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SEMINAR PAPER

ROAD SAFETY IN NEPAL

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Road Safety in Nepal: Initiatives and Challenges¹

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1. Introduction

- PALPA, June 10, 2012: At least 35 were injured when a passenger bus (Lu 1 Kha 3802) veered off the road and fell some 20 meters down the hill on Sunday, police said.
- CHITWAN/BUTWAL, June 4, 2012: A speeding bus veered off and fell some 50 meters down from the road at Daunne of Nawalparasi district late Monday afternoon, killing five passengers and injuring 19 others, including nine women.
- BHAKTAPUR, June 1, 2012: Fifty-two people have been injured when a bus bound to Changunarayan met with an accident at Dhungepati in Bhaktapur on Friday.
- SINDHUPALCHOWK, May 31, 2012: Five people including a toddler were killed and 26 injured as a bus heading for Tatopani from Kathmandu plunged 50 meters from the road into Sunkoshi River in Sindhupalchowk district Wednesday. A two-year-old girl is missing in the river.
- Kathmandu, May 6, 2012: At least nine people were killed in a road accident Sunday in Nepal's Kaski district where an avalanche-triggered flood has created havoc since Saturday, local media reported.

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- BHAKTAPUR, April 6, 2012: A passenger bus bound for Changuarayan from Bhaktapur met with an accident at Bakunepati, Chhaling-3, Friday morning, injuring fourteen people aboard.

The above news clips are some of the examples of thousands of road accidents that took place in Nepal in the year 2012 only. There are cases of airplane accidents also in Nepal. The *Global status report on road safety 2013* presents information on road safety from 182 countries, accounting for almost 99% of the world's population. The report indicates that worldwide the total number of road traffic deaths remains unacceptably high at 1.24 million per year. Only 28 countries, covering 7% of the world's population, have comprehensive road safety laws on five key risk factors: drinking and driving, speeding, and failing to use motorcycle helmets, seat-belts, and child restraints.

According to World Health Organization (WHO), every year more than 1.3 million people die and another 50 millions are injured in road accidents around the world. About 70 percent of the death occurs in developing countries. Over 90% of the world's fatalities on the roads occur in low-income and middle-income countries, even though these countries have less than half of the world's vehicles. 65 percent of deaths involve pedestrians and 35 percent of pedestrian deaths are children.

2. National statistical trends in road accident

It is difficult to be accurate about the number of road accident as many accidents, including ones where people are injured, are not reported to the Police. Generally, only those accidents with high injury or property damage or with disputes are reported and recorded in the police office. Road accidents are increasing in Nepal due to increased number of vehicles. Considering the heavy loss of lives and wealth in road accidents the concerned road and traffic management agencies have started to incorporate road safety issues in their program but it seems inadequate as the losses of life and property from road accidents is increasing. Trend of road accidents and losses of life and property is increasing in recent year. However, the figures do not give the full accident picture. Experience shows that a fairly large number of accidents are never reported to the police, mainly because the involved parties want to settle the matter between them. This under-representation is assumed to be less pronounced for severe accidents.

Table1: National statistical trends in road accident (2001-2010)

Year	Accidents	Fatalities	Serious injury	Slight Injury	Injury/fatal ratio	Fatality per 10,000 Vehicles
2001- 02	3,823	879	458	4,138	5.23	66.2
2002- 03	3,864	682	785	4,442	7.66	48.38
2003- 04	5,430	802	1,659	3,925	6.96	52.04
2004- 05	5,532	808	1,795	4,039	7.22	49.42
2005- 06	3,894	825	1,866	3,655	6.69	47.64
2006- 07	4,546	953	2,583	5,331	8.30	50.17
2007- 08	6,821	1,131	2,663	5,245	6.99	54.9
2008- 09	8353	1356	3609	6457	7.42	60.21
2009- 10	11747	1734	4130	7383	6.64	67.13
Sum	54,010	9,170	19,548	44,615	7.00	

Source: Nepal Police, Traffic Directorate

As per the Traffic Police statistics, there were 8,656 road-traffic accidents in the fiscal year 2010- 011 resulting in 1,689 fatalities, 4,071 serious injuries and 9,133 minor injuries. However, these figures may not truly reflect the actual number of casualties occurring in Nepal as past researches have indicated that Road Traffic Accidents (RTAs) are under-reported, particularly, the minor injuries. Taking these under-reporting into account, a recent study estimated that there were 13,247 road traffic accidents in fiscal year 2009-010 resulting in 1,734 fatalities, 4,130 injuries (minor and serious) and 7,383 damage-only accidents. Comparing the road traffic fatalities with the cumulative number of vehicles registered in the country during this period (i.e. 1,016,270), Nepal's fatality rate in fiscal year 2009- 010 was 17 per 10,000 registered vehicles, which is one of the highest rates in both Asia and the world. The fatality rate is actually higher than 17 if the number of vehicles phased out or scrapped and under-reporting are taken into consideration. According to the latest WHO data published in April 2011, Road Traffic Accidents Deaths in Nepal reached 2,527 or 1.70% of total deaths. According to the traffic police data, on average seven to eight people are killed in road accidents every day in Nepal.

3. Current national Government policy for road safety

Government of Nepal (GON) is active in road safety, since 1995 the initiatives are on, but not known widely. GON has mechanisms responsible for road safety, but hardly active in response to promoting safer roads. Road Safety Action is considered as Traffic Action, thus becoming punitive, legalistic rather than a social change action. Civil Society Initiatives are also not strong enough as these are mainly focused on events, fragmented actions. Lack of coordination, comprehensiveness and isolation of actions are main issues. GON has taken some initiatives to make roads safe. Some of them are: Road Safety Strategy, Road Safety Audit, Law and Policies, Deployment of Mechanisms, and Trauma Centers.

The establishment of a central agency that can effectively coordinate all the stakeholders involved in road-safety is the basic requirement for improving road-safety in any country. This need arises from the fact that road-safety concerns virtually all sections of the society and government. The National Road-safety Council (NRSC) in Nepal is already in existence which is headed by the Secretary of the Ministry of Labour and Transport Management (MOLTM). However, this council has been dormant since its establishment.

The UN Global Action mandates member countries to develop their individual national plans for the decade (2011 to 2020) incorporating interventions under the following five pillars to road-safety.

- Road safety management
- Safer roads and mobility
- Safe vehicles
- Safer road users
- Post-crash response

With a vision for safe road-infrastructures and services backed with effective post-crash response and conducive environment resulting in little or no casualties from the Road Traffic Accidents (RTAs), and mission to mitigate the loss of life, properties and economic loss from RTAs, and complement the broader mission of the National Strategy on the Prevention and Control of

Violence, Injuries and Disabilities, the GON has chalked the following strategies to adopt for road-safety improvements.²

1. Ensure collaborative inputs from all the stakeholders to formulate an action plan incorporating the five pillars of road-safety and hence guarantee ownership.
2. To improve horizontal coordination, effectively manage the various interventions and champion road-safety issues, study the option of re-establishing a high-level NRSC with the legal authority to delegate various agencies.
3. Have the NRSC monitor the road-safety initiatives of different agencies. For some of the activities related to policy development, the NRSC will conduct the works in question itself.
4. Have the NRSC regularly disseminate its research findings, delegate specific responsibilities to the various stakeholders and legally mandate regular reporting requirements from them.
5. Enumerate the specific interventions required to reduce the RTA severity with reference to the good practices outlined in the UN Global Action Plan.
6. As a policy document developed and endorsed from the stakeholders, the concerned line agencies will follow this action plan to improve and manage road-safety in an integrated manner.
7. Amend the acts and regulations in order to accommodate road-safety requirements adequately and ensure an enabling policy.
8. Formulate a national target for RTA reduction. As signatory to the Busan Meeting, a target of 35~ 50 % reduction of RTA recommended by this meeting will form as a basis for setting the national target.
9. To ensure funds for road-safety interventions, seek endorsement from the Ministry of Finance and the National Planning Commission to recognise the principle of the first-year of returns as a basis for investment decision. Seek these agencies endorsement also to utilise the Roads Board Fund or to set a policy to mandatorily set aside a fixed portion (e.g. 10%) of the total cost of road-constructions to mobilise budget for road-safety interventions.
10. For maximising the positive impact, prioritise interventions according to their effectiveness in mitigating the RTA severity at specific locations. For example, overloading control and random vehicle inspections of buses will be adopted at rural areas to reduce single bus accidents.
11. Pedestrian-safety will be prioritised in the road-safety planning and the interventions proposed.
12. Development of forgiving roads and infrastructures will be advocated through necessary guidelines, incorporation in the design standards, etc.
13. A mechanism to evaluate the outcome of various interventions will be developed in the near future.
14. Research and development, awareness for the public and stakeholders and trainings will be the integral part of the road-safety interventions.
15. To improve the RTA database, an inter-agency referral mechanism to identify potential accident-blackspots will be adopted. For example, a hospital should immediately refer such potential blackspots to DoR, traffic police, etc., based on the hospital's inference to its admission record for RTA injuries.
16. To develop in-house expertise and ensure commitments from the stakeholders, road-safety units will be formed at these agencies.

² Nepal Road Safety Action Plan (NRSAP), 2013-2020

17. The activities relating to road-safety policy will also look into aligning them with the ISO traffic safety management standard -ISO 39001.

18. The establishment of a comprehensive injury-surveillance at the hospitals and health centres will be pursued to mitigate under-reporting of RTAs.

19. As this is the first national action plan, a monitoring mechanism to evaluate this plan will be developed and updated as necessary.

4. Challenges

There are four Es essential for the road safety: Education, Engineering, Enforcement and Emergency. The following challenges remain in Nepal with regards to the road safety.

1. Educating road users

i. There is law on seat-belt wearing in the country and Traffic Police monitors and enforces its compliances. But it is being broken by most of the drivers

ii. Motorcycle day time head light is not mandatory

iii. Use of motorcycle helmets to the rider is mandatory but there is no standard of helmets defined

iv. Use of child seat restraints in cars and child helmets for motorcycle is not mandatory hence not in use widely

v. Road safety education in schools is made compulsory by introducing road safety chapters in school level text books

vi. Drinking and driving is prohibited by law and strong monitoring is being made especially at night time

vii. The drivers testing standard must be of international standards

viii. The road users are not aware of the road signs and rules

2. Road Engineering

i. Road network planning/design

The National Road Network of the country is classified into two broad categories-

1. Strategic Road Network (SRN) and,

2. Local Road Network (LRN)

Depending upon importance, the roads are further classified as National Highway, Feeder Roads, District Roads, and Urban Roads. The Department of Road (DoR), functioning under the Ministry of Physical Planning and Works is responsible for the construction and maintenance of the Strategic Road Network (SRN). The SRNs are the main national arteries, which provide inter-regional connections and links to district headquarters, international borders, key economic centers and the major urban roads. These roads were constructed to open up access to remote and rural areas as quickly as possible but without giving due consideration to the operability and sustainability of roads thus constructed.

ii. Road Safety Audit

Road safety audit was introduced in 1995 with the following key principles:

- Design of road for all road users
- Provide a clear and consistent message to the driver and other road users
- Encourage appropriate speeds and behavior through design and traffic signs
- Reduce conflicting points in the road junctions and intersections

- Make allowance in design for the bad or impaired driving
- Create a forgiving road

The roads in Nepal do not meet all the requirements for safe driving. Hence, there is need for strict compliance of policy and rules.

iii. Hazardous locations improvement

The accident prone locations on various highways pointed out by the road safety audit and accident data keeping are being improved by improving road geometry, installing road signs and safety barriers. But there are various improvement works still to be carried out which are lagging behind because of lack of fund and institutional commitments.

iv. New safe crossing program

Sufficient safe crossings on highways could not be installed yet. Zebra crossings, traffic lights and some over head crossing bridges are built and being used by the pedestrians in urban areas especially in capital city Kathmandu.

v. Motorcycle lanes and bicycle and pedestrian lanes

There is no separate lane for motorcycles on any roads of the country except newly completed Kathmandu - Bhaktapur section Arniko Highway. This section of Arniko Highway which has recently been constructed by the assistance of Japanese government has 4 lanes for vehicles, 2 lanes for motorcycle separated by road paint and 2 service tracks. Similarly there is no provision of separate bicycle lane in all types of roads in Nepal. Pedestrian lanes are not provisioned on highways, feeder roads and district roads. Raised footpaths are provided in all types of urban sections of all types of roads.

3. Enforcement of law

i. Removing roadside obstacles

Department of Roads is implementing planned maintenance of the roads under its jurisdiction. The DoR has been carrying out all types of maintenance activities on the road as well as road side maintenance for removing or cushioning roadside obstacles. Activities for planting trees along road side and trimming these in certain intervals are being not carried out by DoR.

ii. Technical safety requirements for new vehicles

The first Vehicle Act was enacted in 1964 followed by Transportation Management Act, 1970. Later, a combined Vehicle and Transportation Management Act, 1993 (VTMA) and VTM Regulations, 1998 replaced them. Besides VTMA, the Public Road Act, 1975; Local Self-Governance Act, 1999; and Road Board Act, 2002, also considers some part of road safety consideration such as implementation and management of traffic flow, vehicle axle load, and right of way. Technical and safety requirements for all types of vehicles have been provisioned in VTMA and VTMR. Some provisions regarding vehicle standard and safety in VTMR 1998 are:

- Standard dimension of the public vehicles
- Number of seats, height, width and folding provisions
- Fire extinguisher and emergency doors in public vehicles
- Insurance provision and First aid kits
- Lock in good condition on doors and windows
- Shock observer in good condition

- Speed limit
- Axle load limit
- Driver change and refreshment provision in long route driving

However, the enforcement of these law and rules in practice is lacking.

iii. Frequency of periodic inspection of vehicles

Initial and periodic inspections of vehicles are provisioned in VTMR 1998 as follows;

- Bus- 5 years driving permission after initial inspection then additional 3 years permission if meets the requirement in yearly periodic inspections.
- Mini bus- 8 years driving permission after initial inspection then additional 7 years permission if meets the requirement in yearly periodic inspections.
- Micro Bus- 5 years driving permission after initial inspection then additional 3 years permission if meets the requirement in yearly periodic inspections.

iv Road safety data base

Road safety data base system in Nepal is very poor. The local traffic police keep the accident data and send it to the traffic directorate at central level. In case of fatal and serious injury accidents, the data can be verified by the hospitals but in case of light injury it could not be verified from the hospitals. Generally DoR through its division offices keeps the locations of accidents. Because of absence of dedicated lead agency for road safety accident data base system is poor in the country.

v. Alcohol and drugs test

Drinking and driving is prohibited by law in Nepal observation test and/ or breathalyzer tests are being applied to check drinking and driving. Traffic police conducts these tests randomly especially in evening and night time. Drinking and driving and using drug and driving is prohibited by law. Non conformance of this provision will result cash fine to cessation of the driving license or route permit.

vi. Speed limit and compliance

Speed limit provision has been provisioned in Vehicle Management Act and Regulation in Nepal. In VTMR, 1998 following speed limit provision has been specified:

- Bus, Mini Bus, Truck- 50 KMPH for hill roads and 70 KMPH for plane
- Car, jeep Van Pick up- 80 KMPH
- Tempo, Tractor scooter- 40 KMPH
- Motorbike- 50 KMPH

But the Maximum speed is limited to 40 KMPH for all kinds of vehicle in settlement area and DoTM can revise the limit of speed considering the condition of road and vehicle. Similarly the driver of a public vehicle has his duty to follow the time table to reach the destination as mentioned in rout permit for the convenience of passengers. Even though speed limit provisions are legally binding in Nepal but the compliance of these provisions are rarely found in practice.

4. Emergency response system

i. Extent of geographical coverage

There is no exact division of geographical coverage for accident rescue activity. Generally the local traffic police and highway police provides rescue service to the event of accident. But local people and army man also carry out the rescue service.

ii. Average response time

Average response time for the accidents in Nepal depends upon the proximity of police post from the accident site. Generally it is 15 to 30 minutes in plane sections of highways and feeder roads and 30 minutes to one hour for hill and district roads. Urban accidents could be responded immediately

iii. The road users must carry emergency kit boxes in their vehicles and all the drivers and commuters must be given orientation on basic Medical First Aid

5. Suggestions for managing road safety

- a. There is need for good roads with signs and signals of international standards
- b. The commuters must be given education and awareness on the rules of road
- c. The law and rules must be strictly obeyed by all the concerned persons and defaulters must be punished severely
- d. All the road users must be given orientation on First Medical Responders
- e. There is need for proper coordination among the government agencies and other organizations
- f. There must be regular research on the trend of road accidents and improvement in policy, quality roads and enforcement machinery be updated
- g. There should be no compromise with the risks of life on the roads. Therefore adequate resources must be given to the respected authorities