

**Economic and Social Commission for Asia and the Pacific****Seventy-fourth session**

Bangkok, 11–16 May 2018

Item 3 (c) of the provisional agenda**

Review of issues pertinent to the subsidiary structure of the Commission, including the work of the regional institutions: transport**Strengthening regional efforts to improve road safety***Summary*

Road crashes kill more than 730,000 people a year in the Asia-Pacific region. One of the aims of Sustainable Development Goal 3 is to halve road fatalities and injuries by 2020. However, current progress shows it is virtually impossible for the region to achieve this target.

The present document contains a review of the overall status and progress in the region as well as challenges to efforts to improve road safety. It also contains information on regional initiatives and efforts to assist member States in addressing the challenges in road safety. The present document will draw the attention of the Commission to this critical challenge in the region.

I. Background on road safety in the Asia-Pacific region

1. Globally, road traffic crashes kill some 1.25 million people each year.¹ In addition to the tragic loss of lives, road crashes also result in substantial economic losses to countries and have devastating financial, social and emotional consequences for the victims and their families. As a result, the issue of road safety has received global attention and has been placed on the global development agenda. Since 2003, the General Assembly has adopted seven resolutions calling for strengthened international cooperation and multisectoral national action to improve the global road safety situation. In its resolution 64/255 of 2 March 2010, the Assembly proclaimed the period 2011–2020 the Decade of Action for Road Safety. The issue was further addressed in the 2030 Agenda for Sustainable Development, as reflected in targets 3.6 and 11.2 of the Sustainable Development Goals. The aim of target 3.6 is to halve global deaths and injuries from road traffic accidents by 2020 while the aim of target 11.2 is, by 2030, to provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by

* Third reissue for technical reasons (1 May 2018).

** ESCAP/74/L.1/Rev.1.

¹ World Health Organization, *Global Status Report on Road Safety 2015* (Geneva, 2015). Available from www.who.int/violence_injury_prevention/road_safety_status/2015/en/.

expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons.

2. The road safety issue has also received attention from high-level policymakers in member States of the Economic and Social Commission for Asia and the Pacific (ESCAP). In order to create a high level of regional road safety awareness and commitment, the First Ministerial Conference on Transport, held in Busan, Republic of Korea, from 6 to 11 November 2006, adopted the Ministerial Declaration on Improving Road Safety in Asia and the Pacific.² In December 2016, at the Third Ministerial Conference on Transport held in Moscow, the Asia-Pacific transport ministers renewed their commitments to improving road safety by adopting the updated Regional Road Safety Goals, Targets and Indicators for Asia and the Pacific 2016–2020 through the Ministerial Declaration on Sustainable Transport Connectivity in Asia and the Pacific. The Declaration, as endorsed by the Commission in its resolution 73/4 of 19 May 2017, contains a mandate for the secretariat to assist member countries in meeting their commitments under the Decade of Action for Road Safety (2011–2020) and the Sustainable Development Goals.

A. Road traffic fatalities

3. In the ESCAP region, one person is killed in a road crash every 40 seconds. This is equivalent to 2,000 lives lost per day. This situation causes substantial economic cost and immeasurable social loss. In addition to the many lives that have been lost in the region, many more people have been injured. A recent study found that the majority of road accident survivors experienced social and economic difficulty after recovery. Large numbers of survivors lost their jobs. Nearly half of those who became disabled lost their homes. In addition, more than one third experienced divorce due to economic difficulties and mental frustration.³ Furthermore, thousands of hospital beds are occupied by people who were injured in road crashes.

4. Data obtained from the *Global Status Report on Road Safety 2015*, published by the World Health Organization (WHO), and ESCAP calculations show that road traffic crashes resulted in some 733,000 deaths on Asia-Pacific roads in 2013, which account for more than 58 per cent of the 1.25 million global road traffic deaths that year.⁴

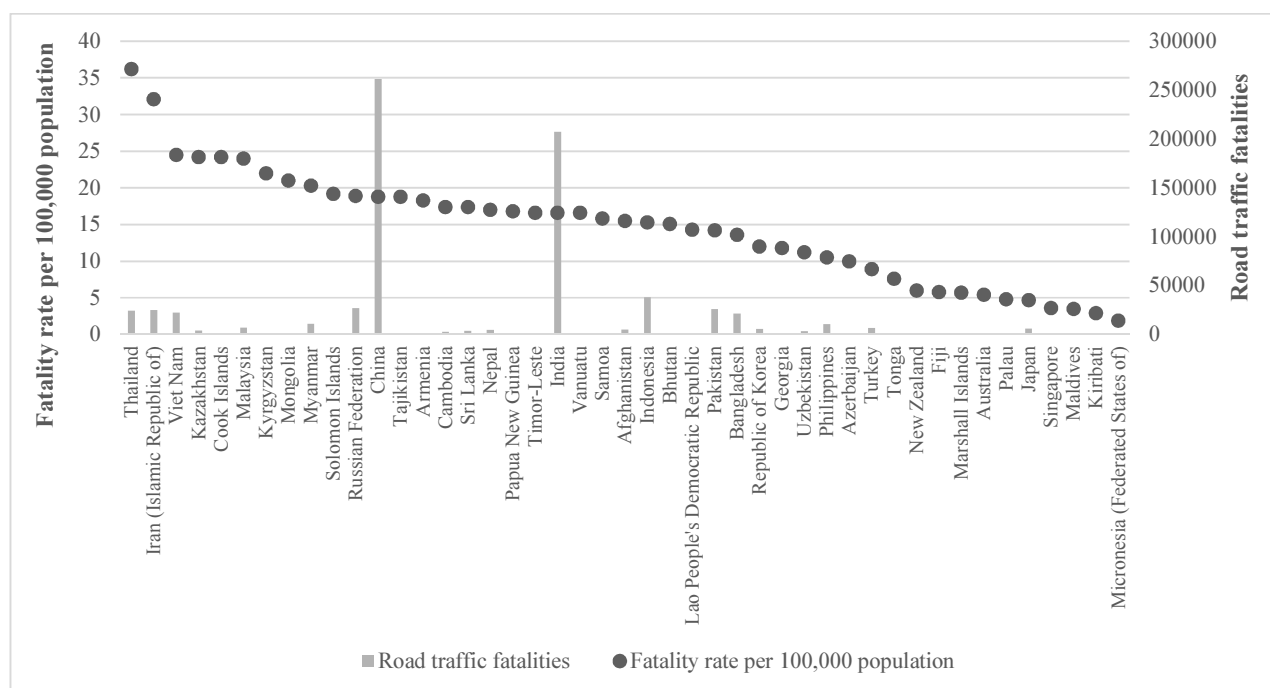
5. In terms of the average road traffic fatality rate, the ESCAP region had 18.99 deaths per 100,000 inhabitants in 2013 which was higher than the worldwide average of 17.4 deaths per 100,000 inhabitants. Thailand and the Islamic Republic of Iran have significantly higher road traffic fatality rates than other countries in the region at 36.2 and 32.1 deaths per 100,000 inhabitants, respectively. Figure I compares the number of road traffic fatalities and the fatality rate per 100,000 inhabitants in the region as estimated by WHO.

² E/ESCAP/63/13, chap. IV.

³ Namji Jung and Jaehoon Sul, *Handbook of Measuring Socio-economic Consequences of Traffic Crashes* (Gyeonggi-do, Republic of Korea, Korea Transport Institute, 2014).

⁴ WHO, *Global Status Report on Road Safety 2015* (Geneva, 2015). Available from www.who.int/violence_injury_prevention/road_safety_status/2015/en/.

Figure I
Estimated road traffic fatalities and fatality rates in the Asia-Pacific region, 2013



Source: ESCAP calculation based on data from WHO, *Global Status Report on Road Safety 2015* (Geneva, 2015). Available from www.who.int/violence_injury_prevention/road_safety_status/2015/en/

6. More than half of total road traffic fatalities in the ESCAP region are to vulnerable road users, namely motorcyclists, cyclists and pedestrians. Vulnerable road users account for 47 per cent of the world's road traffic fatalities and 55 per cent of road traffic fatalities in the ESCAP region.

7. Road fatalities to vulnerable road users are a cause of serious concern in many countries, particularly in East and North-East Asia and South-East Asia. Approximately two thirds of road traffic fatalities in those subregions are to vulnerable road users, at 68.56 per cent in South-East Asia and 61.11 per cent in East and North-East Asia. Meanwhile, the major share of road traffic fatalities in the North and Central Asian and the Pacific subregions involve four-wheel vehicles. Those statistics shows different key risk factors in the subregions.

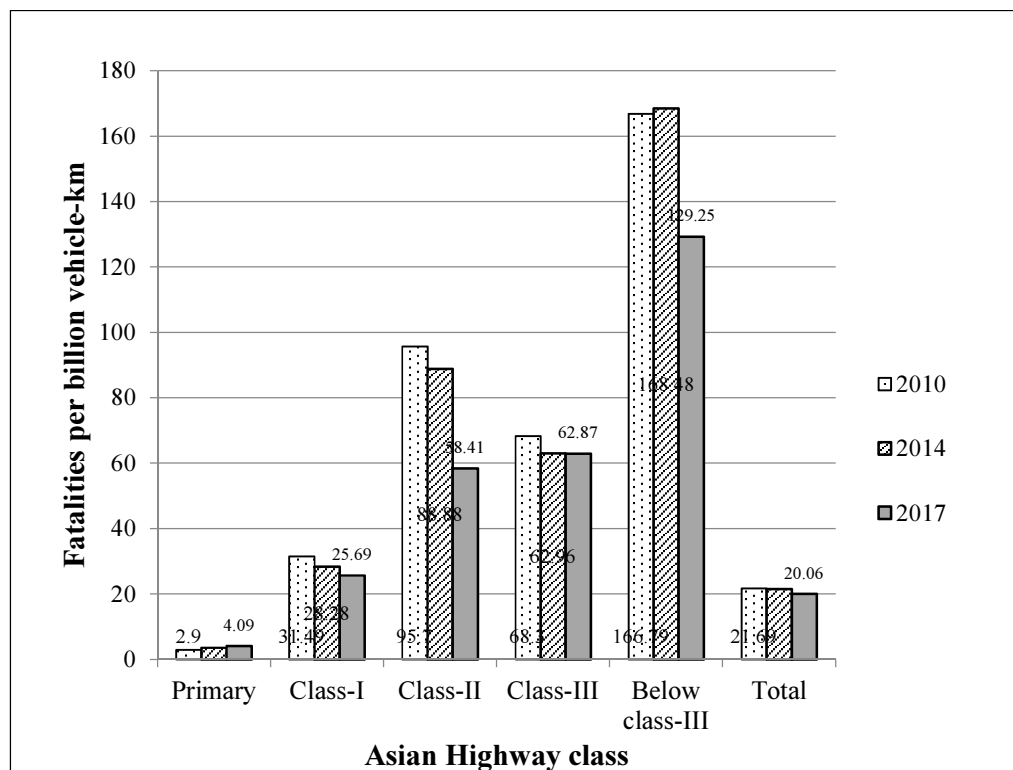
Road traffic fatalities on Asian Highway routes

8. The Asian Highway database contains information on road safety, including the number of road crashes and fatalities along different sections of the Asian Highway network.⁵ Figure II, using the latest available data, from 2017, shows that primary class Asian Highway routes have the best safety record, at 4.09 fatalities per billion vehicle-km, while routes below class III have the worst record, at 129.25 fatalities per billion vehicle-km. The average fatality rates for other classes of Asian Highway routes are 25.69 fatalities per

⁵ As of December 2017, road safety data were available for 1,492 Asian Highway road sections in 26 member countries. These sections comprise a total distance of 61,254 km, or 42.9 per cent of the Asian Highway network.

billion vehicle-km for class I, 58.41 fatalities per billion vehicle-km for class II and 62.87 fatalities per billion vehicle-km for class III. This suggests that upgrading roads across all classes, especially to meet the minimum required standards for class III, is likely to result in a reduction in fatalities on the Asian Highway network and that the upgrading of roads to access-controlled primary class produces a significant reduction in fatalities.

Figure II
Average fatality rates per billion vehicle-km by Asian Highway class



Source: Based on information from the Asian Highway database, available from www.unescap.org/resources/asian-highway-database (accessed 5 January 2018).

B. Cost of road crashes

9. Road crashes cost Governments in the region as much as 6 per cent of gross domestic product (GDP).⁴ The estimated economic cost of road crashes ranges from 1 per cent of GDP in Myanmar to 6 per cent of GDP in the Islamic Republic of Iran. Of the 19 countries with available data, Japan has the highest estimated monetary loss due to road traffic crashes at nearly \$64 billion, followed by India at approximately \$58 billion. The economic cost of road crashes in the region is estimated to be between \$293 billion and \$527 billion,⁶ as much as the GDP of Kiribati, Marshall Islands, Nauru and Tuvalu combined. Table 1 shows the estimated GDP loss due to traffic crashes in some of the countries in the region.

⁶ Calculated by multiplying the total estimated percentage of GDP loss in 2013 in the 19 countries by the 2013 GDP of the region.

Table 1
Estimated losses due to road traffic crashes in selected countries in the region, 2013

	<i>Gross domestic product loss (percentage)</i>	<i>2013 national gross domestic product in current prices</i>	<i>Estimated loss</i>
		<i>Millions of United States dollars</i>	
Armenia	1.0	10 439	104.39
Australia	2.1	1 528 761	32 103.98
Bangladesh	1.6	153 505	2 456.08
Cambodia	2.1	15 450	324.45
India	3.0	1 936 088	58 082.64
Indonesia ^a	2.9–3.0	755 094	22 652.82
Iran (Islamic Republic of)	6.0	511 621	30 697.26
Japan	1.3	4 919 588	63 954.64
Lao People's Democratic Republic	2.7	10 760	290.52
Malaysia	1.5	313 158	4 697.37
Myanmar	0.5	62 141	310.71
Nepal	0.8	18 227	145.82
New Zealand	1.6	189 494	3 031.90
Philippines	2.6	272 067	7 073.74
Republic of Korea	1.0	1 305 605	13 056.05
Russian Federation ^a	1.9	1 524 917	28 973.42
Thailand	3.0	420 167	12 605.01
Turkey ^a	1.1	731 144	8 042.58
Viet Nam	2.9	171 222	4 965.44
Total estimated loss			293 568.83

Sources: Estimated percentage of gross domestic product loss in WHO, *Global Status Report on Road Safety 2013: Supporting a Decade of Action* (Geneva, 2013), available from www.who.int/violence_injury_prevention/road_safety_status/2013/en/ and WHO, *Global Status Report on Road Safety 2015* (Geneva, 2015), available from www.who.int/violence_injury_prevention/road_safety_status/2015/en/. GDP for 2010 and 2013 obtained from the ESCAP Statistical Online Database, available from www.unescap.org/resources/asian-highway-database (accessed 2 June 2016).

^a Data from 2010.

II. Challenges in the region

A. Major causes of road crashes at the national level

10. Countries in the region are facing a wide range of issues and intensities of key risk factors on road crashes. Identifying the major causes of road crashes can help to target effective policies and actions and to identify where funds can be focused to reach optimal outcomes. While the reported major causes of road crashes in different countries vary, there are certain commonalities. Table 2 shows the top causes of road crashes in selected ESCAP countries. The two most common causes are negligence and rule violation by drivers, including overtaking, dangerous lane changing and tailgating. Speeding and drink-driving are the other two most common causes of road crashes. The following section presents some statistics and facts on those top causes.

11. Negligence and rule violation by drivers are two of the top reported causes of road crashes in many countries in the region. Driver error is the cause of 89 per cent of road crashes in Turkey and 79 per cent in the Philippines. Careless driving and distracted driving together account for nearly 30 per cent of road traffic crashes in Japan. Negligence by drivers and pedestrians caused 44 per cent of road crashes in Nepal and careless driving caused more than 28 per cent of road crashes in Pakistan. Changing the behaviour of drivers and other road users is a challenging and long-term continuous process of raising awareness, enhancing education and consistently and strictly enforcing road traffic laws and regulations.

12. Speeding is reported as the top cause of road crashes in many ESCAP countries including China (14 per cent), India (37 per cent) and Sri Lanka (30 per cent). Despite that fact, many drivers are still unaware that driving too fast increases the risk of losing control and crashing. According to the *Global Status Report on Road Safety 2015*, pedestrians and cyclists are especially at risk of injury as a result of excessive vehicle speeds. As shown in another WHO study, a 5 per cent reduction in average speed can reduce the number of fatal crashes by as much as 30 per cent.⁷ Therefore, measures to reduce speed, in particular in urban areas where there is a high concentration of vulnerable road users, can contribute significantly to saving lives and avoiding injuries.⁴ For example, the introduction of 30-km-per-hour zones in residential areas in the United Kingdom of Great Britain and Northern Ireland resulted in overall vehicle speed reductions of 15 km per hour and cut vehicle crashes with child pedestrians and cyclists by 67 per cent.⁸

13. It is estimated that drink-driving kills 41,000–51,000 people in the region each year.⁹ The Marshall Islands attributes 100 per cent of road traffic deaths to alcohol yet has no drink-driving law. The legal blood alcohol level for driving has not yet been defined in several Pacific island and Central Asian countries; among those, Azerbaijan and Papua New Guinea rank among the five countries with the highest percentage of drink-driving road traffic accidents. Of those countries that have defined the legal blood alcohol level for

⁷ WHO, *Managing Speed* (Geneva, 2017). Available from www.who.int/violence_injury_prevention/publications/road_traffic/managing-speed/en/.

⁸ United Kingdom, Department of the Environment, Transport and the Regions, *Review of traffic calming schemes in 20mph zones* (London, 1996).

⁹ ESCAP calculations based on data from WHO, *Global Status Report on Road Safety 2015*.

driving, only Armenia, Malaysia and Singapore still have a legal blood alcohol level that is more than 0.05 grams per decilitre.

Table 2
Top causes of road crashes in selected Asia-Pacific countries

<i>Country</i>	<i>Top causes of road crashes</i>
Bangladesh	Reckless driving, speeding, overloading, mechanical failure
Bhutan	Inexperienced drivers, speeding, drink-driving, overloading, mechanical failure
Cambodia	Speeding, drink-driving
Fiji	Speeding, dangerous driving
India	Speeding
Japan	Violation of safe driving practices (careless driving, improper steering or braking)
Lao People's Democratic Republic	Traffic rule violation, drink-driving, speeding
Myanmar	Driver offense, pedestrian negligence
Nepal	Negligence by drivers and pedestrians, speeding, overtaking, drink-driving
Pakistan	Careless driving, dozing off
Philippines	Driver error, defective vehicle, bad road condition
Republic of Korea	Failure to perform safe driving, traffic light violation
Sri Lanka	Overtaking, turning, speeding, drink-driving
Viet Nam	Driving in wrong lane, speeding, wrong navigation

Sources: Bangladesh, country presentation delivered at the Euro-Asia Road Safety Forum, New Delhi, 4–6 December 2013. Bhutan, Fiji, India, Nepal, Pakistan and the Philippines, country presentations delivered at the Regional Meeting on Renewing Regional Road Safety Goals, Targets and Indicators, Seoul, 28–29 July 2016. Cambodia, the Lao People's Democratic Republic, Myanmar and Viet Nam, country presentations delivered at the South-East Asia Subregional Workshop on the Updated Regional Road Safety Goals, Targets and Indicators for Asia and the Pacific 2016–2020, Phnom Penh, 27–28 September 2017. Japan, data from 2016, available from www.e-stat.go.jp/SG1/estat/ListE.do?lid=000001174329 (accessed 14 December 2017). Republic of Korea, data from 2014, www.police.go.kr/eng/main/contents.do?menuNo=500133 (accessed 7 March 2018). Sri Lanka, data from 2014–2015, available from www.unescap.org/sites/default/files/20.%20%20Road%20Safety%20Situation%20in%20Sri%20Lanka.pdf (accessed 7 March 2018).

14. Although not among the top causes of road crashes, helmet wearing is a particularly relevant issue in the Asia-Pacific region, where the majority of road traffic fatalities involve vulnerable road users. This issue is particularly relevant in the South and South-West Asian and South-East Asian subregions, where two- and three-wheel vehicles are involved in 30–50 per cent of all fatal road crashes. A total of 42 countries in the Asia-Pacific region have adopted national legislation on helmets. However, helmet-wearing rates for different

countries vary from 6.6 to 99 per cent. In addition, only 23 countries in the region have minimum helmet standards. Helmet standards can be a matter of life and death as wearing a good-quality helmet can reduce the risk of death from a road crash by 40 per cent and the risk of severe injury by more than 70 per cent.¹⁰ In many cases, motorcycle riders wear low-quality helmets to comply with safety regulations, but low-quality helmets may not protect them from death and injury.

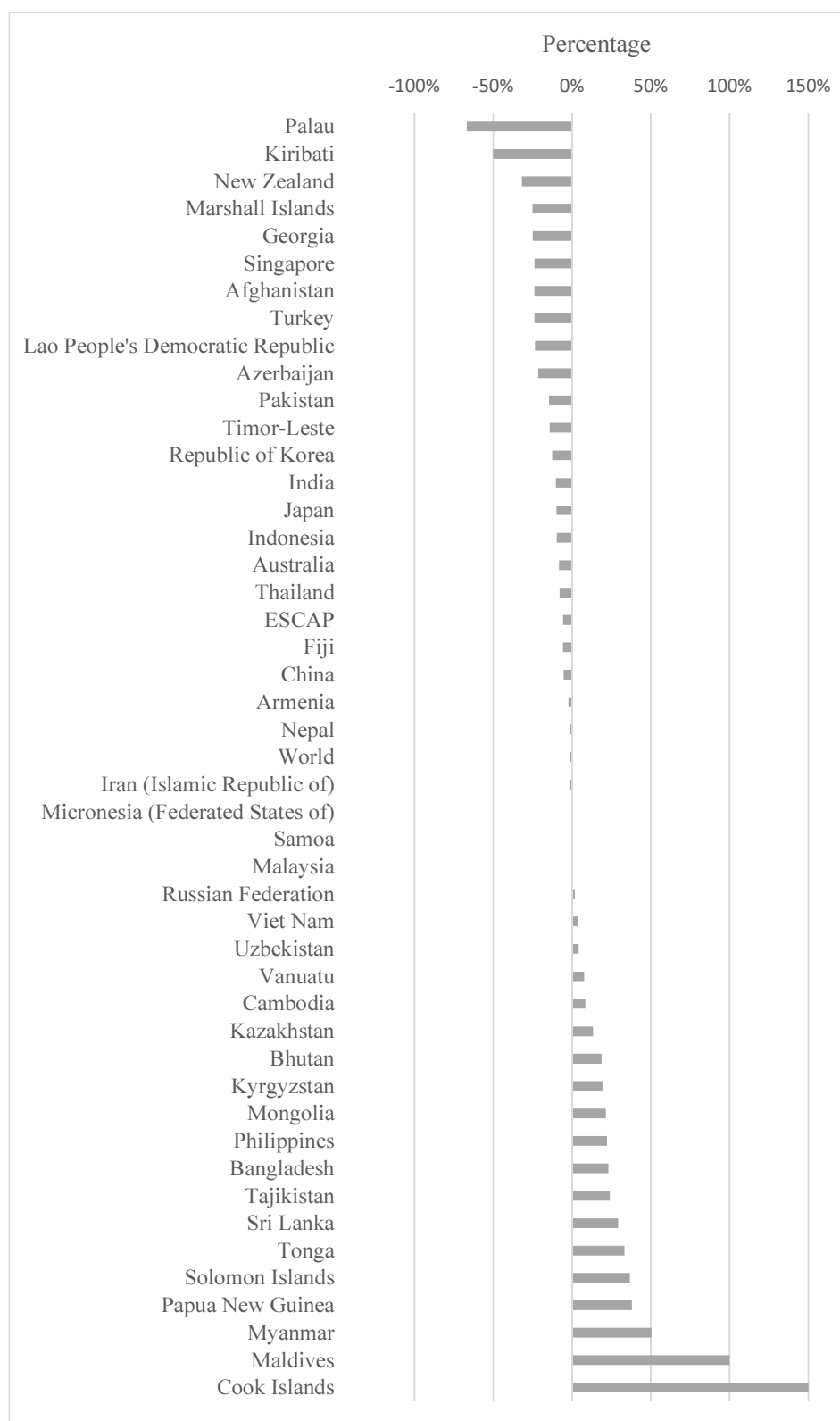
15. Distracted driving and the use of mobile phones while driving has become a growing concern in improving road safety. An overview of available data in the *Global Status Report on Road Safety 2015* suggests that talking on a mobile phone (handheld or hands-free) while driving increases the risk of crash by four times. While many countries in the region have implemented legislation prohibiting the use of mobile phones while driving, there is little evidence of the effectiveness of such measures, due perhaps to difficulties in enforcement.⁴

B. Meeting the Sustainable Development Goal targets: progress so far

16. Since the beginning of the Decade of Action for Road Safety in 2011, progress at the national level in reducing road traffic fatalities has been mixed. Twenty-three member countries have shown progress in the reduction of fatalities and, of those, 18 have performed better than the regional average. Among the top 10 performers, the top 4 are in the Pacific subregion (Palau, Kiribati, New Zealand and the Marshall Islands). The next six top performers are Georgia, Singapore, Afghanistan, Turkey, the Lao People's Democratic Republic and Azerbaijan. Figure III shows the changes in the number of road traffic fatalities in countries in the region.

¹⁰ WHO website article, available from www.who.int/features/factfiles/roadsafety/facts/en/index5.html (accessed 7 March 2018).

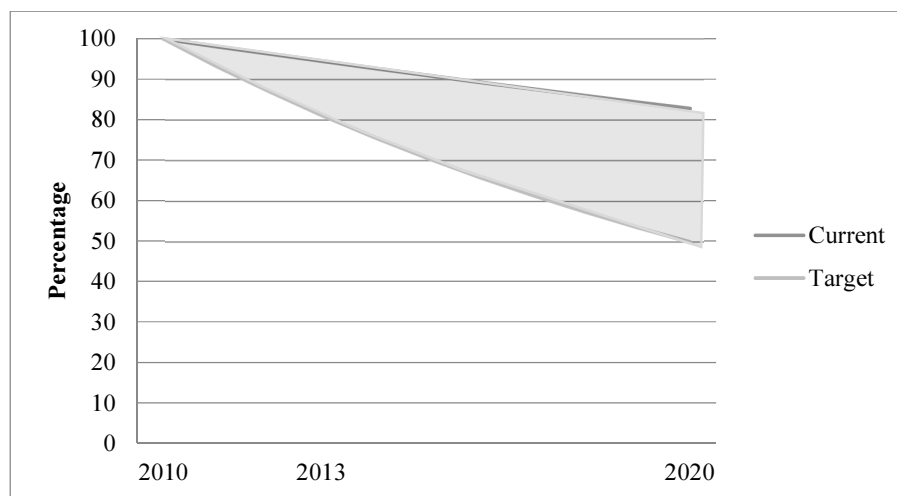
Figure III
**Change in road traffic fatalities in countries in the Asia-Pacific region,
 2010–2013**



Sources: ESCAP calculations based on data from WHO, *Global Status Report on Road Safety 2013* and from WHO, *Global Status Report on Road Safety 2015*.

17. At the regional level, a reduction of only 5.6 per cent in road traffic fatalities was realized between 2010 and 2013. The current performance of the region, with an average reduction rate of 1.9 per cent per annum, is far from sufficient to reach target 3.6 of the Sustainable Development Goals. If the region continues at this pace, it will achieve only a 20 per cent reduction by 2020 (figure IV). Furthermore, reaching the target will be even more challenging given the rising motorization rate in the region, which increased at an average of 7.2 per cent each year between 2010 and 2013.

Figure IV
Estimated reduction of road traffic fatalities, 2010–2020



III. Regional initiatives and efforts to assist member States in improving road safety

A. Regional road safety goals, targets and indicators for Asia and the Pacific

18. Road safety was an issue of serious concern for policymakers in the region prior to the launch of the Decade of Action for Road Safety and the 2030 Agenda. To address the issue, in November 2006, the First Ministerial Conference on Transport adopted the Ministerial Declaration on Improving Road Safety in Asia and the Pacific. The Ministerial Declaration included the goal to save 600,000 lives and to prevent a commensurate number of serious injuries on the roads of Asia and the Pacific from 2007 to 2015. These goals had not yet been met by 2015, the end of the period covered by the Ministerial Declaration. With the global road safety mandate of the Decade of Action for Road Safety, there was a clear need to renew the regional road safety goals, targets and indicators.

19. Based on the comparison of the recommended actions in the Brasilia Declaration on Road Safety, the Global Plan for the Decade of Action for Road Safety 2011–2020 and the previous Regional Road Safety Goals, Targets and Indicators – and in line with target 3.6 of Sustainable Development Goal 3 – the updated Regional Road Safety Goals, Targets and Indicators for Asia and the Pacific 2016–2020 was adopted at the Third Ministerial Conference on Transport. The updated Regional Road Safety Goals, Targets and Indicators for Asia and the Pacific 2016–2020¹¹ serves as an important guide for policy

¹¹ E/ESCAP/73/15/Add.1, annex VI.

design and implementation and provides tools to assess progress in improving road safety at the national and regional levels in this critical period. Its overall objective is to achieve a 50 per cent reduction in fatalities and serious injuries on the roads of Asia and the Pacific from 2011 to 2020 and it includes the following eight goals:

- (a) Making road safety a policy priority;
- (b) Making roads safer for vulnerable road users, including children, older people, pedestrians, non-motorized vehicle users, motorcyclists and persons with disabilities;
- (c) Making roads safer and reducing the severity of road crashes (“self-explaining” and “forgiving roads”);
- (d) Making vehicles safer and encouraging responsible vehicle advertising;
- (e) Improving national and regional road safety systems, management and enforcement;
- (f) Improving cooperation and fostering partnerships;
- (g) Developing the Asian Highway network as a model of road safety;
- (h) Providing effective education on road safety awareness to the public, young people and drivers.

B. Asian Highway design standards for road safety

20. The secretariat, in collaboration with the Korea Expressway Corporation, implemented a three-year project, completed in December 2017, on the development of technical standards on road infrastructure safety facilities and model intelligent transport systems deployments for the Asian Highway network. The project enabled networking and extensive discussions among road safety experts of the region which led to recognition of the Intergovernmental Agreement on the Asian Highway Network as an institutional platform for the coordinated development of road infrastructure safety facilities following harmonized standards by the Asian Highway member countries. As part of the project, the secretariat conducted a study on the development of technical standards for road infrastructure safety facilities for the Asian Highway network. It was determined that annex II to the Intergovernmental Agreement on the Asian Highway Network covered a limited number of road infrastructure safety facilities. This led to the drafting, by the secretariat, of a new annex to the Agreement entitled “Asian Highway design standards for road safety”, aiming to help road safety professionals of the region to create a uniform and predictable driving environment to reduce the risk posed by the existing and rapidly increasing road traffic across the region and beyond.

21. The annex was presented as an amendment for the consideration of the Working Group on the Asian Highway at its seventh meeting, which was held in Bangkok from 13 to 15 December 2017. The Working Group adopted the design standards as annex II bis to the Agreement.¹² The Asian Highway classification and design standards as stipulated in annex II to the Agreement provides the minimum standards and guidelines for construction, improvement and maintenance of Asian Highway routes by the member countries. Additionally, the adoption of annex II bis on road safety by the Working Group

¹² www.unescap.org/resources/road-safety-infrastructure-its.

was a concrete step by the Asian Highway member countries towards strengthening the role of the Agreement as an institutional framework supporting the realization of the Sustainable Development Goals. The new annex was circulated by the Secretary-General to all parties to the Agreement.¹³ In accordance with article 8, paragraph 5 of the Agreement, the new annex shall enter into force 12 months after it has been accepted by two thirds of the parties. A model instrument of acceptance is annexed to the present document for ease of reference. In addition to implementing the design standards as stipulated in the Agreement, member countries are encouraged to follow the detailed “Design guidelines” as a reference document while implementing their road projects.¹³

C. Capacity-building activities to improve road safety in the Asia-Pacific region

22. The Regional Action Programme for Sustainable Transport Connectivity in Asia and the Pacific, phase I (2017–2021) includes road safety as one of its thematic areas. In the new Regional Action Programme, the immediate objective under the road safety theme is to ensure that countries in the region are assisted in improving road safety situations and meeting their commitments under the Decade of Action for Road Safety and Sustainable Development Goals 3 and 11.

23. To assist member countries in increasing their capacities to improve road safety, various awareness-raising and capacity-building activities have been carried out in the ESCAP region. Recent activities include a Central Asia Regional Economic Cooperation road safety workshop organized by ESCAP and the Asian Development Bank, held in Bangkok on 18 and 19 April 2016; a regional workshop on motorcycle helmets held in Kuala Lumpur on 7 April 2017, organized in collaboration with the Special Envoy of the Secretary-General for Road Safety and the Economic Commission for Europe for the countries in South and South-East Asia; a subregional workshop on the implementation of the updated Regional Road Safety Goals, Targets and Indicators for Asia and the Pacific 2016–2020, held in Phnom Penh on 27 and 28 September 2017; and an advisory group meeting on vulnerable road users’ safety in South-East Asia, held in Bangkok on 2 October 2017. As part of the United Nations Development Account project, the secretariat held national capacity-building workshops on the implementation of road safety-related legal instruments (Hanoi, 12 and 13 January 2017 and Ho Chi Minh City, Viet Nam, 16 and 17 January 2017) and road safety audits (Hanoi, 12 to 18 June 2017 and Ho Chi Minh City, Viet Nam, 19 to 25 June 2017).

24. For the period 2018–2019, the secretariat is implementing a project on tackling the main causes of road traffic crashes, fatalities and injuries in Asia-Pacific countries to achieve the road safety targets of the Sustainable Development Goals, funded by the Global Fund of the Russian Federation. The project aims to support ESCAP member States in increasing awareness and capacities to create and implement comprehensive road safety policies and plans that address the main causes (speeding and drink-driving) of road traffic crashes, fatalities and injuries.

25. The secretariat also plans to organize national-level capacity-building activities jointly with the Special Envoy for Road Safety. The activities will be organized in selected member countries upon their official request.

¹³ Depository Notification C.N.53.2018.TREATIES-XI.B.34.a of 26 January 2018, available from <https://treaties.un.org/doc/Publication/CN/2018/CN.53.2018-Eng.pdf>.

IV. Opportunities and ways forward

26. Road traffic fatalities and injuries are a sustainable development issue of serious concern, considering their magnitude and negative impacts on the economy, public health and the general welfare of the people, particularly low-income groups. Every road traffic fatality and injury leads to human suffering and comes at a sizeable economic cost, yet most road crashes are, in principle, preventable.

27. While important progress has been made in improving road safety in the ESCAP region, it is still far from reaching the 50 per cent reduction target. There is a need to step up efforts at the national and regional levels to improve the situation. In addition to the above-mentioned activities carried out by the secretariat, various other measures can enhance road safety improvement in the region.

28. Collection and use of accurate data on road crashes and severity levels are essential to monitor road safety progress, tailor prevention efforts, assess progress and compare the scale of road traffic fatalities relative to fatalities from other causes. Traffic fatalities per 100,000 inhabitants is one of 10 indicators in the sustainable urban transport index developed by the secretariat in 2017, which ideally uses a harmonized procedure for data collection to enhance comparability of results across cities. However, data constraints and inaccurate data reporting systems prevent understanding of the real magnitude of the road safety problem. Greater progress in harmonizing data collection, monitoring and reporting systems across the region is essential.

29. A road safety audit is a useful tool for improving road infrastructure safety facilities, if it is conducted in a systematic and efficient way. If an audit is not conducted by an independent and qualified auditor, it may not bring in expected results. Similarly, if an audit is not legally binding, road agencies may tend to skip one or more steps of the audit. Moreover, quality of road infrastructure can only be improved to meet established design standards if an appropriate procedure for a road safety audit is followed. Given national differences in road safety audit procedures, it is essential to develop a model road safety audit guideline for the region so that member countries can adopt and implement a harmonized procedure for road safety audits.

30. Intelligent transport systems can be a valuable tool to improve road safety in member countries. The use of such applications has played a significant role in enhancing traditional traffic management systems, such as collision warning systems, emergency vehicle notification systems, and road enforcement and variable speed limit systems which contribute to road safety. A study has shown that an automated speed enforcement system deployed in the Republic of Korea reduced crash frequency by 28 per cent and decreased crash fatalities by 60 per cent.¹⁴ One of the latest intelligent transport system concepts is autonomous vehicles (also called self-driving cars) which use satellite positioning systems and diverse sensors to detect and move through the surrounding environment. While the appropriate legislation to regulate this new technology is still being discussed and relevant technologies are still being

¹⁴ Jeong-Gyu Kang and Chang-Eui Hong, "A Study on the Effect of Automated Speed Enforcement Systems on Traffic Flow Characteristics", Seoul, paper presented at the 5th World Congress Conference on ITS, 1998. Available from www.itsbenefits.its.dot.gov/its/benecost.nsf/ID/E3D512F0F38DD85285256B6000627E82?OpenDocument&Query=Home.

developed, when they become fully functional, they could reduce road traffic crashes and improve road safety.

31. The safe system approach in road safety is a concept that takes into consideration the following ideas: human beings make mistakes and road crashes are inevitable; the human body has a limited ability to withstand crash forces; and system designers as well as system users must all share responsibility for managing crash forces to a level that does not result in death or severe injury. Therefore, a holistic approach addressing all factors that may be involved in a road crash is necessary. In many ESCAP member countries, road-safety infrastructure-related interventions are still implemented as a component of an overall highway project. Implementation of well-coordinated road safety projects involving multiple sectors is necessary.

Annex

Model Instrument of Acceptance of Amendment

*(to be signed by the Head of State, Head of Government or
Minister for Foreign Affairs)*

WHEREAS the Intergovernmental Agreement on the Asian Highway Network was adopted at Bangkok on 18 November 2003, and **[ratified, accepted, approved, definitively signed or acceded to]** by **[State]** on **[date of deposit of its instrument of ratification, acceptance, etc.]**,

WHEREAS the Working Group on the Asian Highway at its seventh meeting, held in Bangkok on 13–15 December 2017, adopted the following Amendments in accordance with Article 8 of the Agreement:

Article 10, Title: *after annexes II add II bis*

Article 10, paragraph 1: *after Annexes II add II bis*

Article 17: *after Annexes I, II add II bis*

WHEREAS these amendments, resulting in the introduction of a new Annex II bis “Asian Highway Design Standards for Road Safety”, were communicated by the Secretary-General to all Parties by Depository Notification C.N.53.2018.TREATIES-XI.B.34.a on 26 January 2018,

NOW THEREFORE I, **[name and title of Head of State, Head of Government or Minister for Foreign Affairs]**, declare that the Government of **[State]**, having considered the above-mentioned Amendments, accepts the same and undertakes faithfully to perform and carry out the stipulations therein contained.

IN WITNESS WHEREOF I have signed this instrument of acceptance at **[place]** on **[date]**.

[Signature]
