ROAD SAFETY IN BANGLADESH AND SOME RECENT ADVANCES

Presentation By
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Outline of the Presentation

- To present the road safety **perspectives** in Bangladesh.
- To highlight the dimensions and striking **characteristics** of accident problems.
- To outline some emerging road safety **priorities** and options.
- To discuss some recent **advances** in road safety initiatives.
- To outline the **“The Way Forward”** to road safety situation.
- To propose our **requirements and expectation**.
The Global Burden of Road Traffic Injuries

- Deaths and injuries as a result of road traffic accidents is recognized as global health issue
- It is estimated that road crashes kill 1.2 million people and injure 20-50 million annually (daily road tolls more than 3000 i.e. nearly 140 deaths per hour)
- Accident death rates in developing countries are much higher (at least 50 times) than in developed countries
- In 2020, it is expected to kill 2.4 million, more than those dying due either to malaria, TB or HIV/AIDS
- Fatalities are predicted to increase by nearly 90 percent in low and middle income countries and to decrease by 30 percent in high income countries.
BRIEF DETAILS OF BANGLADESH

- Bangladesh is a country in South Asia
- About 140 million inhabitants
- Area of 147,570 sq. km
- About 950 inhabitants per sq. km.
- GDP of around $450 (US) per head.
- Population growth remains high at 1.43 per annum
- About 25 percent of the population is living in the urban areas
- The rate of urbanization over the last decade has been between 7 and 8 percent
Transport is an extremely important part of the Bangladesh economy. Some 12% of GDP and 20% of the annual development budget is spent on transport, and 9.4% of the national employment is in the transport industry.

Bangladesh has about 0.7 million motorized vehicles and 1.5 million non-motorized vehicles. At the current growth, the number of vehicles in the country is expected to be double in the next ten years.

There has been a continued increase in the shares of passengers and freights carried by road compared to rail and water; currently over 75% of passenger and nearly 70% of freight is carried by road transport.
ROAD TRAFFIC ACCIDENTS: THE CONTEXT OF BANGLADESH
Our concern for road safety

41 killed as bus goes up in flames

OUI CORRESPONDENT, Colilla

At least 41 people were killed when an overloaded bus fell into a ditch and burst into flames at Sowagali in Colilla on the Dhaka-Chittagong highway yesterday.

The overcrowded bus, belonging to Srimat Corporation, was speeding towards Chittagong when it lost control 30 kilometres from Colilla town and veered into a ditch around 11.30am.

The bus instantly burst into flames when its fuel tank exploded and its diesel caught fire.

Colilla's Deputy Commissioner (DC) Mohbub Hannan Chowdhury told the Daily Star last night: "We have recovered 41 bodies from the wreckage. We do not think there are any more bodies."

Rescuers try to pull the wreckage of the ill-fated bus back on the highway after it veered into a ditch and exploded near Sowagali in Colilla yesterday.

IN PICTURES: The aftermath of the bus accident in Colilla, Bangladesh, which claimed 41 lives. The bus fell into a ditch and burst into flames. The incident highlights the urgent need for better road safety measures in Bangladesh. 

Source: Daily Star
Our concern for road safety
17 killed as train rams bus in Tangail

The bus left Ballabazar around 2:00am. The intercity Ekata Express from Dinajpur 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.
CAUTION
LEVEL CROSSING AHEAD
18 killed, 55 hurt in Kalihati again: Second bus accident in 3 days

The speeding bus, packed with day-labourers from Bhurungamari in Kurigram district, was heading to Narsingdi district, suddenly turned turtle on the road at Hatia under Kalihati upazila on Jamuna Bridge road in Tangail at about 6:45 A.M.
At least 50 people were injured in clashes between students and police for the second day yesterday at Dhaka Polytechnic Institute over a student's death in road accident the night before.

The institute authorities suspended classes for an indefinite period and closed the dormitories to avert further violence.

Of those wounded, 20 are students and 26 policemen.
Abdullahpur-bound speeding minibus hit Shammee, Rejaul Haq Ranju and several others at Shahbagh intersection at about 11:30am while they were crossing the road. It also knocked a motorcycle and injured its riders.

The DU students burst into violent protests as soon as the news of Shammee's death spread on the campus. They went on the rampage, damaging vehicles on the streets in the university, Shahbagh and Chankharpool areas.
Dimensions of Road Accidents
<table>
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<th>Year</th>
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<td>2007</td>
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Accident Rates in Bangladesh

- According to police statistics, Road accidents in Bangladesh claim, on average 4000 lives and injure another 5000 a year.

- Actual estimated road fatalities each year about 10,000 to 12,000 which is at least 50 times higher than the rates in Western Europe and North America.

- In Current prices, road accident in Bangladesh is costing community at least Tk. 5,000 crore/US$ 850 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.
For every injury death, **50** injured attend emergency care

**500,000** people are estimated to visit emergency room

*Source: Bangladesh Health & Injury Survey Report, January 2005*
Figure: Fatality Index in selected countries, 1980's & 1990's

Figure: Fatality Rate in selected countries, 1980's & 1990's
Poverty Impact of RTA

- Road accidents **disproportionately affect the poor** and their consequences plunge household into acute poverty.
- Poor people are forced to use non-standard and unsafe vehicles.
- NMV operators particularly **rickshaw pullers are being unaware** of traffic safety are putting lives at rest.
- Of the children being killed and permanently disabled in RTA, the majority are from the **poor families**.
Many families are driven deeply into poverty by the loss of a breadwinner and the added burden of the disable members.

According to TRL over 70% of poor household reported their household income and food consumption decrease after a road death (for non-poor it is 57%)

Some 61% poor families are forced to arrange loan after road death (34% for non-poor)

Among the poor, 32% road deaths occur to head of households (compare to 21% non-poor)
WHERE DO ACCIDENTS OCCUR

- Nearly 37 percent in National Highways,
- 12 percent in Regional Roads
- 15 percent in Feeder Roads.
- Nearly 40 percent at junctions in urban areas.
- Accidents are highly clustered at some locations.
- In Dhaka nearly 52 percent of all accidents occurred at only 9 percent of the total 200 intersections.
- In the rural areas about 43 percent of reported National Highway accidents occurred in only 5 percent length of National Highways.
- These characteristics clearly demonstrate that accidents are amenable to targeted and site specific treatments.

### Urban, Rural Accidents and Fatalities

<table>
<thead>
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<th>Reported Accidents</th>
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</table>
ACCIDENTS BY SEVERITY

- Fatal 65 percent
- Grievous 24 percent
- Simple 6 percent
- Collision type 5 percent

• Demonstrates the prevalence of significant underreporting of Injury accidents.
HOW ACCIDENTS HAPPEN

• Most common accident types are
  • Hit pedestrian (45%),
  • Rear end collisions (16.5%),
  • Head on collisions (13.2%),
  • Overturning (9.3%).
• These four accident types account for nearly 85 percent of the accidents
WHO ARE INVOLVED IN ACCIDENTS

Over involvement of Buses and Trucks

• In Accidents,
  - bus/minibus - 42%
  - trucks - 37% and

• In fatal accidents
  - bus/minibus - 38%
  - trucks - 30%
WHO ARE INVOLVED IN ACCIDENTS (contd.)

Pedestrians: the most Vulnerable road user group

- Pedestrians alone are involved in more than 47% of road accidents and 49% of all fatalities
- In urban areas pedestrians accounted for 62 percent of fatalities and in Dhaka city this is nearly 70 percent
WHO ARE INVOLVED IN ACCIDENTS

Involvement of Children in Road Accidents

- About one third of the total pedestrian fatalities are children under age of 16 years.
- Fatalities of children under 16 years of age are accounting for nearly 22 percent of all fatalities in Bangladesh and are 2.5 times higher than those in industrialized countries.

![Pie chart showing age distribution of road accident victims](image-url)

**Fig: 1 Road Accident Victim's Age Distribution**
Accidents and Fatalities During Eid Vacation

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<th>Year</th>
<th>Eid-ul-Fitr</th>
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Trends of Major Fatal Accidents*

*Accidents where at least 3 persons killed

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<th>Year</th>
<th>No. of Accidents</th>
<th>No. of Fatalities</th>
<th>No. of Injuries</th>
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**Major Fatal Accidents and Fatalities**

- No. of Accidents
- No. of Fatalities

Increasing Trends
Factors of Road Traffic Accident

1. Road Users
2. Road
3. Vehicle
WHAT FACTORS CONTRIBUTE ACCIDENTS

• Road user errors (90%)

• Adverse road conditions or environment (30%)

• Vehicle defects (10%)
SAFETY ISSUES OF CONCERN

• Road Environmental Deficiencies
• Defective and Road unworthy Motor Vehicles
• Drivers Incompetency
• Under Reporting of Accidents
• Inadequacy in Police Inspection and Safety Education
• Poor Enforcement
OUR ROAD SAFETY PRIORITIES

• Setting realistic problem specific goals and targets
• Systematic understanding and investigation of the accident problems
• Use of correct procedures

Some priority issues include:
• Control of speeds.
• Promote pedestrian safety
• Treatment of Hazardous Road Locations
• Introduction of the road safety audit process
OUR ROAD SAFETY PRIORITIES
(contd.)

Some priority issues include:

• Prevention and reduction of dominant accident types and their severities
• Traffic law enforcement is critical component
• Promote safety conscious behaviour of road users, heavy vehicle drivers in particular
• Road safety education, especially for children
• Vehicle standard and fitness
• Prompt emergency assistance and efficient trauma care management
OUR ROAD SAFETY PRIORITIES
(contd.)

Some priority issues include:

• Accurate and comprehensive accident and injury data collection and management
• Improved and innovative solutions including the application of ITS
• Research and professional capacity building.
• Secure legitimate and adequate road safety funding
• Strengthening institutional capacity

Indeed, it is the effectiveness of implementation that matters most.
Some Recent Advances in Bangladesh

- **Achieving safety** on our roads depends greatly on the commitment and efforts of the Government and other relevant organizations.

- The concerned authorities have started to **realize the need for scientific study and research regarding the causes and commensurate remedial measures**.
The National Road Safety Council (NRSC) was established in 1995, which drew up National Road Safety "Strategic Action Plan" covering the period from July 1997 to June 1999. Subsequently, the National Road Safety Council (NRSC) of Bangladesh formulated an updated "National Road Safety Strategic Action Plan 2005-2007".

**The vision** - fifty percent reduction in the annual number of fatal road accidents within the next fifteen years.

**The goal** - ten percent reduction in the annual number of road accident fatalities by the end of the year 2007 (NRSC 2005).
The Road Safety Action Plan identified the nine priority sector activities for improving road safety. The nine sectors are:

I. Planning, Management and Co-ordination of Road safety
II. Road Traffic Accident Data System
III. Road Safety Engineering
IV. Road and Traffic Legislation
V. Traffic Enforcement
VI. Driver Training and Testing
VII. Vehicle Safety
VIII. Road Safety Education and Publicity
IX. Medical Services for Road traffic Accident Victims
Accident Research Centre (ARC) has been established at Bangladesh University of Engineering and Technology (BUET) within the top priority programs of the government in 2002 to carry out scientific research for clear understanding of the road safety problems and ascertaining the underlying causative factors, which contribute to accidents on roads, railways and waterways.

ARC is expected to play major role to develop pragmatic, cost-effective scientific solutions and bring about significant improvements in the capability of the professionals and workers.

ARC conducts appropriate training programs and workshops to develop qualified human resources for professional capacity building and also for creating mass awareness on road safety etc.
ACTIVITIES OF ARI

- Development of accident database and management system
- Accident research and investigations
- Safety training for professional and institutional capacity building
- Development of countermeasures and interventions
- Organizing Conferences, Seminars and Workshops
- Collaborative linkages
- Dissemination and application of findings
- Establishing library resources (journals, conference proceedings, books etc.) for research
- Full-fledged research laboratory and accident investigation facilities
Some Recent Advances cont.

The International Conference on Road Safety in Developing Countries

In order to generate road safety commitment and strengthen efforts at the national level ARC organized the first ever International Conference on Road Safety in Developing Countries in Bangladesh last year with a view to strengthen global collaboration and share multi-sectoral experience on road safety in developing countries.
To address the importance and integration of various organizational collaboration in solving road safety problems ARC organized a national workshop on organizational roles and responsibilities of road safety in April 2007.

Some important aspects addressed in the workshop are:

- Definition of responsibility
- Assigning the task
- Setting up a permanent group
- Planning and assigning adequate technical and financial task and
- Evaluation of the outcome of actions.
As a part of “Celebrating 60 Years of Engineering Education in Bangladesh”, a two day Workshop was organized by ARC, BUET with the support by The World Bank and the Roads and Highways Department in 21-22 November 2007.

The workshop was attended by World Bank road safety experts and representatives of the local office and the key road safety stakeholders in Bangladesh.

The workshop recommendations have been endorsed and submitted to Government.
National Workshop cum Training Course on Road Safety Audit

To introduce the concept, importance and potentials of systematic implementation of road safety audit process in promoting greater road safety in developing countries, like Bangladesh, a National Workshop cum Training Course was organized by ARC in March 2005. Over fifty participants from nearly eighteen organizations participated in the Workshop.
The Observance of UN First Global Road Safety Week

• In pursuance of the United Nations General Assembly resolution A/60/5 on “improving global road safety”, the key global event of the First United Nations Global Road Safety Week was being hosted around the world.

• The event was observed in Bangladesh in a befitting manner and made significant contribution to address road safety in a firmer way by consolidating effective and coordinated road safety initiatives at central, regional and local levels.
Some Major Road Safety Research and Investigations

- Hazardous Road Location (HRL) Program
- Investigation of Major Fatal Accidents and Accidents during Festivals
- Metropolitan Street Accidents
- Involvement of Pedestrians and Children in Road Traffic Accidents
- Understanding Heavy Vehicle Drivers’ Behavior
Some Recent Advances cont…

Road Safety Training and Awareness Programs

- Training for Professionals
- Training for Students
- Training for Heavy Vehicle Drivers
Some Recent Activities of ARC contd...

Road Safety Capacity Review by The World Bank
Road Safety Management Capacity:
The World Bank Review

Problems:

• A very serious road safety and public health problem with tragic, premature and costly loss of life and permanent disability;

• Exacerbating poverty reduction efforts particularly in rural areas and is set to deteriorate further as motor vehicle traffic grows;

• Effective road safety management across government needs to be established urgently and on a sustainable basis;

• While the key responsibilities and resourcing lie with government, all sectors of civil society and the business sector need to be motivated and engaged;

• Require delivery of agreed visions, targets, strategies and action plans.
Strengths:

- Determination amongst government and professionals from across disciplines and sectors to make progress;
- Recognition of the need to work together to improve outcomes via new institutional arrangements;
- Excellent local professional expertise and professional partnership building and the existence of a well-supported and highly effective accident research centre;
- The recent establishment of a new Highway Traffic Patrol (although not yet resourced for its task);
- Some commencement of road safety engineering approaches and potential capacity in the roads authorities;
- Some framework for local community engagement and the active support of key international and national donors in transport and health sectors.
Weaknesses:

• Lack of **effective institutional ownership** of road safety and multi-sectoral understanding of how to address challenges in improving road safety;

• Agencies lack **clearly mandated road safety goals and responsibilities** in the absence of Lead Agency;

• Lack **well-coordinated multi-sectoral decision making** on the basis of all necessary considerations;

• Key **delivery partnerships** for effective intervention; an appropriate **legislative framework**; sustainable and transparent **funding**;

• Systematic **understanding and investigation** of road safety problems across government;

• Further development of the **knowledge base** about the identification and implementation of effective solutions and effective **performance monitoring**.
Key governmental agencies are:

- Ministry of Communications (MOC)
- Ministry of Health and Social Welfare
- Bangladesh Road Transport Authority (BRTA)
- Roads and Highways Department (RHD)
- Local Government Engineering Department (LGED)
- Bangladesh Police
- National Highway Patrol (NHP)
- Bangladesh Police (Dhaka Range)
- Directorate of Health Services
Research and Profession Bodies:

- Accident Research Institute (ARI), Bangladesh University of Engineering and Technology (BUET)
- National Institute of Trauma and Orthopedic Rehabilitation (NITOR)
- Centre for Injury Prevention and Research Bangladesh (CIPRB)
- Centre for Rehabilitation of the Paralyzed (CRP)
- Red Crescent
- BRAC Road Safety Programme
- Media Communication Foundation (MCF)
- Nirapad Sharak Chai
- University of Rajshahi
- Truck and Bus Owners’ and Operators’ Associations
- Civil Societies
Improvement of road safety is a multi-disciplinary task and does not occur by itself. Road accidents are problems that cover many sectors (social, health and economic), which can only be tackled effectively if the state takes a leading role and responsibility with due commitment.
Efforts should be strengthened with due regards to the following:

- Making road safety a policy priority
- Designating a Single Central Agency for Road Safety
- Activating lead agencies
- Establishment of a reliable data set
- Seeking solutions of accident problems through correct procedures, standards, safety conscious planning and design and good practices
Undertaking a comprehensive approach to address the human, vehicle and environmental factors

- Improvement of the roadway system
- Changes in attitudes of drivers
- Providing appropriate training and education
- Making available requisite funding and resources
- Transferring and adapting best practices and interventions
- Foster safety research excellence through exchange and linkage with institutions at regional and international levels.
Road Safety Strategies: Paradigm Shift Needed

Fixing the System

Blaming Drivers
Crash Prevention: Factors & Strategies

<table>
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<tr>
<th>Human Engineering</th>
<th>Enforcement</th>
<th>Education</th>
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<tbody>
<tr>
<td>Integration into a road safety system</td>
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</table>

- **Human**
  - Electronic Stability Control
- **Vehicle**
  - 2001 Nissan Pathfinder
- **Environment**
  - International sign that says "SOFT BLIND RIDGES STEEP TRENCHES BIG TUNNELS GOOD LUCK!"
Urgent Necessity:

A 2nd Generation project supported by the World Bank and the Government of the Republic of Bangladesh:

• The most efficient and effective way to accelerate the achievement of ambitious safety targets in Bangladesh is to target the high social crash cost density corridors.

• The corridor would aim to:
  – accelerate the transfer of road safety knowledge to project participants;
  – strengthen the capacity of participating agencies, industries and community groups and
  – achieve quick proven results benchmark measures to allow a national roll-out programme.

• Would achieve this address the ultimate reductions in death and serious injuries and related social costs, and also would address the poverty alleviation impacts.
Proposed Road Safety Demonstration Project

Dhaka–Aricha Highway

(A section of Asian Highway)
Location Map of the Dhaka-Aricha Highway
Along the Route N 5

Dhaka-Aricha Highway section (Km post 11.9 to 87.3 of i.e. 75.4 km.)
Yearly Accident Trends along the Selected Highway (1982-2005)

Glimpses of Road User Behavior
Glimpses of Road Environment
Our Expectation and Proposals

We should focus very seriously to develop an appropriate response to this man-made epidemic and some essential requirements are:

• Considerable effort is needed to establish a comprehensive data system, sufficiently detailed and reliable to enable the major safety problems be identified and understood;

• Require government to give road safety issue a central importance in policy agenda and channels safety work on broad front setting specific targets like other countries (e.g. zero vision in Sweden) and monitoring outcomes;

• Institutional and Professional Capacity Building at national and regional levels;

• Promotion of Global Partnership, Regional Collaboration and Linkages and Exchanges,
Our Expectation and Proposals (contd…)

• Seeking Mechanisms for Technology Transfer, Knowledge Sharing and Good Practices

• Organise Regular Workshops, Seminars, Conferences to Address the Regional Safety Issues and Priorities

• Setting up Regional Safety Research Institutes to Foster Excellence in Research, Training and Good Practices

• Secure and Availability of Adequate Funding and Other Resources

• Support from International Aid Agencies and Other Specialized Institutes viz. World Bank, ADB, AusAID, WHO, UN, ESCAP, ARRB, REAAA, GRSP, IATSS are Vital
Establishment of “Australasian Road Safety Association/Foundation”

- Promote co-operation among national institutions, organizations, bodies and professionals.
- Establish regional and global networking of research findings and encourage technological transfer among the countries.
- Strengthen relationship with international Aid agencies
- Promote traffic safety at the regional and international levels and exchange efficient and urgent actions in education, legislation, awareness, research, engineering and technological interventions.
- Produce road safety resource materials, manuals, periodicals, newsletters and other documents.
- Help create a cadre of strong technical professionals/officials in the countries in the region (advanced courses, training modules)
We are greatly indebted to the South Australian Department of Transport, Energy and Infrastructure, The AusAID, The World Bank Global Road Safety Facility and The Organizers for Providing Supports toward our Participation in these Important Events.
THANK YOU