

Enforcement and Community Education – The Golden Keys to Road Safety – A Developing Nation Study of Cambodia

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Abstract

This study reviews road trauma in the Kingdom of Cambodia and the concerted endeavours to implement road safety strategies through enhanced enforcement combined with specific education and community programs. The political, socio-economic and cultural issues are considered together with the negative impact of elections, demonstrations, festivals and floods, as impediments to effective campaigns. The commitment of champions, donor organisations, development of coordinating bodies, intensive campaigns, capacity building in policing, improved technology and enhanced operational police practices are reviewed. Deficiencies identified include the disconnect in knowledge, skills and behaviours of road users, the presence of high-risk activities such as speeding and non-wearing of helmets on motorcycles and the lack of a good practice structured driver licensing system. Persistence in approach together with monitoring and evaluation has achieved a fatality reduction of 379 (-17%) for 2015-16 with continuing positive trending and provides a foundation for future success in road trauma reduction.

Background

The Kingdom of Cambodia as a constitutional monarchy is a fast growing economy in tropical South-East Asia bordered by Thailand, Lao PDR, Vietnam and the Gulf of Thailand. A population of 15 million live in an area of 181,035 square kilometres. The capital Phnom Penh is the political, economic and cultural centre with major cities of Siem Reap and Sihanoukville attractive international tourist destinations. Angkor Wat, near Siem Reap is a World Heritage site. The official language is Khmer with Theravada Buddhism is practised by over 90% of the population.¹

Cambodia's beleaguered recent political and socio-economic history evolved following independence from France (1953), extensive bombing of the Vietnamese supply route by the USA (1969–73) during the Vietnam war, through the Pol Pot-Khmer Rouge regime wreaking Cambodian genocide (1975-79) and the Cambodian-Vietnamese war (1979-91). A 1997 coup empowered political control to the current Prime Minister and the Cambodian People's Party.²

Democratic elections are historically controversial with prolonged demonstrations in 2013 over claims of electoral fraud, corruption and intimidation. Corruption is deep-rooted with the political and law enforcement systems lacking public trust. Cambodia rates poorly on the Corruption Perception Index at 156/176,³ and similarly 143/187 in the UN Human Development Index.⁴

Road crashes have emerged as a modern humanitarian catastrophe affecting individuals, families, communities and the nation. Many families have been driven deeply into poverty by the loss of breadwinners or the added burden of caring for disabled family members. Moreover, the youth are most severely affected by this tragedy, robbing families of their next generation. Cambodia is still

¹ <http://www.tourismcambodia.com/>

² Royal Government of Cambodia, Ministry of Planning (2013), *Integration of Demographic Perspective in Development, Cambodia*.

³ https://www.transparency.org/news/feature/corruption_perceptions_index_2016

⁴ http://hdr.undp.org/sites/default/files/2016_human_development_report.pdf

one of the world's poorest nations.⁵ In recognition of this catastrophe, the government established the National Road Safety Committee (NRSC) in 2005⁶ now supported by the 25 Provincial Road Safety Committees (PRSC's).

Via donor organisations and technical assistance from Handicap International (HI), The Global Road Safety Partnership (GRSP), AIP Foundation, World Health Organisation (WHO), the International Alliance for Responsible Drinking (IARD) and other contributing Non-Government Organisations (NGO'S), a collaborative focus on the risk factors has enabled decision-makers to develop critical action plans, capacity building, enhanced enforcement, advocacy, policy, legislative reform, social marketing campaigns and post crash care.

Important in this complexity are youth organisations, such as Young Ambassadors for Road Safety,⁷ being a network from three Siem Reap universities, committed to serve as road safety role models and improve road safety knowledge, attitudes and behaviour. Similarly, Camsafe Youth Volunteers⁸ focus on empowering youth and developing society. The Cambodian Red Cross Youth⁹ provides a critical component in educating violators at police enforcement check-points.

The primary data source is the Road Crash and Victim Information System (RCVIS), developed in 2004 using traffic police and health professional data for evidence-based road safety reform.¹⁰ In 2011, together with 110 other countries, Cambodia was a signatory to the United Nations, Decade of Action (DoA) to reduce road trauma by 50% by the year 2020.¹¹

This research aims to review the progress of road safety interventions in Cambodia through a specific focus on education and enforcement, to identify key successes and lessons learned and provide recommendations for further road trauma reduction.

Methodology

This study uses a mixed method approach of research and analysis of critical reports, evaluations and crash data. The approach includes interviews, news media reports, workshops, focus group discussions and an assessment of police workloads and responsibilities. The views of ten national and international road safety professionals¹² were sought on questions designed to elicit qualitative data and obtained through personal interviews (5) and personal communication (5). Interviewees were selected for their road safety expertise and experience or from recognised safety institutions.

The semi-structured process allowed free flow comments and included two pre-identified questions:

1. What do you consider to be the key success factors in implementing road safety strategies in a developing nation such as Cambodia? and,
2. What have been the challenges/barriers you have had to overcome to achieve positive outcomes?

Seeking a small sample of highly respected experts aligns with qualitative studies that pursue purposeful sampling to gain information-rich material from knowledgeable sources (Patton 2002).

⁵ Royal Government of Cambodia (2014), *National Strategic Development Plan 2014-2018*.

⁶ Royal Government of Cambodia, (2005), *Sub-decree No 77*.

⁷ Young Ambassadors for Road Safety (2017), <http://aip-foundation.org/our-reach/cambodia/>

⁸ <http://camsafesolution.org/orientation-camsafe-youth-training-2017>

⁹ Cambodian Red Cross Youth (2017), http://www.redcross.org.kh/admin/assets/uploads/files/Youth_Policy_English.pdf

¹⁰RCVIS Annual Reports (2004-2017), Data is also provided monthly and quarterly by police to the NRSC.

¹¹United Nations (2011), http://www.who.int/roadsafety/decade_of_action/plan/en/

¹²HE Min Meanvy, Secretary of State, Chair NRSC; HE Pen Boran, Under Secretary of State; General Him Yan, Mol; Colonel Chev Hek, Dept of Order; Robert Klein, Project Director, ASEAN/ADB Capacity Building; Des Myers, Intl Road Safety Specialist; Paul Wesemann, Managing Director Foundation Road Safety for all; Greig Craft, President and Founder, AIP Foundation; Mirjam Sidik CEO AIP Foundation; Pagna Kim, Cambodia Country Manager, AIP Foundation.

Voluntary participation and informed consent applied with recording via the authors' note-taking or documented responses. An analysis of the interviews was then considered to identify common responses with potent characteristics. Limitations applied due to the diversity of background, however, their collective input provided a highly valuable resource.

Participant observation strengthens the research through a combined authorship of an international road safety specialist, an in-country manager with extensive road safety experience in NGO's and complemented by a senior Cambodian traffic police practitioner, also with NGO experience.

As attitudes, emotions and judgments have long been considered as impacting on crash causes (Stack 1956) and increased supervision and graduated licensing for novice drivers and traffic law enforcement is likely to make greater and more lasting contributions to road safety (Christie 2017), an assessment of driver training is discussed. This includes *knowledge, skills and behaviour* (KSB) and driver *coaching* identified in the literature as good practice to focus reform and interventions.

Review of the literature

This section reviews the costs and social impact of road trauma in Cambodia and considers the research on road safety awareness, road user behaviour, civilian and police driver training, road policing and enforcement. Discussion ensues linking education and enforcement as key strategies.

Adopting the Millennium Development Goals,¹³ the welfare costs of Cambodian road trauma reveal the poorest households were worst affected with no apparent development partnerships to address the negative welfare impacts (Ericson 2011). The economic costs of road crashes are estimated at USD \$337m or 2.3% of the Gross Domestic Product.¹⁴ Current fatality forecasting recommends additional actions to save 7,350 lives to meet the DoA 2011-2020 targets (Commandeur 2017). A sociological analysis of road safety in Cambodia found 64% of road users extremely concerned about road crashes and almost 100% of respondents supportive of a state approved driver course. Actual knowledge of the benefits of helmet-wearing on motorcycles was rated at 70%, however, only 50% of respondents acknowledged non-wearing of a helmet as unacceptable. (De Jong 2011).

In a two-year Cambodian study, observed helmet wearing was 33% during night-time, 48% during daytime and up to ten times higher among drivers compared with passengers. Self-reported helmet use was higher than observed use (Bachani et al., 2013). Further, a RCVIS report identified that observed wearing rates were low and 80% of motorcycle driver fatalities and 99% of child passenger fatalities did not wear a helmet.¹⁵ These studies and comparative statistics highlight the disconnect between knowledge, attitude and behaviour specifically applying to helmet-wearing.

A speed monitoring study in Cambodia in 2014: analysed primary and secondary data; reviewed international literature; consulted key stakeholders; undertook a Knowledge, Attitude and Practices (KAP) survey; as well as speed observations in high-risk locations in three provinces.¹⁶ Findings were compared to a similar study by HI in 2010. The later study confirmed international trends that: speeding has a direct impact on crash rates and severity; and that in all cases managing speed needs a global approach where law enforcement and road safety education are unconditional pillars.

This speed monitoring study confirmed that speeding accounted for 46% of road fatalities and identified a significant increase of drivers over the speed limit from 48.2% in 2010 to 66.8% in 2014. Key findings were that two thirds of drivers were exceeding the speed limit, speeding is the

¹³ United Nations (2015), *The Millennium Development Goals (MDG) Report*, MDG 8 applicable to this reference.

¹⁴ OECD (2015), *Road Safety Annual Report*

¹⁵ *ibid*

¹⁶ Handicap International (2015), *Study on Speed Monitoring in Cambodia*.

leading factor in crash causation, and improvements are required in driver training and licensing as well as amendments to the law and law enforcement. A comparison of the two KAP surveys found community road safety knowledge remained low and that more targeted monitoring systems were required.¹⁷ These findings imply that Cambodia is a high-risk country in road safety.

A review of driving, instructor skills and license testing in Cambodia identified that certified driving schools train people *off-road* to drive on public roads with emphasis on off-road manoeuvring rather than an assessment of *on-road* skills.¹⁸ Basically, drivers are trained to pass a test with 30 hours tuition, rather than develop the KSB's for a safe driving culture. Further, legislation does not require motorcycle riders of 125cc or less to be licensed, therefore imposing a further road safety risk. This does not accord with international good practice.

An Indian study found driver education, training, licensing procedures and traffic law enforcement to be effective countermeasures to reduce crashes (Verma, Velumurugan, Chakrabarty & Srinivas, 2011). An internationally focused study found programs directed towards attitude change and risk taking better address underlying causes of elevated crash risk (Peck 2011). The testing challenge is to create an overall driving test that gives a more realistic and rounded assessment of whether someone is fit to drive alone (Emmerson 2008). However, Christie (2001 and 2011) in an extensive review of international literature, concluded driver training could not be considered an effective crash countermeasure. Increased supervision, graduated licensing and traffic law enforcement are likely to make more lasting contributions to road safety.

The new paradigm for good practice driver education and training for civilian learner drivers is to operate under a *coaching* methodology (Hermes 2010) requiring drivers to be coached in a *live and dynamic* environment (on-road) and demonstrate competence in the complete range of road safety skills (Kruger & Dunning 2009, Roelofs, Vissers, et al. 2011).

Maintaining a focus on road users, maximum outcomes can be achieved in countermeasures by directly linking education and enforcement, with enforcement a key component (Vaa 2001). An examination of the prevalence of traffic crashes attributable to high risk driving behaviours, demonstrates the need for continued focus on enforcement of such behaviours and the development of innovative approaches to facilitate improved road safety (Bates, Lyndel, Soole & Watson, 2012). The collective youth of Cambodia with the Young Ambassadors, Red Cross Youth and CamSafe are powerful demonstrations where education and enforcement work in tandem to the community and country benefit.

Police enforcement intensity determines the probability of being caught and punished (Wesemann & Godthelp 2010). Good practice in policing to achieve road trauma reduction is intelligence-led, evidence-based and outcome-focused. The traditional 3 E's of Education, Enforcement and Engineering should be reinforced by robust *Evaluation*. However, the sustainability of jurisdiction-wide interventions is subject to question where programs have a short-term effect in road trauma reduction and then improvements plateau (Shuey 2008). The Safe Systems approach of safer vehicles, safer roads, safer speeds and safer road users is holistic and more sustainable.¹⁹

The Police Foundation in United Kingdom (UK) train and assess police drivers in "*knowledge, skill and behaviour*" (KSB) to instill a safe driving culture in 43 UK police organisations.²⁰ This methodology has operated for 60 years in emergency services in UK and as foundation training for all Australasian police and many emergency services. The current publication and training is

¹⁷ *ibid*

¹⁸ Transaid Technical Report (2013).

¹⁹ OECD Towards Zero (2008).

²⁰ Roadcraft, (2013), *The Police Driver's Handbook*.

founded on the more broad based European Goals for civilian driver education. As good practice, the concept of KSB from the Police Foundation is transferrable to the general driving public.

The literature presents strong impetus to ensure road users develop knowledge, skills and behaviour as the minimum licence entry requirement, complemented by a graduated licensing system. This is the cornerstone for effective driver education and road safety with the combination of education and enforcement identified as an essential partnership. Data analysis must underpin the process.

Trends in crash data and its use as the foundation for action

The 2013 RCVIS Report, recorded 4,353 crashes and 16,227 casualties comprising 1950 fatalities and 5,671 serious injuries. The economic loss was claimed as USD \$337 million. Disturbingly, vulnerable road users such as bicyclists, motorbike riders and passengers, motorised tricycles and pedestrians accounted for 90% of casualties. The fatality rate per 100,000 populations was 13.0.

By contrast in 2016, 3,910 crashes (-10%) resulted in 11,899 casualties (-27%) and comprised 4,697 serious injuries (-17%) and 1,852 fatalities (-5%). This is an average of 5 deaths and 13 injuries per day. The road traffic death rate is now 11.9 per 100,000 population, with the leading causes being speeding (38%) and drink-driving (13%). Vulnerable road users accounted for 85% of traffic deaths being motorcyclists (73%), pedestrians (10%) and cyclists (2%).

The highest number of fatalities (234) were in the capital and 70% of all crashes occurred on National Roads with 23% on National Road No.5 connecting Phnom Penh to the Thai border. Farmers represent the largest group of fatalities (40%), followed by workers (20%) and students (10%). Head-on crashes accounted for 35% and rear end crashes accounted for 18% of all fatalities.

Notably, only 23% of motorcycle driver's casualties wore a helmet in the crashes and only 10% of motorcycle passengers. Errant driver behaviours²¹ accounted for 97.4% of crashes and fatalities with vehicle defects being 2.4% followed by the road environment being .7% and weather .4%. Unfortunately, there is no data to correlate crash data with licence status or driving experience.

The integrity of the data from RCVIS is critical to inform road safety interventions with the strength being in correlating police and hospital data. An evaluation found 100% of police districts and 65% of hospitals reporting to the system in 2010 and concluded that the RCVIS provides a strong foundation for road crash injury and fatality surveillance (Parker et al., 2014). Since inception in 2004, the database has provided comprehensive information as a strong evidence-base for plans and actions to prevent and reduce road trauma as detailed in a following sections.

Impediments to enforcement

This section reviews impediments to enforcement identified through police practitioners, workshops, interviews with NGO representatives and the collective participant observation of the authors. These sources identified road policing as lacking in funding, resourcing, equipment, data analysis, training and the capacity to impact consistent enforcement strategies country-wide. The political oversight requires formal and regulated authorisations for checkpoint operations. Road safety efforts have been frustrated by extensive periods of non-enforcement²² due to the political environment with on-going demonstrations before, during and post the National Assembly elections in 2013 (8 months of non-enforcement) and the Communal elections in 2017 (6 months).²³

²¹ Classified within the RCVIS Annual Report (2016) as over-speeding, drink-driving, not respecting right of way, dangerous driving, changing lanes without due care and changing direction without due care.

²² Non-enforcement includes the lack of an authoritative document to establish checkpoints and visible police enforcement as well as constraints through dealing with emergencies and public order issues.

²³ Interview Colonel Chev Hek, Chief of Phnom Penh Traffic Police, Department of Order September 2017.

Non-enforcement also applied during extended demonstrations for better working conditions; managing public festivals; and, serious flooding requiring disaster management and humanitarian aid.²⁴ During these periods, drivers take advantage of the lack of police enforcement presence, disrespecting their legal and safety obligations. Small gains in road trauma reduction are setback or neutralised. Initially, night-time enforcement for helmet-wearing and sobriety checkpoints did not occur and enforcement did not align with the crash data analysis.

Other impediments to enforcement included VIP abuse of power and interventions at checkpoints. These interventions weaken the authority of the operations' commanders, diminish the effectiveness of the drink-driving program, set a poor example to citizens and is a non-deterrent to alcohol related trauma. To strengthen anti-corruption strategies and minimise VIP interventions at checkpoints, the revised enforcement guidelines advise that attempting to claim exemption is an abuse of power and corrupting the law as all drivers and riders are required to comply with the law. Any attempt to seek or demand exemptions is not condoned by the Department of Order or by the Ministerial Chair of the NRSC.²⁵ Delays in processing and proclaiming legislation for drink-driving and child helmet-wearing, have resulted in a hiatus in enforcement and likewise neutralised any road safety gains.

Barriers and challenges were regularly discussed at national and provincial workshops with traffic police officers over several years.²⁶ Notwithstanding the remedial actions identified, some of the high-level barriers were beyond the control of the enforcement regime. Credibly, the workshop achievements included the development of road safety strategic plans; the development of drink-driving, speed and enforcement guidelines; the identification of key performance indicators; check-point check-lists; training of trainers and developing facilitator guidelines. These outcomes provided the foundation for capacity building and sustainable enforcement.

Impediments identified by senior police include: penalties are not strong enough; there is a fine for the first offence and because the records are not coordinated nationally, a second offence is not identifiable; and, there are often calls to higher authorities to abort due process. Success factors include regular enforcement, particularly at high alcohol times; intensity of the checkpoints; use of multiple checkpoints for those who evade one point; transferring good practice throughout Cambodia; and although not fully successful, media publicity around enforcement campaigns.²⁷

Speeding ranks high as a crash cause as does drink-driving. Using traditional policing methods of immediate interception, speed enforcement in Cambodia is a high-risk policing activity. The current strategies use speed cameras and then penalties mailed, however, lack the support of a sound licensing and registration system to ensure offenders are identified and sanctioned. These systems also need to be complemented by a national offender data-base to assist police in curtailing recidivists for speeding, drink-driving, non-helmet-wearing and other high-risk driver behaviours.

Legislative impediment was notarized in 2016 as "*Traffic laws and regulations, lacking proper implementation, have done little to slow the loss of life*" and expanded by Mr. Ear Chariya, Director of the Phnom Penh Institute for Road Safety. He stated the road accident causes in Cambodia as: limited public awareness of traffic laws; corruption in the issuing of driving licenses; inefficient

²⁴ Country Report of Cambodia Disaster Management, (2014). The 2011 floods claimed 250 lives as well as disrupting 925 kilometres of road network. The 2013 floods claimed 168 lives, affected 377,354 households and forced 31,314 household evacuations

²⁵ Department of Order (2017), *Draft Drink Driving Enforcement Guidelines*.

²⁶ Traffic police workshops facilitated by international road safety specialists, Dr Ray Shuey and Des Myers at frequent intervals from 2009 to 2017 (13 programs)

²⁷ Interview, Colonel Chev Hek, Chief of Phnom Penh Traffic, Police, Department of Order 26th March 2017.

driving schools; and, lax implementation of the laws. His remedies included traffic education in schools, strengthening driver education and licensing and ensuring the law is regularly enforced.²⁸

Other barriers identified by NGO's include; requiring a stronger political commitment, especially around law enforcement, lack of education and awareness, inadequate fund investment and limited participation from the public and civil society.²⁹

An important barrier is the lack of knowledge and lack of cooperation of road users particularly among low income people as well as limited national budget for both NRSC and PRSC. Although the passenger helmet law commenced in 2016, the law is not yet consistently enforced amongst adults and there are currently no penalties issued for transporting non-helmeted children. Child helmet use remains low and 99% of children killed in motorcycle crashes are not wearing helmets.³⁰ This highlights the non-enforcement period for child-helmet wearing for over 18 months.

These practitioners' views are supported in the RCVIS 2016 report emphasising the need to strengthen: data collection; traffic law enforcement, training and driver licensing systems, education in schools, universities and communities; improve blackspot areas; and promote road safety campaigns. The integration of road safety awareness and enforcement must be based on concrete planning. The ASEAN Regional Road Safety Strategy 2016, identified the Cambodian challenges to be: improving the safety of 2 and 3-wheeler drivers and passengers; strengthening the enforcement of all traffic laws; consolidating national vehicle regulations; and, establishing road safety auditing.

A key finding of these impediments is the consistent references to the lack of education and enforcement and the impact on road safety. This observation in Cambodia is aligned with international studies which have identified that inconsistent enforcement may contribute to many thousands of deaths each year worldwide (Redelmeier, Tibshirani & Evans, 2003).

Interviews with the professionals

Comments from the professionals identify road safety needs as: legislative framework; robust policy; collaboration and coordination; involvement with the community; political leadership; education and awareness; road user behaviour; sustainable enforcement and evaluation.

The most common perspective is that enforcement and education are key actions urgently needed to be undertaken side by side especially for Cambodia to meet its commitment in saving 7,350 lives under the UN DoA.³¹ Effective community road safety initiatives are critical for successful road safety programs. Further, initiatives must be monitored with intermediate measures such as mean vehicle speeds, helmet-wearing rates and police interventions and established prior to any initiative roll out and continually reported over time to determine trends.³²

There is a need for strong leadership from government to coordinate all the relevant ministries and prioritise those measures with the most impact. The need for rigorous strategy, policy and legislation was strongly reinforced.³³ In addition to education and awareness this also requires effective enforcement, even if it is considered unpopular. Cambodia has seen just how effective this

²⁸ Deutsche Welle World Asia, (4th August 2016) "*Ineffective laws leave Cambodia's roads unsafe.*"

²⁹ Interview, Pagna Kim, Country Manager, AIP Foundation, July 2017.

³⁰ Interview, HE Min Meanvy, Secretary of State, Chair NRSC, 4th July 2017

³¹ Kim

³² Personal written communication, Rob Klein, Project Director, ASEAN/ADB Capacity Building, 17th June 2017

³³ HE Pen Boran, Progress on the UN Decade of Action. Presentation at Kuala Lumpur 7th April 2017- Advising promulgation of the new traffic laws and sub-decrees for compulsory helmet-wearing for motorbike drivers and passengers including children, together with a five-fold increase in fines from 1st January 2016,

has been in increasing helmet use, and ultimately saving lives.³⁴ Further, it is important that the plan is time-bound, has clear indicators for measuring success and to ensure when new laws become effective, its enforcement is vital for successful behavioural changes.³⁵

The executive police view is that human factors are the major crash cause with road conditions and vehicle defects only accounting for 1-2% each. Drivers do not obey or respect the law if they cannot see officers on the street. Also, delays in the legislation and the legal decrees make it very difficult to impose enforcement. The future is to minimise fatalities, learn from other countries, use smart technology and software for support and build capacity in training and enforcement techniques.³⁶ Police operational command requires the will of the leaders to endorse more visible police activities and stronger enforcement for drink-driving, helmets and speed. An on-line offender database, more CCTV availability and a vision for IT is needed, however, there is no budget.³⁷

Collaboration and ongoing dialogue between stakeholders is essential for implementable strategies. In a developing country where funding is limited, government, NGOs, civil society and the private sector all have an important role to play to mobilize resources and funding for road safety issues.³⁸

An international perspective warns that first world solutions cannot be imposed without accepting the cultural, ethical, financial, religious, political and historical influences. Safe Systems, Vision Zero and Towards Zero are based on the focus country being ready and willing to embrace the principles. Safer roads and safer vehicles are not realistic short term outcomes, however success can be achieved by focusing on road users to understand the basis for their road safety behaviour.³⁹

It is apparent that the complexity of road safety has many causes and requires coordination and integration of solutions, the collective views continue to substantiate a focus on enforcement and education as critical components in the avenues to road safety reform.

Progress and achievements

This section addresses the concerted endeavours to reduce road trauma over time commencing with the development and refinement the crash data base since 2004 and the training of police to accurately and reliably collect and transmit crash data on a national basis. Notwithstanding periods of non-enforcement crash recording has maintained integrity and continuity.⁴⁰

The helmet-wearing conference in Sihanoukville in 2007, provided impetus for focussed interventions leading to the current AIP Foundation “Head Safe - Helmet On” program. The GRSP RS10 project commencing 2010 supported enhanced enforcement, social marketing, advocacy for policies and legislation, road safety action plans, guidelines and operating procedures. From 2010-2014, international and national experts assisted capacity building in *train the trainer* programs in key risk factors. In 2014, an ADB project supported a Road Safety Advisor for Cambodia resulting in national training on traffic law enforcement and road safety management, a training needs survey, a cost analysis study and the development of a proposal for strengthening speed management (Sann, Haworth & King, 2015). These cumulative endeavours from 2007 have strengthened knowledge, capability and capacity in both education and enforcement strategies.

³⁴ Ibid.

³⁵ Personal written communication, Mirjam Sidik, CEO, AIP Foundation, 23rd June 2017

³⁶ Interview, Gen Him Yan, Ministry of Interior, 30th March 2017

³⁷ Hek

³⁸ Personal written communication Greig Craft, President and Founder, AIP Foundation, 23rd June 2017

³⁹ Personal written communication, Des Myers, International Road Safety Specialist, 21st June 2017

⁴⁰ Hek

Notwithstanding the impediments and the lessons learned, the combined road safety endeavours draw a stark and positive contrast to the projected trend without countermeasures. The critical observation from Figure 1 is that fatalities decreased by 379 (-17%) over the 12 months 2015-2016.

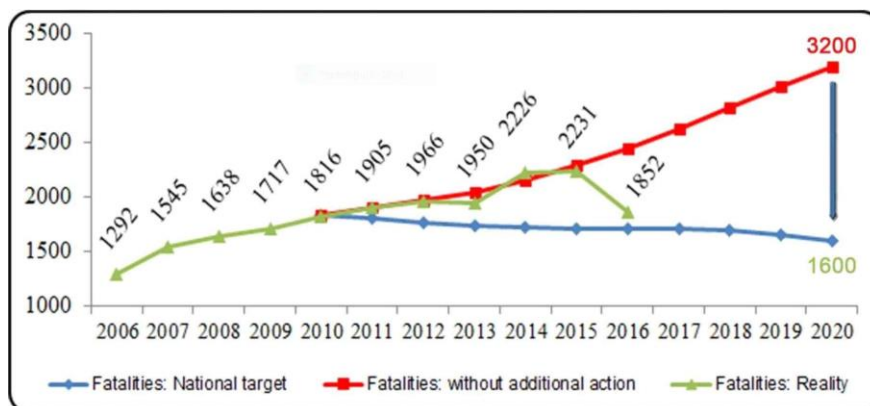


Figure 1. Estimated number of fatalities 2011-2020 compared with actual and trend⁴¹

The positive downward trend continued in 2017. Compared to the same period for 2016, crashes decreased 9%, fatalities decreased 5% and slight injuries dropped 27%. Disturbingly severe injuries increased 71%.⁴² 2,000 drivers were detected drink-driving of which 87% were motorcycle riders. Same period drink-driving crashes decreased 21% from 2016 and by 40% from 2015.

The successes include: helmet-wearing increased; drink-driving decreased; awareness of police enforcement increased; new road laws, revised penalties, sub-decrees and national guidelines for police enforcement developed; and community road safety action and investment plans developed.⁴³

Education and drink-driving awareness campaigns in 2016/17 included 110 youth leaders and traffic police officers from 25 provinces trained as trainers by an international policing expert; 3,420 students participated in Safe Driver Training in eight targeted cities and 6,800 road users directly benefited from drink-driving awareness campaigns during the Khmer New Year.⁴⁴ The strong educational message for road users reinforced in police training is that the enforcement is to be *repeated often* and that if they drive under the influence of alcohol, they will be caught *anywhere* and *anytime*. The correlation between increased enforcement and education and decreased fatalities as shown in Figure 1, for 2016/17 is noteworthy.

The six-month NRSC⁴⁵ summary records: Driver training provided for 780 transport drivers; school and community-based education provided in 25 provinces; letters for safety promotions sent to all Media outlets; the PRSC's advised to strengthen enforcement; and the RCVIS was strengthened as was supportive legislation. Police checked 1.5million drivers during the same period.⁴⁶

These results are very encouraging and were externally recognised in 2016 when Cambodia was honoured with an International Road Safety Award by Prince Michael in London. IARD drink-

⁴¹ Source: RCVIS (2016). Road Crashes and Casualties in Cambodia, Summary Report 2016.

⁴² Source: Dept. of Traffic Police and Public Order of the General Commissariat of National Police of the MoI, 2017.

⁴³John Hopkins International Injury Research Unit (2014), WHO Collaborating Centre for Injuries. *Cambodia: Summary Data from Observational Studies (Helmet Use and Drink Driving)*.

⁴⁴ <http://www.producerscommitments.org/wp-content/uploads/2017/05/Drink-Drive-Cambodia-JanMar2017.pdf>

⁴⁵ National Road Safety Committee, 30th June 2017, Summary Report, Semester 1 meeting.

⁴⁶ 1.5 million drivers checked, 7,377 offenders charged with speeding, 162 drivers tested for drugs.

driving project has been acknowledged and honoured the award for outstanding contribution to improve road safety in Cambodia. AIP Foundation and HI have also achieved this award.

Future directions

HE Min Meanvy advises the future directions as combining education, community awareness and strong enforcement on the key risk factors and replicating successful approaches to best influence road user behaviours.⁴⁷ HE Pen Boran, advises the need to maintain active collaboration among NRSC, PRSC members, Civil Society and the Private Sector together with comprehensive education and awareness programs combined with enhanced enforcement. Further, the media should be engaged at checkpoints to multiply awareness and compliance.⁴⁸

The NGO perspective is to continue the challenge to transform the law into widespread behavioural change through stringent and consistent law enforcement.⁴⁹ AIP Foundation continues to work with schools and communities to donate quality helmets and promote helmet use through education and awareness, whilst continuing to advocate for policy change to protect young lives.⁵⁰

These collective views are consistent with the issues identified in the literature and in common with the thematic analysis. It demonstrates that the decision-makers understand the challenges and appreciate the lessons learned to provide the foundation and impetus for further road safety reform.

Findings and Conclusion

This study has identified the benefits of combining education and enforcement as critical components for success. Road safety progress has been thwarted with extensive periods of non-enforcement and setback particularly during 2013-2015 with increased fatalities. Legislation delays and delays in promulgations of laws have hindered enforcement and education campaigns.

Cambodia continues to be a high-risk country in road safety with non-wearing of helmets remaining a critical risk especially for children. Speeding is acknowledged as the major cause of road trauma and surveys identify a disconnect between drivers' knowledge, skills and behaviour.

Action is recommended to support an overhaul of the driver licensing system as this is identified as the cornerstone of disciplined and safe road user behaviour and the primary source of education for all road users. The police are in urgent need of a country-wide offender data base and infrastructure support from an accurate and reliable registration and licensing data base. While the RCVIS provides a strong evidence-base for road safety reform, an identified issue is the inability to monitor and correlate licence history with crash data. Further, licencing and coaching/training should apply to all motorised transport.

Campaigns by NGO's and volunteer groups have provided a strong safety message over many years. With the sound backing of political will, robust legislation, community cooperation and stringent enforcement, substantial gains can be made in road trauma reduction. Notwithstanding the challenges, Cambodia has significantly impacted road trauma, notable a fatality reduction of 379 (-17%) in 2016-17 and continued trending. Co-ordination of initiatives, increased country-wide campaigns, the efforts of NGO's, coordination of road safety advocacy and enhanced enforcement has proven to produce successful outcomes. While it appears as a protracted task without reward,

⁴⁷ Meanvy.

⁴⁸ Boran,

⁴⁹ Sidik.

⁵⁰ Craft.

the combination of stringent enforcement and community education on the safety messages is proving to be the golden keys for road safety success.

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