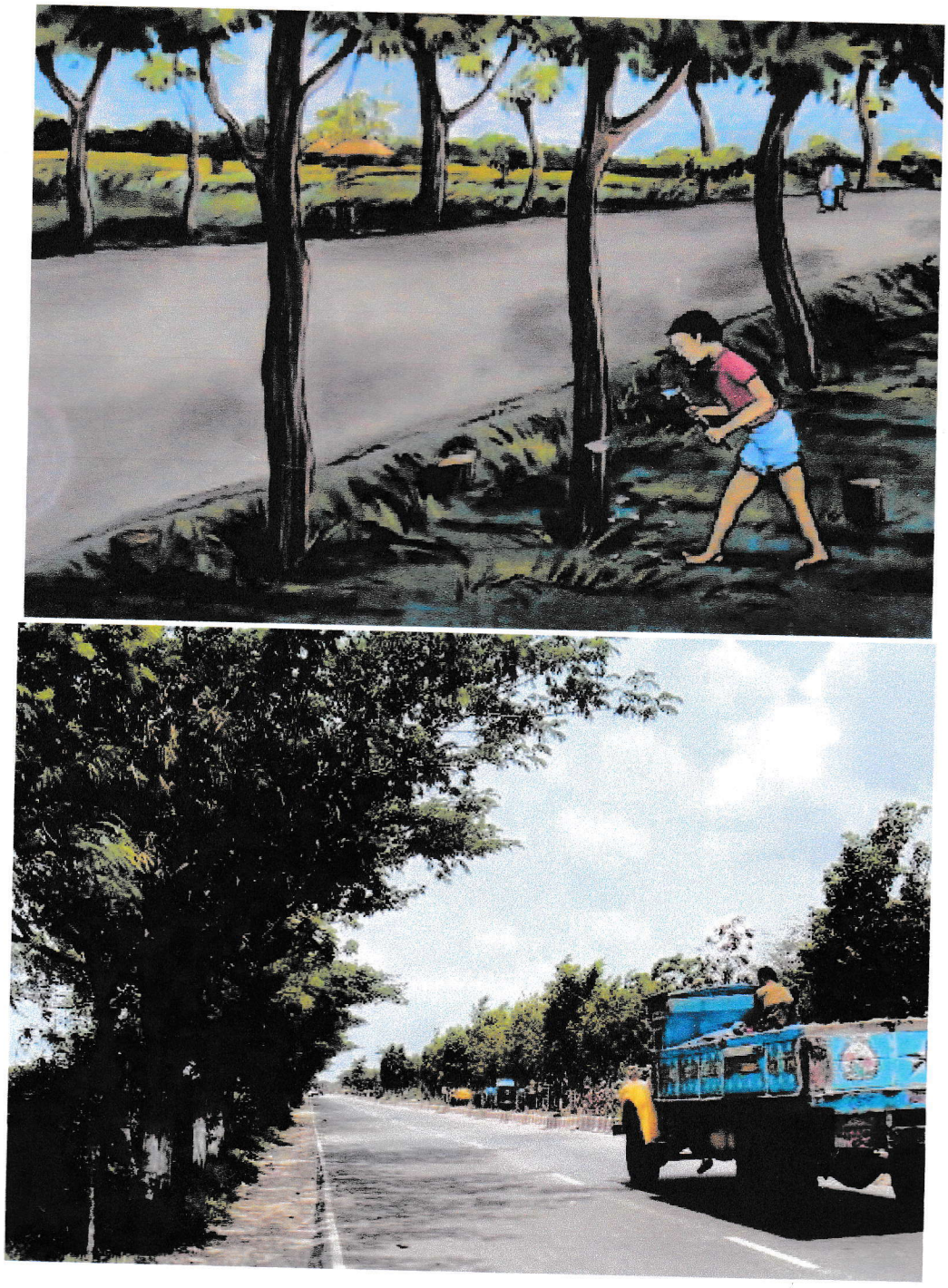


Figure-15: Road side tree cutting

3. People are put in tube well in road side:

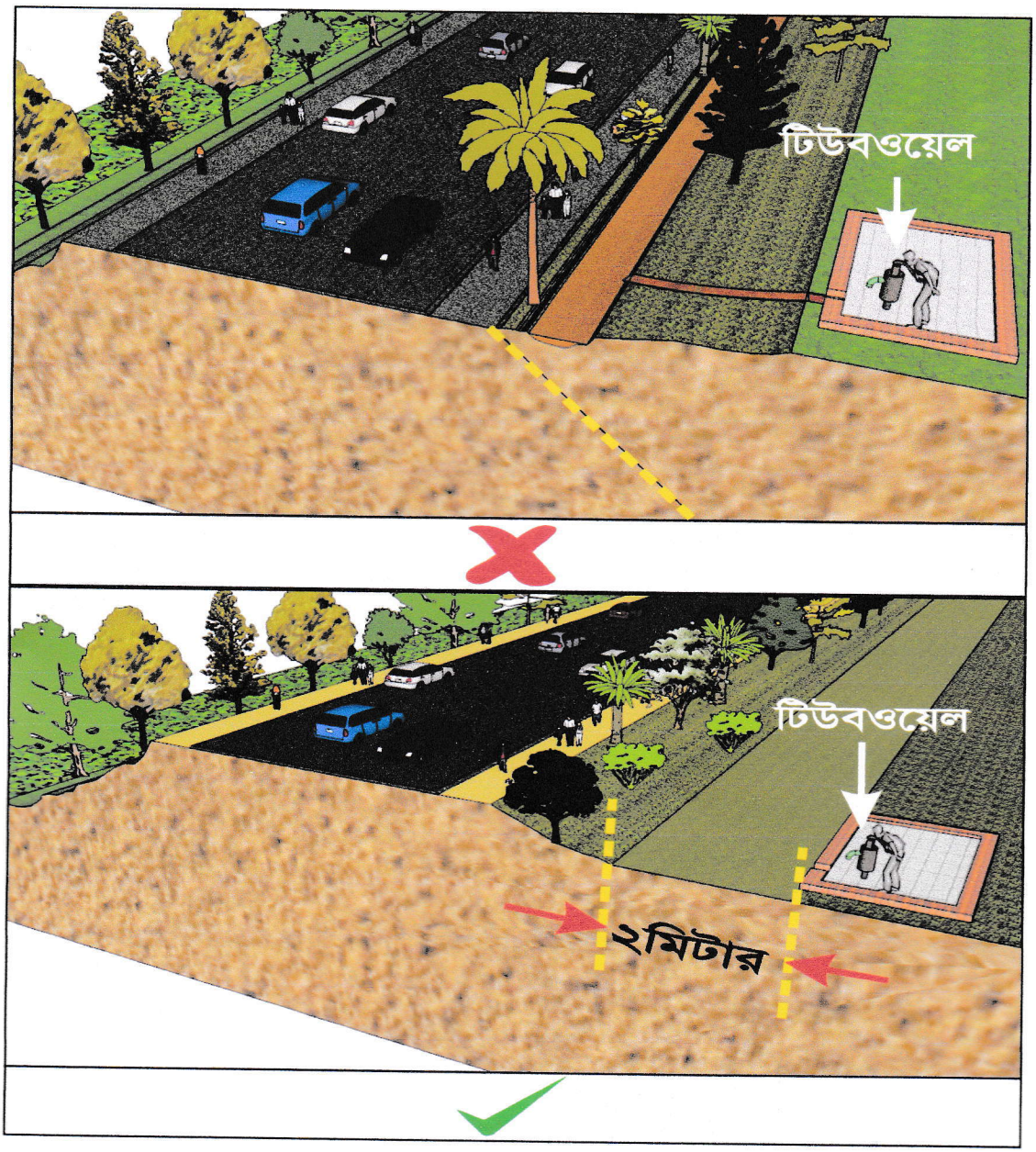


Figure-16: Tube well at road side

CHAPTER 6

CONCLUDING REMARKS

6.1 Safety Measures in Planning, Preliminary Design, Detailed Design:

1.Adjacent road / land use environment

2.Embankment formation width & height

3.Pavement widths

4.Pavement Surface

5.Shoulder and verge

6.Cross-sections at bridges & culverts

7.Lane configuration and Slow/Non-motorized traffic lanes

8.Medians

9.Signs

10.Markings

11.Lighting

12.Signals

13.Retro-reflective Edge lines & Centerline Markings

14.Reflective Markings

6.2 Safety Measures for Traffic Control & Management:

- One-way street systems
- Delineators
- Guideposts
- Crash Barriers
- Speed retarding devices – rumble strips, road humps, Railway
- Crossings.
- Speed limit zones / areas

6.3 Awarness of road safety:

- 1. Make the Road Safer
- 2. Create Awareness among drivers, pedestrians
- 3.Avoide use mobile phone when driving.
- 4. Every body should follow traffic rules
- 5. Avoid over load & over taking tendency
- 6.Unfitness vehicle should not use in road.

6.4 CONCLUTION

Because road accidents are a national problem, achieving safety on our roads depends greatlyon the commitment and efforts of the government, communities, organizations, families andindividuals throughout Bangladesh. There is a real need that our efforts should bestrengthened with due regards to the following:

i.Making road safety as policy priority;

ii.Designating a single central agency with the authority to address road safety

iii. Activating lead agencies in relevant sectors with appropriate authority and resource
availability;

iv. Establishment of a reliable data set that enables to define the problems and implement
effective measures;

v. Seeking solutions of accident problems through correct procedures, standards, safety
conscious planning and design and good practices;

vi. Undertaking a comprehensive approach to address the human, vehicle and environmental factors at each phase of a crash; pre-crash, during the crash and after the crash;

vii. Improvement of the roadway system with special consideration of promoting pedestrian safety;

viii. Bringing about changes in attitudes of drivers towards safe operations through strict
enforcement and sanctions;

ix. Providing appropriate training and education on accident prevention, injury control and safety technology;

x. Making available requisite funding and resources for safety improvements;

xi. Transferring and adapting best practices and interventions through local and international collaboration focused on all aspects of road safety: the behavior of drivers, riders, passengers and pedestrians; vehicle safety; roadway environment; and emergency medical services.

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