Improving road safety in OIC countries

Evaluation of road safety in the OIC Member countries and case study review

8th meeting of the COMCEC Transport and Communications Working Group

Ankara, 27 October 2016

Govert Schermers  Project Manager SWOV (and on behalf of co-authors Geert Smit, Henk Stipdonk, Britt Doornekamp and Siem Peters)
Contents

• Methodology and general approach
• Road safety in OIC countries
  – Global data
  – Literature review
  – Questionnaire surveys
• Case studies
• Conclusions
• Recommendations
Project objectives

• Reduction of fatal and serious injury crashes (and ultimately prevention of serious injury)
• Develop and provide a reference framework for road safety management
• Review status of road safety in OIC countries
  – Global level
  – Regional
  – Country specific
• Develop recommendations for road safety improvements
• Create deeper understanding and stimulate debate
Overall methodology

### Data collection phase

**T1: Literature Review**
- Inventory of relevant documentation
- Review of relevant documentation

**T2: Surveys**
- Development of online survey, including questionnaire
- Implementation of online survey and optimizing response
- Analysis of responses

**T3: Field visits**
- Development of interview scripts for case studies
- Field visits to Bangladesh, Cameroon and Morocco

### Synthesis phase

**T4: Conclusions and recommendations**
- Analysis of results from data collection
- Define conclusions and recommendations for the five main road safety categories
- Produce Final Report

**T5: Presentation of results**
- PowerPoint presentation highlighting the project’s conclusions and recommendations
- Presentation during the 8th meeting at COMCEC
Methodology
Data collection tasks elaborated

Literature review:
• International best practices
• OIC member countries: data (including WHO – global status reports, IRF, IRTAD) and literature on road safety status in OIC member countries.

Questionnaire survey:
• Two-step survey approach, with an initial screening survey and a more in-depth follow-up survey.

Case studies:
• Three case studies with field visits in Bangladesh, Cameroon and Morocco.
Road traffic fatality rates per 100,000 population, by region - WHO 2015

- Europe: 9.3
- Eastern Mediterranean: 19.9
- Americas: 15.9
- Africa: 26.6
- South East Asia: 17.0
- Western Pacific: 17.3
Road Safety Performance of OIC member countries

• Mortality versus(pcGNI) (Worldwide - 180 countries)

Source: Schermers, et. al : Improving Road Safety in OIC Member Countries
Final report 2016
Road Safety Performance of OIC member countries

- Mortality versus pcGNI (OIC countries)

Source: Schermers, et. al : Improving Road Safety in OIC Member Countries
Final report 2016
Road Safety Performance of OIC member countries

- Road deaths per 1,000 registered vehicles – OIC countries

Source: Schermers, et. al : Improving Road Safety in OIC Member Countries
Final report 2016
RSM in OIC countries – Desk research

Safe systems status - Africa region
RSM in OIC countries – Desk research

Safe Systems status - Arab region

- Safety Mgmt (Inst. Fmwk)
- Roads and Mobility
- Vehicles
- Road Users
- Post-Crash Care
- Road Safety Data
RSM in OIC countries – Desk research

Safe systems status - Asian region
Summary of status of Safe Systems applications

• High crash rates despite seemingly high score in RSM and other pillars

• Crashes in countries with seemingly well developed pillars have not yet been affected by the implemented improvements.

• The improvements describing the status of development in the pillars have no effect on crashes.

• WHO criteria do not reveal the true status of pillar development in OIC countries

• Hardly any international country scores high across all pillars

• Capacity reviews required for detailed evaluation
1. Survey results on road safety management and data

• Stage 1 (Screening)

<table>
<thead>
<tr>
<th>Group</th>
<th>Number of respondents</th>
<th>Countries:</th>
</tr>
</thead>
<tbody>
<tr>
<td>High income</td>
<td>1</td>
<td>Qatar</td>
</tr>
<tr>
<td>Middle income</td>
<td>5</td>
<td>Iran, Jordan, Palestine, Senegal, Morocco</td>
</tr>
<tr>
<td>Low income</td>
<td>3</td>
<td>Gambia, Guinea (partial response), Uganda</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>9 respondents</strong></td>
<td><strong>9 countries</strong></td>
</tr>
</tbody>
</table>
1. Survey results on road safety management and data

Stage 2 (In depth)

<table>
<thead>
<tr>
<th>Group</th>
<th>Number of respondents</th>
<th>Countries:</th>
</tr>
</thead>
<tbody>
<tr>
<td>High income</td>
<td>1</td>
<td>Qatar</td>
</tr>
<tr>
<td>Middle income</td>
<td>1, 1, 3, 3, 2, 1</td>
<td>Jordan, Tunisia, Indonesia, Iran, Nigeria, Senegal</td>
</tr>
<tr>
<td>Low income</td>
<td>1, 2, 1</td>
<td>Bangladesh, Gambia, Uganda</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16 respondents</strong></td>
<td><strong>10 countries</strong></td>
</tr>
</tbody>
</table>
Survey results on road safety management and data

KEY RESULTS – RSM

- Most respondents have national road safety strategy
- Lead agency
  - Not all have lead agency
  - Lead agency role limited (not all core functions)
  - No dedicated budget and inadequate resources (LIC)
- HIC and MIC good level of co-ordination across all, LIC focus on education, training
- Road safety targets not evident in responding LIC
- Research and development not well developed
- MIC and HIC apply more road safety instruments than LIC
- Focus on road network expansion and maintenance

Coordination; legislation; funding and resource allocation; promotion; monitoring and evaluation; R&D and knowledge transfer
Survey results on road safety management and data

KEY RESULTS – Roads and mobility; vehicles; road users; post crash response and data

- Road design standards of good quality (all countries) for national roads (less for regional and local)
- MIC and HIC have reasonable/good vehicle standards (compulsory airbags) and roadworthiness testing
- Theoretical/practical driving tests compulsory.
- Helmets compulsory but seat belts, child restraints, protective clothing not
- National response numbers available, limited special procedures and limited trauma resources and expertise
- Data for effective RSM, limited (LIC) to reasonable availability and quality (HIC)
CASE STUDIES

• Asian region
  – Bangladesh (April 2016)

• African region
  – Cameroon (September 2016)

• Arab region
  – Morocco (September 2016)
Historical developments - Bangladesh

Development of fatal and serious injuries in Bangladesh (www.bFTA.gov.bd)
Historical developments - Cameroon

Registered injuries and fatalities in Cameroon

Source:

ECORYS

SWOV
Historical developments - Morocco

Fatalities

Injuries

Source:

ECORYS
Case studies

Data management and quality

• **Bangladesh**
  – Crash data incomplete and underreported/recorded
  – Increase in under-reporting of serious and other injuries
  – Decline in data quality
  – Inadequate linkage between data sources
  – Traffic data incomplete

• **Cameroon**
  – Crash data incomplete and under reported/recorded
  – Questionable data quality
  – No linkage between data sources
  – Incomplete traffic data

• **Morocco**
  – Crash data reasonably complete but under registered
  – No linkage with hospital data
  – Traffic data limited
## Pillar 1 Road safety management – Overview current status

<table>
<thead>
<tr>
<th>Institutional and management functions</th>
<th>Bangladesh</th>
<th>Morocco</th>
<th>Cameroon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coordination</td>
<td>Moderate NRSC</td>
<td>Moderate CNPAC/DTRSR</td>
<td>Weak Ministry Transport/Public Works</td>
</tr>
<tr>
<td>Legislation</td>
<td>Weak</td>
<td>Moderate</td>
<td>Weak</td>
</tr>
<tr>
<td>Funding and resource allocation</td>
<td>Weak</td>
<td>Moderate</td>
<td>Weak</td>
</tr>
<tr>
<td>Promotion</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Weak</td>
</tr>
<tr>
<td>Monitoring and evaluation</td>
<td>Weak</td>
<td>Weak to moderate</td>
<td>Weak</td>
</tr>
<tr>
<td>Research and development</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Weak</td>
</tr>
</tbody>
</table>
## Overview status – Pillars 2-5

<table>
<thead>
<tr>
<th>Institutional and management functions</th>
<th>Bangladesh</th>
<th>Morocco</th>
<th>Cameroon</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roads and mobility</td>
<td>Extensive guidelines, poor road standards and condition</td>
<td>Reasonable standards and condition</td>
<td>Inadequate standards and guidelines, poor road condition and network</td>
</tr>
<tr>
<td>Vehicles</td>
<td>Inadequate standards and controls</td>
<td>Reasonable standards (and improving)</td>
<td>Inadequate standards and controls</td>
</tr>
<tr>
<td>Road users</td>
<td>Inadequate standards and control</td>
<td>Moderate standards (but improving)</td>
<td>Inadequate standards and control</td>
</tr>
<tr>
<td>Post crash</td>
<td>Inadequate (infrastructure and standards)</td>
<td>Reasonable (improving resources)</td>
<td>Inadequate (infrastructure and standards)</td>
</tr>
<tr>
<td>Traffic safety data</td>
<td>Inadequate</td>
<td>Inadequate</td>
<td>Inadequate</td>
</tr>
</tbody>
</table>
Conclusions

Outcome performance

- Wide ranging mortality rates (8.3 in Bahrain to 32.1 in Iran)
- Regional differences (African group 24.5; Arab group 21.2 and the Asian group of 16.1)
- Mortality rates in the OIC member countries in general higher than expected for LIC, MIC and HIC.
- OIC member countries can be stratified into four groups:
  1. HICs with much higher road mortality than average for other HICs.
  2. MICs with higher than average road mortality.
  3. MICs with lower than average road mortality.
  4. LICs with mortality that is high in an absolute sense.
Long-term trends

Source: Elvik, 2004
Road safety development phases related to income levels

- Most countries in OIC regions very much in the establishment phase with some in growth.
- Investment into road safety improvement generally lacking and resulting improvements in injury prevention/crash reduction limited.
## Recommendations - Policy measures for OIC member countries in the establishment phase

<table>
<thead>
<tr>
<th>Road safety pillar</th>
<th>Measures</th>
</tr>
</thead>
</table>
| Road safety management             | - Garner political support for road safety  
- Improvement of poor to medium quality road safety information systems  
- Assigning lead agency responsible for road safety management  
- Development of co-ordination structures  
- Development of policy review procedures  
- Setting of short term targets and long term initiatives  
- Develop and maintain specific delivery partnerships between government, NGO, community and business at the central, regional and local levels |

*Source:* ECORYS
## Recommendations - Policy measures for OIC member countries in the establishment phase

<table>
<thead>
<tr>
<th>Road safety pillar</th>
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</tr>
</thead>
</table>
| Safer roads and mobility | - Develop road network categorisation plans  
- Develop appropriate functional and operational characteristics for road types  
- Setting of appropriate speed limits  
- Encourage public transportation use  
- Develop strategies and plans for vulnerable road users  
- Secure funding for development projects |
| Safer vehicles | - Establish vehicle registration registers  
- Develop minimum standards for entry of vehicles on public roads  
- Develop roadworthiness criteria and monitoring systems  
- Develop enforcement strategies  
- Set standards and regulations regarding the use of vehicles |

*Source: SWOV ECORYS*
## Recommendations - Policy measures for OIC member countries in the establishment phase

<table>
<thead>
<tr>
<th>Road safety pillar</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safer road users</td>
<td>- Set the safety standards and rules and continuing compliance requirements that will ensure the safety of the individual concerned but also that of fellow road users</td>
</tr>
<tr>
<td></td>
<td>- Develop standards for driver licensing, testing and appraisal</td>
</tr>
<tr>
<td></td>
<td>- Driver offences monitoring</td>
</tr>
<tr>
<td></td>
<td>- Develop and implement educational programmes for school children</td>
</tr>
<tr>
<td></td>
<td>- Develop strategies to improve safety of vulnerable road users</td>
</tr>
<tr>
<td>Post-crash response</td>
<td>- Review the capabilities and capacity of trauma response units</td>
</tr>
<tr>
<td></td>
<td>- Establish key performance data and set targets</td>
</tr>
<tr>
<td></td>
<td>- Develop monitoring systems</td>
</tr>
<tr>
<td></td>
<td>- Implement regional pilot projects</td>
</tr>
<tr>
<td></td>
<td>- Develop strategies to improve capacity and resource allocation for trauma response and management</td>
</tr>
</tbody>
</table>
## Recommendations - Policy measures for OIC member countries in the establishment phase

<table>
<thead>
<tr>
<th>Road safety pillar</th>
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<tbody>
<tr>
<td>Road safety data</td>
<td></td>
</tr>
<tr>
<td></td>
<td>· Establish central computerised transport and driver licensing registries to manage data on the number of vehicles and drivers on the road which are easily accessible for enforcement agencies</td>
</tr>
<tr>
<td></td>
<td>· Establish a reliable crash reporting and recording system</td>
</tr>
<tr>
<td></td>
<td>· Develop programmes to obtain supplementary data for road safety management (traffic volumes; speeds; etc.)</td>
</tr>
</tbody>
</table>

*Source:* ECORYS

*Source:* SWOV
## Policy measures for OIC member countries in the growth phase

<table>
<thead>
<tr>
<th>Road safety pillar</th>
<th>Measures</th>
</tr>
</thead>
</table>
| Road safety management | • Foster relationships to maintain political support for road safety  
 • Development of medium to high quality management information system  
 • Coordination central levels  
 • Adopting short to medium term road safety targets  
 • Analysing what can be achieve in the medium term  
 • Develop and maintain specific delivery partnerships between government, NGO, community and business at the central, regional and local levels |
## Policy measures for OIC member countries in the growth phase

<table>
<thead>
<tr>
<th>Road safety pillar</th>
<th>Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Safer roads and mobility</td>
<td>· Implement large scale remedial road improvement projects</td>
</tr>
<tr>
<td></td>
<td>· Implement strategic road network development plans</td>
</tr>
<tr>
<td></td>
<td>· Implement large scale improvement projects for vulnerable road users</td>
</tr>
<tr>
<td></td>
<td>· Adopt an integrated approach to road infrastructure planning and provision</td>
</tr>
<tr>
<td></td>
<td>· Adopt a Safe Systems approach to road design</td>
</tr>
<tr>
<td>Safer vehicles</td>
<td>· Maintain and improve vehicle registration and licensing</td>
</tr>
<tr>
<td></td>
<td>· Vehicle roadworthiness</td>
</tr>
<tr>
<td></td>
<td>· Vehicle standards</td>
</tr>
<tr>
<td></td>
<td>· Traffic offence monitoring of roadworthiness</td>
</tr>
<tr>
<td></td>
<td>· Public transportation vehicle standards</td>
</tr>
<tr>
<td></td>
<td>· Commercial vehicle standards</td>
</tr>
</tbody>
</table>

*Source:* ECORYS

*Source:* SWOV
# Policy measures for OIC member countries in the growth phase

<table>
<thead>
<tr>
<th>Road safety pillar</th>
<th>Measures</th>
</tr>
</thead>
</table>
| Safer road users        | Review and set the safety standards and rules for continuing road user compliance.  
                          |  
                          |   • Driver licensing and testing  
                          |  
                          |   • Offences monitoring  
                          |  
                          |   • Targeted law enforcement and critical driver offences monitor  
                          |  
                          |   • Informed educational and publicity campaigns for improved road user behaviours  
                          |  
                          |   • Securing legislative resources for road safety  
                          |  |
| Post-crash response     | Emergency response goals and monitoring  
                          |  
                          |   • Fleet assessment  
                          |  
                          |   • Quality reviews emergency and trauma care  
                          |  
                          |   • Protocols and standards  
                          |  
                          |   • Funding for emergency and trauma care  
                          |  

*Source:*
## Policy measures for OIC member countries in the growth phase

<table>
<thead>
<tr>
<th>Road safety pillar</th>
<th>Measures</th>
</tr>
</thead>
</table>
| Road safety data   | · Evaluate and improve crash registrations  
|                    | · Develop supportive Safety Performance Indicators (SPIs)  
|                    | · Establish central computerised transport and driver licensing registries to manage data on the number of vehicles and drivers on the road which are easily accessible for enforcement agencies  
|                    | · Establish linkages between national causes of death statistics to assess and validate traffic fatalities;  
|                    | · Establish or adopt tools for local highway and police authorities to undertake data collection, analysis and monitoring techniques and database management.  
|                    | · Report road safety results and progress made and make interactive crash data systems available on the Internet.  

Source: [Swov](https://www.swov.nl)
Thank you for your attention

QUESTIONS ????

Source:
## Economic status OIC countries

<table>
<thead>
<tr>
<th>Low Income Countries</th>
<th>Medium Income Countries</th>
<th>High Income countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afghanistan, Bangladesh, Benin, Burkina Faso, Chad, Gambia, Guinea, Guinea-Bissau, Mali, Mozambique, Niger, Sierra Leone, Somalia, Tajikistan, Togo, Uganda</td>
<td>Albania, Algeria, Azerbaijan, Cameroon, Côte d’Ivoire, Djibouti, Egypt, Gabon, Guyana, Indonesia, Iran, Iraq, Jordan, Kazakhstan, Kyrgyzstan, Lebanon, Libya, Malaysia, Maldives, Mauritania, Morocco, Nigeria, Pakistan, Senegal, Sudan, Suriname, Tunisia, Turkey, Turkmenistan, Uzbekistan, Yemen</td>
<td>Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates</td>
</tr>
</tbody>
</table>

*Source:*