Presentation on Road Safety Progress in Bangladesh

Presented by

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**BRIEF DETAILS OF BANGLADESH**

- **Area**: 147570 sq. Km
- **Land Area**: 90%
- **Water Area**: 7%
- **Population**: 150 million
- **Growth Rate**: 1.43
- **Urban Area Population**: 25%
- **Literacy**: 65%
- **GDP**: $600 per head
- **Urbanization Rate**: 7% - 8%
ROADS DOMINATE PASSENGER SHARE

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Output in Billion Km</th>
<th>Share of Road Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>1974-75</td>
<td>17</td>
<td>9.18</td>
</tr>
<tr>
<td>1984-85</td>
<td>35</td>
<td>22.4</td>
</tr>
<tr>
<td>1988-89</td>
<td>57</td>
<td>38.76</td>
</tr>
<tr>
<td>1992-93</td>
<td>66</td>
<td>49.5</td>
</tr>
<tr>
<td>1996-97</td>
<td>72</td>
<td>52.56</td>
</tr>
<tr>
<td>2004-05</td>
<td>110</td>
<td>80.3</td>
</tr>
</tbody>
</table>
ROADS DOMINATE FREIGHT TRANSPORTATION

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Output in Billion Tonne-Km</th>
<th>Share of Road Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>1974-75</td>
<td>2.6</td>
<td>0.91</td>
</tr>
<tr>
<td>1984-85</td>
<td>4.8</td>
<td>2.304</td>
</tr>
<tr>
<td>1988-89</td>
<td>6.3</td>
<td>3.717</td>
</tr>
<tr>
<td>1992-93</td>
<td>9</td>
<td>5.49</td>
</tr>
<tr>
<td>1996-97</td>
<td>10</td>
<td>6.3</td>
</tr>
<tr>
<td>2004-05</td>
<td>18.6</td>
<td>13.392</td>
</tr>
</tbody>
</table>
COMPARATIVE ADVANTAGES OF MODES

Cost (cents/tonne-km): Road 7.6; Rail 4.5; Water 3
**ROAD STATUS OF BANGLADESH**

<table>
<thead>
<tr>
<th>Road Category</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highways</td>
<td>7822 km.</td>
</tr>
<tr>
<td>District Road</td>
<td>33250 km.</td>
</tr>
<tr>
<td>Upazilla &amp; Union Road</td>
<td>71611 km.</td>
</tr>
<tr>
<td>City Road</td>
<td>5680 km.</td>
</tr>
<tr>
<td>Motorized Vehicle</td>
<td>1.5 million</td>
</tr>
<tr>
<td>2 &amp; 3 Wheeler Vehicle</td>
<td>62%</td>
</tr>
<tr>
<td>Non-motorized Vehicle</td>
<td>3 Million</td>
</tr>
<tr>
<td>Road Transportation</td>
<td>80%</td>
</tr>
<tr>
<td>Railways Transportation</td>
<td>15%</td>
</tr>
<tr>
<td>Waterways Transportation</td>
<td>5%</td>
</tr>
</tbody>
</table>
ACCIDENTS STATUS OF BANGLADESH

- Number of Accidents: 20000
- On Highway: 50% (Aprox)
- On City Road: 20% (Aprox)
- Deaths: 4000 (police report)
- Injuries: 5000 (police report)
- On Highway: 48% fatal
- On City Road: 14% fatal
- Victim: 50% pedestrian
- Fatality Rate: 85 Death/10,000

Vehicle
- In Developed Countries: Below 5
- National Losses: 6500 Million USD
**MODE OF ACCIDENTS**

<table>
<thead>
<tr>
<th>Description</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number Of Black Spot</td>
<td>205</td>
</tr>
<tr>
<td>Black Spot On Bus Stand</td>
<td>50%</td>
</tr>
<tr>
<td>Hit Pedestrian</td>
<td>45%</td>
</tr>
<tr>
<td>VRU’s</td>
<td>80% of fatalities.</td>
</tr>
<tr>
<td>Children death road crash</td>
<td>10-14 years age.</td>
</tr>
<tr>
<td>Bus and Truck</td>
<td>35% and 29% of fatal accidents</td>
</tr>
<tr>
<td>Rear End</td>
<td>16.5%</td>
</tr>
<tr>
<td>Head On Collision</td>
<td>13.2%</td>
</tr>
<tr>
<td>Loss Control/Overturning</td>
<td>9.3%</td>
</tr>
<tr>
<td>On Bridge &amp; Culverts</td>
<td>2.5% of accident.</td>
</tr>
</tbody>
</table>
CAUSES OF ACCIDENTS

Divers Factor:

- Over Speeding.
- Overloading.
- Overtaking.
- Reckless Driving.
- Not Followed Traffic Rules/ Sign.
- Un-authorized Licenses Holders
- Unfit Vehicles
- Use of Mobile Phone.
- Absence Minds
CAUSES OF ACCIDENTS (Cont…)

- Overloading
CAUSES OF ACCIDENTS (Cont…)

- Overtaking
CAUSES OF ACCIDENTS (Cont…)

- Not Followed Traffic Rules/ Sign
CAUSES OF ACCIDENTS (Cont…)

- Use of Mobile Phone
CAUSES OF ACCIDENTS (Cont…)

Traffic Management Factor:
- Non-Motorized Vehicle on Highways.
- Have no access Control.
- Traffic Jam.
- Guest Vehicles On The Occasions.
CAUSES OF ACCIDENTS (Cont…)  

- Non-Motorized Vehicle On Highways
CAUSES OF ACCIDENTS (Cont…)

- Have no access Control
CAUSES OF ACCIDENTS Cont…

Awareness Factor:

- Lack Of Awareness Of Passengers.
- Lack Of Awareness Of Pedestrian.
- Tendency To Not Follow Traffic Rules.
CAUSES OF ACCIDENTS Cont…

Awareness Factor:

- Lack Of Awareness Of Pedestrian.
CAUSES OF ACCIDENTS Cont…

Road Factor:

- Not Proper Design For Road Safety
- Width Of Highways
- Link Roads
- Sharpe Turning Of Highways
- No Footpath & Foot Over Bridge
- Unplanned Bus Stand On Highways
- Obstruction In Sight Distance
CAUSES OF ACCIDENTS Cont...

- No Footpath On Highway
CAUSES OF ACCIDENTS Cont...

Enforcement Factor:

- Industries/Factories Adjacent to Highway.
- Footpath Occupied By Hawker.
- Temporary Vegetable Markets Beside Highway
- Accident Record Not Database.
- Lack Of Road Safety Audit.
- Unauthorized Parking On Highway
CAUSES OF ACCIDENTS Cont…

- Industries/Factories Adjacent To Highway
CAUSES OF ACCIDENTS Cont…

- Footpath Occupied By Hawker
CAUSES OF ACCIDENTS Cont...

- Temporary Vegetable Markets Beside Highway
CAUSES OF ACCIDENTS Cont...

- Unauthorized Parking On Highway
CAUSES OF ACCIDENTS Cont…

Weather Factor:

- Fog
- Heavy Rainfall
- Storm
MITIGATION ACTION

- 1st National Road Safety Strategic Action Plan 1997-1999 Approved by NRSC.

- Now 6th National Road Safety Strategic Action Plan (NRSSAP) 2011-2013 going on………

Vision of 6th NRSSAP:

- 50% by 2020 & 15-20% by 2013 reduction in road fatalities.

- 30% by 2020 reduction in road accident frequency.
HOW TO IMPLEMENT

✓ Planning, Management and Co-ordination of Road Safety -
  NRSC,BRTA,ARI(BUET),RHD,LGED.

✓ Road Accident Data System -
  Police, BRTA, ARI.
  Accident Data analyses by MAAP Software.
  Authentic Accident Data need for mitigation measure

✓ Road Safety Engineering –
  RHD,BRTA,DCC, DTCB, LGED, Police.
  VRU’s Consideration in New Highways Design.
  Design of 205 nos. Black spot improvement
  Safety Audit have to done in priority basis.

HOW TO IMPLEMENT Cont...

✓ Traffic Enforcement: Police, BRTA.
    Highway Petrol, Roadside Activities & Parking control.

✓ Driver Training and Testing: BRTA, DCC, ARI, NGO.

✓ Vehicle Safety:
    Annual vehicle inspection, roadside vehicle inspections, vehicle registration.

✓ Road Safety Education and Publicity. NCTB, BRTA, MoI, ARI, NGO’s:
    Formal, Non-formal education, adult programme and mass communication to improve knowledge, attitudes and behavior of all road users.

✓ Medical Services for Road Accident Victims:
    MoH, BRTA, Police, NGO, s-First Aid, Trauma centre, Ambulance
MAJOR NATIONAL HIGHWAY IN BANGLADESH

The Intensity of Accident Distribution on National Highway Network
<table>
<thead>
<tr>
<th>Collision Type</th>
<th>N2 Highway</th>
<th>N3 Highway</th>
<th>Rest</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hit Ped'n</td>
<td>47</td>
<td>48</td>
<td>42</td>
<td>42</td>
</tr>
<tr>
<td>Head On</td>
<td>17</td>
<td>16</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>Over Turn</td>
<td>10</td>
<td>10</td>
<td>13</td>
<td>13</td>
</tr>
<tr>
<td>Rear End</td>
<td>10</td>
<td>14</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Side Swipe</td>
<td>6</td>
<td>4</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Sub-total</td>
<td>89</td>
<td>91</td>
<td>89</td>
<td>89</td>
</tr>
<tr>
<td>Others</td>
<td>11</td>
<td>9</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>
‘Safe system' approach, which recognizes the mutual importance of safe road users, safe vehicles and safe roads.

Importantly, the road component remains a major consideration in safety management strategies.
PROMISING ACTIONS OF ROAD INFRASTRUCTURE SAFETY IMPROVEMENT

- Accident Black Spot Treatments
- Road Safety Audits
- Road Inspections and Assessment.
ACCIDENT BLACK SPOT TREATMENTS

• Accident black spot treatments have demonstrated high economic benefits and therefore demand priority consideration in Bangladesh.

• Desirably, emphasis should be placed initially on introducing low cost improvement schemes which proved to be highly effective.
ACCIDENT BLACK SPOT TREATMENTS

• Typical such safety measures are incorporation and treatments of:-
  - Road shoulders,
  - Pedestrian facilities (segregated footways, crossings),
  - Junction improvements,
  - Treatment of hazards,
  - Speed control devices,
  - Median barriers,
  - Access control,
  - Channelization,
  - Traffic islands,
  - Skid resistance treatment,
  - Improved delineation devices,
  - Safety zones etc. Including provision of divided roads.
ROAD SAFETY AUDITS

Common safety issues to be addressed include:

• Special safety provision and requirements of Vulnerable Road Users (VRUs).
• Bus stops including stationary/broken vehicles and roadside activities have significant traffic operational hazards.
• Inadequate and/or absence of delineation devices
• Roadside objects and the provision of clear zones
ROAD INSPECTIONS AND ASSESSMENT

• A new tool for systematic analysis of road infrastructure deficiencies and provides targeted countermeasures programs to improve road safety across an entire road network.

• Particularly address the safety of vulnerable road users and assess each stretch of roads for its safety for pedestrians, bicyclists, motor cyclists and car occupants separately.

• It offers 'vaccines for roads' and therefore demands priority consideration in Bangladesh for its application with international collaboration.
iRAP and its Applications in Asian Countries

- iRAP works in partnership with government and non-government organisations to:
  - Inspect high-risk roads and develop star ratings and safer roads investment plans
  - Provide training, technology and support that will build and sustain national, regional and local capability
  - Track road safety performance so that funding agencies can assess the benefits of their investments.
THE POTENTIAL OF iRAP IN BANGLADESH

• In March 2010, with the financial support of the FIA Foundation, the iRAP Bangladesh pilot project began. The aims of the project are to:

• Support the government of Bangladesh and the roads and highways division (RHD) in their efforts to make roads safe during the decade of action for road safety (2011-2020)

• Support the Bangladesh road safety coalition project, which is led by Bangladesh rural advancement committee (BRAC), the Centre for Injury Prevention Research Bangladesh (CIPRB), Chevron and the Accident Research Institute at the Bangladesh University of Engineering and Technology (ARI)

• Provide a practical demonstration of the iRAP approach to safety.
The pilot project focuses on two key roads:

- The Dhaka to Sylhet highway (N2), which is approximately 229km in length
- The Joydebpur to Mymensingh highway (N3), which is approximately 90km in length.
✓ In many ways, Bangladesh embodies the spirit of the United Nations Decade of Action for Road Safety.

✓ It is a nation where substantial road safety challenges exist, but where there is strong support for safety.

✓ The Bangladesh Government has been a keen supporter of calls for the declaration of a Decade of Action on Road Safety and is putting in place strategies to save lives.

✓ During a meeting to discuss the iRAP project, the Honorable Minister for Communications encouraged his departmental officials to ensure that plans for new upgrades are safe.

✓ The Roads and Highways Division has been quick to act on this direction.
There is also a very strong will outside of government, in the form of the Chevron, BRAC, Centre for Injury Prevention and Research Bangladesh (CIPRB) and Accident Research Institute (ARI) at the Bangladesh University of Engineering and Technology (BUET).

This provides a strong basis for iRAP activities in Bangladesh for the future. The results generated by the Pilot Project will guide improvements to the N2 and N3 Highways that will potentially prevent thousands of deaths and serious injuries.

However, iRAP also provides a strong basis to support the development, implementation and monitoring of road safety strategy in Bangladesh throughout the Decade of Action.
A section of AH2 Joydevpur to Elenga, 70 km, is being upgraded into 4-Lane with the provision of NMTs Lane at both side, 5 nos. Flyover, Bus-stand Separated from main Carriageway, Provision of footpath at the Bazar portion. The design has been prepared which is currently being reviewed by road safety audit team.
Accident Data: (Ch. 33+000 to 88+000) = 55 Km.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>ACCIDENT</th>
<th>DEATH</th>
<th>INJURY</th>
<th>TOTAL CASUALTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>88</td>
<td>25</td>
<td>120</td>
<td>145</td>
</tr>
<tr>
<td>2011</td>
<td>75</td>
<td>30</td>
<td>158</td>
<td>188</td>
</tr>
<tr>
<td>2012</td>
<td>35</td>
<td>16</td>
<td>110</td>
<td>126</td>
</tr>
<tr>
<td>2013(April)</td>
<td>12</td>
<td>8</td>
<td>32</td>
<td>40</td>
</tr>
</tbody>
</table>
ADDITIONAL CAUSES OF ACCIDENTS

✓ For Sharp Turning.
✓ Less Width of Carriage way (6.7m wide).
✓ No Additional Widening at Curve Portion.
✓ Narrow Bridges and Culverts.
✓ No Foot-Path on 600 m long Old Bridge.
✓ For Link Road.
✓ Many Brick Fields at the Adjacent of Road.
✓ Big Tress on inner side of Curve.
ACTION TAKEN

- Widening into 4-Lane at 11 nos. Selected Sharp Turning & Provide Divider.
- Trimming Tress from inner side of Curve.
- Extra Widening at another Curve Portion.
- Provide New Guard Post at the Approach of Narrow Bridges and Culverts.
- Construction of Foot-Path and Railing on 600 m long Old Bridge.
- Coloring at the Lower part of Tress.
- Widening at Major Bus-stand.
- Provide Rumble Strip at Sharp Turning.
- Setup Axle-load Control Station.
WIDENING (4-Lane) SHARP TURNING & PROVIDE DIVIDER (Cont…)

Previous Photo

Present Photo
WIDENING (4-Lane) SHARP TURNING & PROVIDE DIVIDER (Cont...)
TRIMMING TRESS FROM INNER SIDE OF CURVE
PROVIDE NEW GUARD POST AT THE APPROACH OF NARROW BRIDGES AND CULVERTS
CONSTRUCTION OF FOOT-PATH AND RAILING ON 600 M LONG OLD BRIDGE

Previous Photo

Present Photo
EXTRA WIDENING AT OTHER CURVE PORTION
WHITE COLORING AT THE LOWER PART OF TREES
PROVIDE RUMBLE STRIP AT SHARP TURNING
ACTION TAKEN

Operation of Axle-load Control Station:
CONCLUSION

- Bangladesh have many challenges like poverty, unemployment, political un-stability etc.
- Road safety is one of major challenge.
- But we are that nation who sacrificed 3 million life for liberation and mother language movement.
- Target have been set for decade Action Plan (2011-2020). 50% reduction in accident fatalities, 30% reduction in accident frequency.
- Though have many limitation, but we hope and believe we shall able to stop killing on the road.
!!! THANK YOU !!!