APPRAISAL OF ROAD SAFETY IN GCC COUNTRIES

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ABSTRACT

Road accidents is a serious problem throughout the world, in social, health and economic terms. Between 50 and 200 people are killed each year for each million inhabitants in most developed as well as developing countries. The scale of the problem in developed countries is mainly due to a high degree of motorization, while in developing countries, including the countries of Gulf Cooperation Council (GCC), factors such as the comparative lack of safety culture and features, and the correspondingly high accident rates are the main contributors.

The overall objective of this paper is to evaluate the road safety situation and the road safety work in the GCC countries with the aim of identifying key measures that would reduce road traffic accidents. The paper presents the road safety development in the GCC countries, reviews the road safety strategies, programs and activities then presents a number of identified initiatives recommended for sustained reduction of road traffic accidents and improvement of the road safety situation in the GCC countries. The issue of the implementation of the proposed measures is emphasized.

1- INTRODUCTION

Gulf Cooperative Council (GCC) countries consist of six countries namely Saudi Arabia, Oman, United Arab Emirates(UAE), Kuwait, Qatar, and Bahrain. The GCC countries have a large proportion of expatriates who come from a variety of countries with different backgrounds, driving cultures, training and testing systems thus producing a very heterogeneous road user population which is reflected on the road safety situation
in the said countries. The estimated Economic loss to the gulf states from road accidents ranges between 2.5% and 4.5% of their Gross Domestic product (GDP) (3%-4% in the case of Kuwait) [7].

Over recent years, many GCC countries have implemented road safety strategies that combine enforcement measures, engineering, and education and legislation measures to target road safety challenges. One of the key issue of these strategies is to improve the accident database which could promote a more detailed exploration of the causes of road accidents, and better understanding of the circumstances that lead to causalities [2].

As a result, accident rates, expressed as the number of fatalities per 100,000 population started to drop but there is still a big gap compared to the leading road safety countries such as Sweden and the UK. Hence, further action with regards to road safety is necessary. This can also include further development of road safety remedial measures.

2. AN OVERVIEW OF THE ROAD SAFETY LEVEL IN GCC COUNTRIES

2.1 Accidents and Violation Statistics

Kingdom of Saudi Arabia

According to available statistics released by the kingdom’s General Traffic Department, about 544,000 accidents took place on the kingdom’s roads in 2012, causing the death of 7,153 people [3]. An average of 19 people are killed every day and three out of four fatal accidents are related to speeding.

Dubai

In 2014, a total of 1.4 million vehicles were registered in Dubai [3] where 2,588 serious traffic accidents occurred and 159 people died in traffic accidents. Dubai, where the city is planning to eliminate road deaths by 2020 – there were 1.3 million speeding violations and 12,030 incidents of motorists running a red light.
Qatar

According to current figures, around 220 people lose their lives and a further 500 are seriously injured each year in Qatar as a result of accidents. Qatar’s Ministry of Development, Planning and Statistics (MDPS) show that the number of private vehicles registered stood at 6,281 in November 2014 compared with 5,633 in October 2014, an increase of 11.5 percent in just one month. Also, in November the number of driving licenses issued rose by 16.3 percent [3], 25 people died in traffic-related incidents in November 2014. The Internal Security Force recorded a total of 341,170 traffic violations during 2014, and majority of the violations involved stunt driving and overtaking from right.

Those numbers are regretfully confirming grim predictions that number of traffic accidents in Qatar would reach 220,000 annually by 2015. This was an estimate of 2012 study by Qatar University, and since then the population and the number of vehicles has significantly grown: the Qatari population grew by more than 200,000 in 2014 compared to 2013, and according to the MDPS.

Oman

Oman’s official statistics show that more than 900 people died in road accidents in 2013 and nearly 11,000 were injured and that 70 people die every month in traffic accidents. One third of all accidents are caused by drivers who run red lights, with speeding, texting while driving and general negligence being other major culprits. Data released by the Royal Oman Police show that a total of 3,889,301 fines were imposed in 2013 for various traffic offences [3].

Kuwait

The total number of traffic violations in increased sharply from 3,716,039 and 3,448,815 in 2012 and 2013 (an average of 2 violation tickets per vehicle), to 6,574,327 in 2014, (3.4 violation tickets per vehicle). The increased number of violations either suggest a worsening situation, or an improvement in police deployment. However, this
increase may be partly explained by the introduction of advanced automated police enforcement systems such as speed cameras and red light cameras.

The most common traffic violations were found to be parking, speed limit offences, not wearing a seat belt, car safety violations, running red traffic lights. Administrative violations, such as driving with an expired driving licence or vehicle registration, driving without registration plates, driving without insurance, using false plates, driving trucks at prohibited periods, damaged licence or plate, and driving without holding a driving licence, shows drivers’ disrespect for traffic regulations.

If parking violations and administrative violations are excluded from the count (as they are not significant causes of accidents), speeding violations including racing on the highway can be said to account for 73% of the total offences in 2014, a reflection of driver attitudes toward speeding. Passing red traffic lights accounted for an average of 14% of the total violations in the same year.

2.2 Accident Rates

Statistics show that the fatality rate per 100,000 population in the GCC countries are substantially higher than those in developed countries. The rate in selected 15 European countries was found to show a steady decline toward vision zero where it was 13.5 in the year 1980 dropping significantly to 5.5 in 2010. The same rate showed only a small drop in GCC countries over the same period from an average of about 24.5 in 1980 to about 23 fatalities per 100,000 population in 2010 (Figures 1 and 2)[1].
Figure 1 Fatality rates in GCC countries (1980-2010) (Al-Madani 2013)

Figure 2 Fatality rates in GCC countries (1980-2010) (Al-Madani 2013).

Figure 3 shows a recent statistical data available of the fatalities rates in Arabian Gulf Countries which share the same culture. Kuwait’s fatality rate per 100,000 population is the second lowest after Bahrain, while Oman is the highest and Saudi Arabia is not far away from the Oman level.

Although the fatality rate per 100,000 population in UAE and Qatar is higher than Kuwait and Bahrain, they have downward trend in recent years. However, these
rate are much higher than developed countries such as UK and Sweden where the fatality rate per 100,000 population are 2.75 and 3.0 respectively [9].

Figure 3 Fatalities per 100,000 inhabitant in the GCC countries

(Sources: Annual Statistics from the Ministries of Interior of Saudi Arabia, Kuwait, Bahrain, Oman, Qatar and Emirates)

3. THE CURRENT ROAD SAFETY IMPROVEMENT PROGRAMS

The most well-known remedial measures for road safety improvement are based on the ‘4 Es’ (Education, Enforcement, Engineering, and Emergency) with an additional 2 Es recommended namely, (Evaluation and Encouragement) and the two Cs (Coordination and Cooperation) need to be applied together in order to reduce accidents. These measures have been applied in different countries (developed and developing), giving an indicator of achievements in changing drivers’ attitudes and behaviour, hence reducing the number of accidents and their severity. Developing countries such as GCC should take advantage of the experience of the developed countries by taking into consideration differences in behavioural, cultural and economic aspects.
SAUDI ARABIA (Riyadh)

Saudi Arabia has one of the highest accident rates in the world but a lot of efforts have been made to improve this record through the implementation of road safety strategy in Riyadh (from 2003-2012). The goals of this strategy were

1) evaluation of road safety situation

2) identifying the most weakness point in road safety

3) identifying the appropriate remedial measures

4) propose an optional strategies based on the traffic environment for future implementation.

Ten authorities were involved for implementing this strategy in terms of 1) road safety engineering and management 2) traffic law enforcement 3) traffic education and awareness 4) medical emergency and 5) Vehicles Safety.

Another action related to law enforcement was taken when the kingdom launched a traffic Control System called SAHER with the purpose of minimizing accidents and maximizing the overall traffic efficiency.

SAHER Traffic monitoring system, is basically an Automated Traffic Violations Administering and Monitoring Program which consists of

1) Traffic management system

2) Auto Vehicle Location

3) License plate recognition

4) Monitor Closed Circuit TV

5) Law enforcement system.
The Overall goals of this program are summarized as follows

1) To implement country traffic both efficiency and effectively

2) to increase driver an residents safety and enhance road safety

3) To assist the police force in monitoring traffic violation impartially and maintaining road safety [10].

Further actions include updating the medical emergency system to be fast response and introducing the rescue helicopter. In addition, traffic awareness campaigns and publicity supported by mass media were intensified.

As a result of the above-mentioned actions, the number of fatalities in Riyadh has reduced by 46% over a ten-year period as shown in figure 4.

![Riyadh Fatalities](attachment:image)

Figure 4 Distribution of fatalities in Riyadh (2003 – 2013)
UAE (Dubai)

The Roads and Transport Authority (RTA) in Dubai was established in 2006 with the vision of safe and smooth transport such as designing, constructing, maintaining road infrastructure, safety improvement programs, that helped to reduce road fatalities on Dubai roads[8].

Various traffic safety improvement projects and schemes were introduced. These include Road Safety Strategy, Pedestrian Safety and Mobility Action Plan, Road Safety Auditing, Accident Black-spots programs, Roadside improvement programs, Work Zone improvement programs, Speed Management programs, Traffic Awareness Programmers, Zone wise auditing programmers, Traffic calming measures in residential and school zones and also adopting new standards and manuals which are based on best international practices. As a result, the number of fatalities reduced significantly as shown in figure 5 and the fatality rate per 10,000 population was reduced from 21.9 in 2006 to 6.7 in 2011[5].

Figure 5 Distribution of fatalities in Dubai (2006 – 2014)
KUWAIT

Implementation of the National Transport Sector and Road Safety Strategy 2011-2020, between UNDP and Ministry of Interior in Kuwait has been proposed. The project has to fulfill requirements of the UN Decade of Action 2011-2020 Plan which has been endorsed by Kuwait, and requirements of the UN General Secretary's Post-2015 Plan, which will replace the Millennium Development Goals.

The project aims to develop an efficient traffic demand management, road safety and enforcement system, integrated information system, institutional reform, efficient taskforce, and monitoring and evaluation system that will assist planning, implementation and management of sustainable transport system. It also aims to improve capacity of the stakeholders in understanding traffic problems based on evidence and research, evaluate performance, strengthen coordination, and promote better initiatives and community awareness for efficient policy development, implementation schemes and reduction of negative socioeconomic costs.

The project will create an electronic system to overcome current manual-paper data practice, improve planning and design process, analyze information, reduce severity, frequency, and cost to the community of road accidents, alleviate congestion, optimize movement of people and goods, strengthen law enforcement, and reduce gasses which contribute to climate change, with Geographical Information System (GIS), which will be made available through website, mobile phones, and reports to a wide audience including planners, engineers, researchers, students, NGOs, political leaders, decision makers, and community.[4]

Implementation of the National Traffic and Road Safety Improvement Project for the period 2011-2014, include:

1. National Traffic and Road Safety Information (and Geographical Information System) System.

3. Establishment of a National Traffic Training Centre of Excellence.

4. Monitoring of the National Traffic, Transport and Road Safety Strategy

5. Implementation and provide technical advice for relevant organizations.

6. Training program and workshops for the national cadres.

7. Media campaign.

8. Promotion of year 2015 target to reduce road fatalities by 30%.

**Policy Reform and Project Impacts Nationally**

1. UNDP Role and Value Added
Involvement of the UNDP in the projects has added value in various areas such as providing high level policy advice, enhancement of procurement process, efficient coordination with stakeholders and Ministers Council, and transfer of knowledge.

2. Development of Integrated Data Management System to support practitioners and decision makers in tackling traffic problems.

3. National Traffic Engineering and Enforcement System to enhance movement of people and goods and optimize transport system efficiency.

4. National Road Safety and Blackspot System to minimize severity, frequency and cost to the community of road traffic accidents. The 2015 Goal has been defined to reduce road traffic fatalities by 30%.

5. Institutional Reform and HR Development to enhance the capacity of General Directorate of Traffic, and establishing new National Transport Authority.

6. National Traffic Awareness Campaign to advance the community awareness on the use of the road and transport networks.

7. Monitoring and Evaluation System to monitor performance and efficiency of the action plans against the required targets.
Key Operational Achievements in 2013

The key policy reform tasks of the project have included the commencement of the General Directorate of Traffic reform and capacity building with a clear vision for traffic and transport sector during the next 10 years, and linking NTTS to the National Development Plan. This includes efficient transport-urban planning system, integrated information system, reduction of severity, frequency, and cost to the community of road accidents, congestion management, sustainable transport system, efficient traffic law enforcement, building national task force, and Monitoring and Evaluation with performance indicators. The tasks have also included institutional reform to restructure the General Directorate of Traffic (GDT), and establish a new General Transport Authority (GTA).

In 2013, and in the process of achieving the above reforms, the project has achieved 97% of its components of the approved 2013 Work Plan, while continuing to work on the outputs related to developing issues such as unified specifications, traffic management, GIS, data analysis, enforcement, road safety, and congestion.

Awareness raising activities included the organisation of a workshop during the annual Gulf Traffic Week, and participations in regional meetings, international conferences, and organising of an exhibition at UN Day celebration. As the project promotes the UN Decade of Action Plan in Kuwait, a website has been created to promote Kuwait as an active country in the Traffic area among 18 other countries.

2013 witnessed significant traffic enforcement improvements as a result of the UNDP project which also enhanced the procurement process for efficient delivery of required goods and services in the most transparent way while avoiding government bureaucracy.

In progress towards achieving the project outcomes, the following outputs were completed in 2013 include:

1. Reduction of road traffic fatalities to 445 compared with the base year of 460 fatalities, reduction of road traffic injuries (transferred by the ambulance) to 8577 compared with 9959 in 2012, monitoring of congestion levels, and reduction of traffic offences to below 3.5 million.
2. A comprehensive procurement plan for services and equipment as well as a detailed RFP with technical and financial requirements were prepared and procurement process initiated.

3. Development of specifications, procedures, protocols, data analysis, GIS, traffic management, congestion, enforcement, accidents and establishment of interagency coordination.

4. Development of a traffic police patrol system to enhance capacity.

Blackspot Protocol developed, blackspots identified in several Governorates and treatments commenced.

5. Protocol for identification of blackspot locations according to their priority established.


8. Develop procedures to assess system effectiveness.

9. Development of traffic and GIS information system, and database.

10. Development of a traffic police patrol system to enhance capacity especially.


Furthermore, engineering, education, and enforcement programs, such intensive presence of traffic police patrols during peak hours, the use of speed cameras, increase traffic awareness programs, were introduced to improve road safety in Kuwait.

Despite all these efforts, the road safety problem still persist. An important reason for this is the lack of coordination between many authorities (26 authorities). The recent establishment of the General Transport Authority (GTA) could help to solve this problem.
Qatar

The National Safety Committee (NTSC) was established in 2010 under the direction of His Excellency Sheikh Abdullah Bin Nasser Bin Khalifa Al-Thani, Minister of State for Internal Affairs. The NTSC designed Qatar’s National Road Safety Strategy 2013-2022, which lays the foundations for a safe road transport system that will benefit future generations. The outcome was in the form of a National Road Safety Action Plan according to which 200 individual measured actions must be taken. These actions are to be delivered by 13 government and semi-government agencies across Qatar over the next five years, with an updated Action Plan to be released after this timeframe of monitoring and evaluation. The Action Plan aims to raise road safety performance in Qatar to be among the best in the world. This will be achieved through an ambition of activities and projects to be implemented over the next 5 years (from 2011 to 2016).

The resulting strategy has been developed using the Safe System principle, which has been adopted internationally as the leading model for devolving and implementing road-safety initiatives.

The Safe System is based on anticipating and accommodating human error and is structured around Safe Road Users (road user education), Safe Vehicles (promotion of vehicle safety features), Safe Roads (roads and roadsides to be designed, built and maintained to reduce the risk and severity of crashes) and Safe Speeds (the setting of appropriate speed limits, supplemented by enforcement and education).

The National Road Safety Strategy and Action Plan in Qatar are guided by long term vision for road safety supported by challenging but achievable 10 years ambitious and long term vision. The vision recognizes that we could ultimately prevent many deaths and serious injuries if the community as a whole is prepared to make a fundamental change in it’s approaches to road safety. This strategy represent a significant step towards achieving Qatar’s long term vision for safe road transport system.

Qatar has achieved substantial improvement in road safety in recent years. Between 2000 and 2006 the annual number of road crash fatalities increase steadily until
2007 when a decrease in the number of fatalities took place and has been almost steady since then with about 220 people killed each year, although the population in Qatar continues to increase [6].

4- INITIATIVES TOWARDS ROAD SAFETY IMPROVEMENT

Decisions upon remedial measures should be evaluated carefully, considering the effectiveness of each remedial measure in reducing the rate of accidents under similar conditions. It should be noted, however, that measures that are very successful in achieving significant major benefits in certain countries or part of a country may not be that successful in another country or part of a country, due to the complexity of the inter-relationship that exists among the traffic variables and driver attitudes.

Some important work will provide future efforts towards improving road safety in GCC countries. It should be noted that some of these measures are already implemented in some GCC countries or included in their strategies. The recommended efforts include, but are not limited to, the followings:

1- An update of Traffic laws and introduction to penalty point system
2- Installation of red-light and speed cameras
3- Development of a process and guideline for Road Safety Audit which will improve the safety standard for new roads
4- Devising a pedestrian crossing strategy
5- Review of the Highway Design and Traffic Manuals
6- Improvement of processes and standards for working zone
7- Development materials and guidelines for road safety education in school
8- Introduction of theory and practical components to the driving test
9- Introduction of system and help with response to road crashes.
10- Development of world-class emergency medical services system.
11- Allocation of sufficient funding
12- Establish a system for continuous cooperation and coordination between the various stakeholders at all levels; national, regional and international
13- Adopting a system for the identification of potential countermeasures
14- Adopting a system for the evaluation of road safety performance
15- The need to focus on the implementation, rather than only devising, of plans

Furthermore, Traffic departments have no control over the road accident data which has a negative impact on road safety improvement, reliability of data, identification of accident black spot and development of effective Strategy. Thus the two Cs (Coordination and Cooperation) are important in tackling this problem, taking into consideration that there is no one remedy to improve driver behaviour or attitudes.

5- CONCLUSIONS

This work shed some light on the road safety situation in GCC countries. The results of the investigation shows that the magnitude of the problem is high compared to developed countries and GCC countries still suffer from sustainable increase in accidents despite the efforts to reduce the magnitude of the problem. Road safety implementation in Riyadh, and Dubai have achieved fatal and injury reduction so, other gulf countries should take it as a good example of road safety achievement.

Many of the countries developed their strategies to combat the problem but in order to be successful a set of recommendations are outlined together with some future necessary actions.

The five Es (Education, Enforcement, Engineering, Encouragement, and Evaluation) and the two Cs (Coordination and Cooperation) need to be applied together in order to reduce accidents.
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