UNITED NATIONS
ECONOMIC
AND
SOCIAL COUNCIL

GENERAL

E/ESCAP/MCT/SGO/9
28 September 2006

ORIGINAL: ENGLISH

ECONOMIC AND SOCIAL COMMISSION FOR ASIA AND THE PACIFIC

Meeting of Senior Government Officials in preparation for the
Ministerial Conference on Transport

6-8 November 2006
Busan, Republic of Korea

ROAD SAFETY IN ASIA AND THE PACIFIC

(Item 6 of the provisional agenda)

Note by the secretariat

SUMMARY

The objectives of the present document are to describe and analyse (a) the status of road safety in the ESCAP region and (b) national and regional efforts to improve the situation. The document provides an overview of the global and regional road safety situation and the relevant mandates for international collaborative action. It illustrates selected issues, experiences and lessons learned from national activities designed to improve road safety in the ESCAP region, including information pertaining specifically to the Asian Highway and the important role of road safety targets. It also reviews global, regional and subregional cooperation for improving road safety in the ESCAP region, and suggests issues for consideration.

The secretariat has prepared a draft text on improving road safety in Asia and the Pacific (E/ESCAP/MCT/SGO/10) which the Meeting is invited to consider as the basis for a ministerial declaration.

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I. BACKGROUND

1. The objectives of the present document are to describe and analyse (a) the status of road safety in the ESCAP region, and (b) national and regional efforts to improve the situation. It provides background information for the discussion of the anticipated ministerial declaration on improving road safety in Asia and the Pacific (E/ESCAP/MCT/SGO/10).

2. Section I provides an overview of the global and regional road safety situation and relevant mandates for international collaborative action. Section II illustrates selected issues, experiences and lessons learned from national activities to improve road safety in the ESCAP region, including information pertaining specifically to the Asian Highway. Section III reviews global, regional and subregional cooperation for improving road safety in the ESCAP region. Section IV suggests issues for consideration by the Ministerial Conference on Transport.

A. Global road safety crisis and the General Assembly

3. Globally, road traffic accidents kill an estimated 1.2 million people and injure or disable up to 50 million people per year, leading to annual costs of more than US$ 500 billion. Currently, road traffic accidents rank as the eleventh leading cause of death, similar to malaria, and road traffic injuries are predicted to become the third largest contributor to the global burden of disease by 2020, ahead of HIV or tuberculosis. Today, road traffic injuries are the second most important cause of death for people between 5 and 29 years of age.[1] In this age group, young men, whether they are pedestrians, cyclists, motorcyclists, novice drivers or passengers, are nearly three times more likely to be killed or injured on the road than young women.

4. Since the 1990s, global concern has mounted over the rapid increase in the number of road deaths, as many developing countries, including populous China and India and other ESCAP member countries, have entered the phase of rapid motorization.[2] Today, more than 90 per cent of road traffic deaths occur in low- and middle-income countries. It has been recognized that many road accidents could have been avoided and that road safety is a development issue for many countries.

5. The General Assembly has adopted a series of resolutions in which it called on member countries, the World Health Organization (WHO) and the regional commissions to address what it called a global road safety crisis. In fact, four such resolutions on road safety have been adopted since 2003: they are resolutions 57/309 of 22 May 2003, 58/9 of 5 November 2003, 58/289 of 14 April 2004 and 60/5 of 26 October 2005. The General Assembly, in its resolution 58/289 of 14 April 2004 on improving global road safety, underlined the need for the further strengthening of international cooperation, taking into account the needs of developing countries, to deal with issues of road safety.

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[1] M. Peden, et al, (eds.), *World Report on Road Traffic Injury Prevention* (Geneva, WHO, 2004).

[2] It should be noted, though, that road safety is hardly a new issue: "At the height of the horse era, riding horses may have caused as many as 25,000 traffic fatalities per year. Today's death toll from motor vehicle accidents in the United States of America is about 50,000 per year for at least ten times as many road vehicles." This is despite the fact that cars have been roughly ten times as safe as horses per kilometre travelled. Source: A. Gruebler, *Technology and Global Change* (London, Cambridge University Press, 1998).

6. In adopting the resolution, the General Assembly noted the recommendation contained in the report of the Secretary-General on the global road safety crisis[3] that the regional commissions be called on to add to their respective work programmes activities that would, inter alia, develop short- and medium-term strategies to address road safety priorities.

7. The most recent resolution adopted by the General Assembly, resolution 60/5 of 26 October 2005 on improving global road safety, was sponsored by 85 Member States, among which were 27 ESCAP members.[4] The Assembly highlighted a number of specific measures that Member States were invited to take. These included implementing the recommendations contained in the report of WHO on the global road safety crisis[5] related to the use of safety belts and child restraints, the use of helmets, drinking and driving, inappropriate and excessive speed, and the lack of appropriate infrastructure. It also invited Member States to establish a lead agency, on a national level, on road safety and to develop a national action plan to reduce road traffic injuries, by passing and enforcing legislation, conducting necessary awareness-raising campaigns and putting in place appropriate methods to monitor and evaluate interventions that are implemented.

B. Overview of road safety in Asia and the Pacific

8. The ESCAP secretariat estimates that 440,000 people were killed[6] and at least 2 million injured[7] in accidents on the roads of the ESCAP region in 2005. Higher estimates, of up to 20 to 30 million injuries in the region, are implied by recent reports.[8] Despite some serious data issues, it is safe to say that more than half of the world's traffic fatalities occur in the ESCAP region, even though only one in five of the world's motor vehicles are registered in the region. It should also be noted that roughly half of all road fatalities in the ESCAP region occurred in China and India.

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[3] A/58/228.

[4] Those members are: Afghanistan Armenia, Australia, Azerbaijan, Bangladesh, Brunei Darussalam, Cambodia, China, France, India, Indonesia, Fiji, Iran (Islamic Republic of), Kazakhstan, Malaysia, Nepal, New Zealand, Pakistan, Philippines, Russian Federation, Singapore, Thailand, Timor-Leste, Turkey, Turkmenistan, United Kingdom of Great Britain and Northern Ireland and Viet Nam.

[5] A/60/181 and Corr.1.

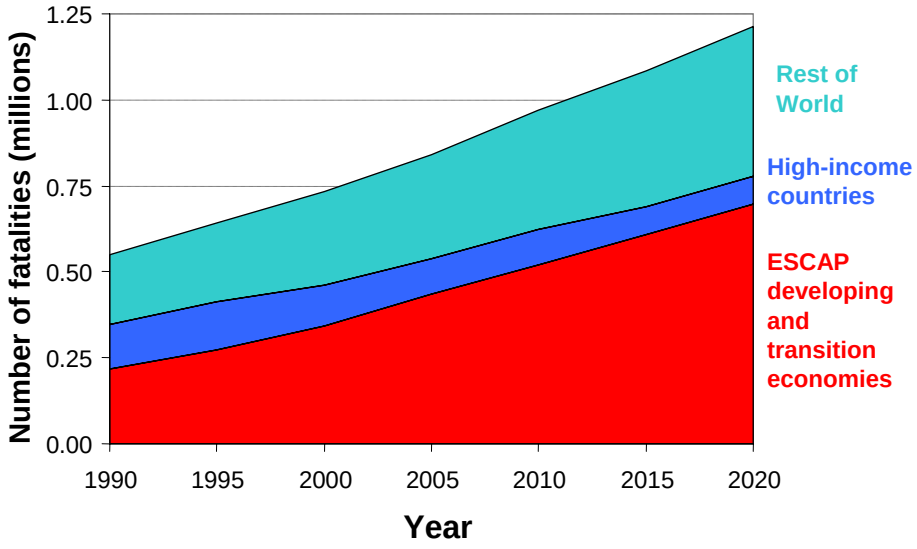
[6] Only rough estimates exist of the number of road deaths and particularly of road accidents in the ESCAP region. This is due to non-comprehensive coverage of accident reporting systems and underreporting by police. The estimate of 440,000 road deaths has already been adjusted for underreporting. It is based on police-reported data and the methodology described in E. Kopits, M. Cropper, "Traffic fatalities and economic growth", (Washington DC, World Bank, 2003), Policy Research Working Paper No. 3035. This was used on page 38 of M. Peden, et al, (eds.), *The World Report on Road Traffic Injury Prevention* (Geneva, WHO, 2004). Note that the sum of police-reported road traffic deaths in the ESCAP region (data available for 26 countries only) was 299,446 in 2005. Still, the estimate of 440,000 is rather conservative compared to estimates highlighted in the latter report (which reports 1.2 million road deaths worldwide of which 650,000 have occurred in the ESCAP region).

[7] This number is based on accidents reported.

[8] The number of roughly 20 million injuries is implied by the global estimates published in the 2004 WHO report (footnote 1).The number of 30 million injuries in 2005 is derived by assuming the ratio of the number of injuries to fatalities in the ESCAP region is the same as in the ASEAN region. A. Ross, C. Melhuish, "Road Safety in ASEAN: Introducing a regional approach", *Transport and Communications Bulletin for Asia and the Pacific*, No. 74 (Road Safety), Bangkok, ESCAP, 2005), p. 1-15.

9. In recent decades, the number of road users killed in accidents has increased rapidly in Asia, mainly due to the rapid rate of motorization. The increase in the fatality rate has continued despite the fact that vehicles have become safer. The ESCAP secretariat estimates that, by 2020, about two thirds of the world's road deaths (or 610,000 road deaths) could occur in the ESCAP region (figure 1).[9]

Figure 1. Number of road traffic fatalities from 1990 to 2020



Source: ESCAP secretariat.

[a] The number of fatalities after 2005 are expected under a dynamic-as-usual scenario, adjusted for underreporting and following the methodology, and GDP projects, of E. Kopits, M. Croppers, "Traffic fatalities and economic growth", World Bank Policy Research Working Paper No. 3035 (Washington DC, World Bank, 2005).

[b] A high-income country having an annual gross national product (GNP) per capita equivalent to $9,206 or greater in 2003. There are currently about 29 high-income countries in the world with populations of one million people or more. Their combined population is about 0.9 billion, less than one-sixth of the world's population.

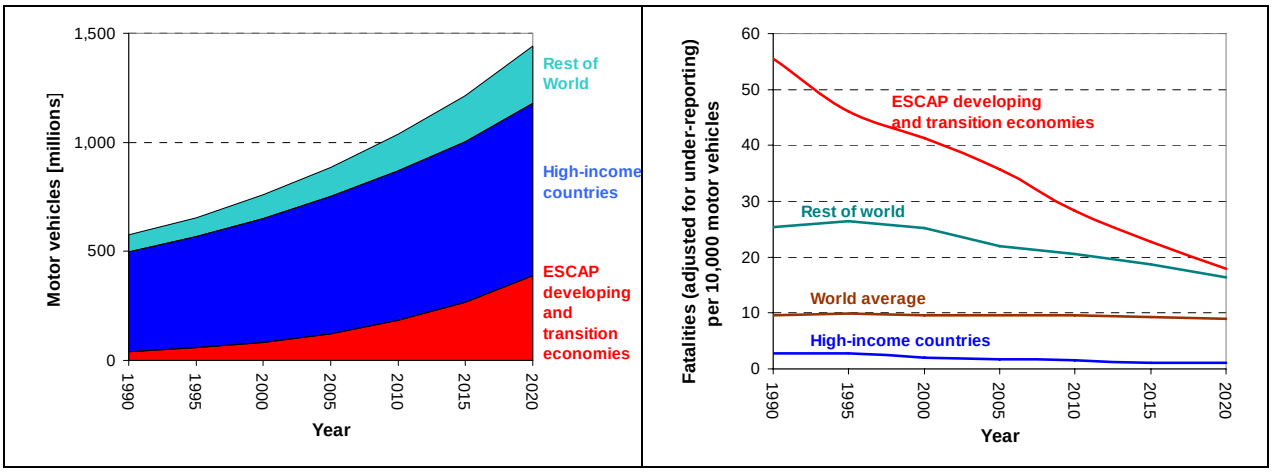
10. Figure 2 illustrates that the increase in the number of deaths on Asia's roads has been almost entirely due to rapid motorization. The overall number of road traffic fatalities (adjusted for underreporting and excluding two- and three-wheeled vehicles) per 10,000 motor vehicles[10] in the ESCAP region has remained stable at around 20 or twice the world average since the early 1990s.[11] Further details of key road safety related indicators for selected ESCAP member countries are contained in annex I.

[9] The calculations use the same assumptions and methodology as the dynamics-as-usual scenario published in Kopits and Cropper, op. cit. (see footnote 6).

[10] The official United Nations Statistics Division's definition of motor vehicle is used here: "Motor cars and buses, passenger motor vehicles for unusual terrain such as snow mobiles and golf carts, motor vehicles for goods transport, special purpose trucks such as fire engines and mobile clinics." Thus, this definition does not include two- or three-wheelers, which are numerous in ESCAP developing countries. In practice, however, various differing definitions are used by statistical offices in ESCAP countries. For more information see http://unstats.un.org/unsd/cdb/cdb_dict_xrxx.asp?def_code=98

[11] Fatality rates quoted by ESCAP developing countries are often smaller than those of figure 2. This is because (a) these countries might include large numbers of two- and three-wheelers in their definitions of "motor vehicle" in contrast to the United Nations definition (footnote 10) and (b) these countries might use police-reported data (which are incomplete).

Figure 2. Number of motor vehicles and number of road traffic fatalities



Source: ESCAP (Asia-Pacific road safety database http://www.unescap.org/ttdw/data/aprad.aspx), ESCAP secretariat estimates; M. Peden, et al (eds.) *World Report on Road Traffic Injury Prevention* (Geneva, WHO, 2004).

* Adjusted for underreporting.

[a] The official United Nations Statistics Division's definition of motor vehicle is used here: "Motor cars and buses, passenger motor vehicles for unusual terrain such as snow mobiles and golf carts, motor vehicles for goods transport, special purpose trucks such as fire engines and mobile clinics." Thus, this definition does not include two- or three-wheelers, which are numerous in ESCAP developing countries. In practice, however, various differing definitions are used by statistical offices in ESCAP countries. For more information see http://unstats.un.org/unsd/cdb/cdb_dict_xrxx.asp?def_code=98

11. The per capita number of road users killed in accidents has been particularly high in middle-income and newly industrialized economies. Higher fatality rates per unit of population are also linked to higher vehicle densities (measured in vehicles per kilometre of road), regardless of the level of motorization. This shows the important link between road safety and infrastructure development in general.

12. The nature of road safety issues in the developing countries of the ESCAP region differs significantly from that in developed countries. In Asia, most of those killed or injured in road accidents are vulnerable road users, such as pedestrians and motorcyclists. In South Asian countries, typically more than 50 per cent of all road fatalities are pedestrians. In East and South-East Asian countries, more than two thirds of the victims are motorcyclists. In contrast, casualty rates in North and Central Asian countries are typically similar to those of the member countries of the Organization for Economic Cooperation and Development (OECD). Yet, all the developing countries of the ESCAP region have higher fatality rates than the member countries of OECD.

13. Motorization rates range widely in the ESCAP region, with the number of private cars per thousand people ranging from 11 to 684.[12] Two- and three-wheelers constitute more than two thirds of all motorized vehicles in Cambodia, Bangladesh, Nepal, Sri Lanka, Indonesia, the Lao People's Democratic Republic, Myanmar, Thailand, Viet Nam, and other developing ESCAP member

[12] For the 22 Asian Highway countries for which data was reported to the ESCAP secretariat for an expert group meeting held from 8 to 10 May 2006, see http://www.unescap.org/ttdw/common/tis/ah/egm_may06.asp.

countries. However, the comparatively larger impact of road accidents on vulnerable groups in the developing countries of the ESCAP region is not merely due to a different vehicle mix; it appears to be a systemic issue in which accidents disproportionately impact lower income groups and younger people.

14. The economic cost of road accidents ranges from 1 to 3 per cent of the GDP of each ESCAP member country, indicating the potential for substantial returns on investments in road safety interventions.[13] The secretariat estimates the economic costs at US$ 106 billion or equivalent to 2.3 per cent of the GDP of the developing and transition economies in the ESCAP region.

II. ROAD SAFETY ISSUES, EXPERIENCES AND LESSONS LEARNED IN ESCAP MEMBER COUNTRIES

15. This section illustrates selected issues, experiences and lessons learned from national activities to improve road safety in the ESCAP region, including information pertaining specifically to the Asian Highway.[14] It shows the important progress made in improving road safety in many ESCAP member countries. Yet, it is important to note that, in most cases, this progress is merely mitigating the rapid increase in the number of fatalities and injuries due to rapid motorization.

A. Government policy, road safety targets and resources

1. Policies, programmes and plans

16. Against the background of urgency described above, most ESCAP member countries have recognized the importance of a political commitment to improving road safety. In fact, many have made impressive progress in recent years. Yet, great potential for further improvement remains.

17. Road safety is an important issue on the Governments' agendas, as indicated by the fact that most ESCAP member countries appear to have a road safety strategy and/or policy, programme and action plan.[15] Historically, OECD member countries and some ESCAP developing member countries have initiated road safety policies when the number of private passenger cars started to increase rapidly.[16] However, several developing countries in the ESCAP region have not followed this pattern. These countries developed road safety plans relatively earlier, in the 1990s or later, when the number of motorcycles started to increase rapidly.

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[13] Economic costs of road accidents when expressed as a percentage of GDP roughly appears to follow the following relationship: Losses [% of GDP] = 0.0297 * EXP(-8*10^(-5) * (GDP per capita)). In other words, losses are roughly 3 per cent in poorer developing countries and become less than 1 per cent for developed economies.

[14] Information refers primarily to a sample from Fiji and 22 Asian Highway network countries for which such information was available to the secretariat. This sample is representative of the whole ESCAP region, covering the vast majority of the population (roughly 3.3 of 3.8 billion) of the region.

[15] For more information see the following link to the Expert Group Meeting on the Development of the Asian Highway Network http://www.unescap.org/ttdw/common/tis/ah/egm_may06.asp

[16] For example, this level was reached by Japan in 1971 and the Republic of Korea in 1992, when both countries had a PPP of 9,000 US$, measured in (1990) International Geary-Khamis dollars. The Australian Road Safety Council was established in 1947.

18. In Japan, a succession of five-year fundamental traffic safety programmes and targets, the first of which began in 1971, has reduced the number of road traffic fatalities from 16,765 in 1970 to 6,871 in 2005. In the Republic of Korea, national road safety campaigns have reduced the number of road traffic fatalities from 13,429 in 1991 to 6,563 in 2004. In Nepal, the first road safety strategy was prepared in 1994. In Viet Nam, the national road code recognizes all citizens as stakeholders, ensuring the timely flow of traffic safety information from local stakeholders to decision makers by employing specific incentives for participation. This has resulted in the number of accidents decreasing dramatically since 2002.

19. Recent recommendations by OECD on road safety action plans are also relevant for the ESCAP region:[17] action plans need to be comprehensive but focused, and should be developed jointly with all relevant stakeholders. It is preferable for overall political and technical responsibility for traffic safety policy to be at the national level. Long-term planning would be preferred and should focus on reducing risks and exposure. Possible road safety measures need to be ranked/prioritized with the help of social cost-benefit analysis. This requires efforts to obtain quality data.

20. WHO stresses the importance of political will, and the sharing of information, goals and budgets, in order to successfully implement road safety plans. Due to the multi-sectoral nature of road safety, challenges remain, particularly in implementing new measures and maintaining a balanced focus. In particular, designating a lead agency or setting up a coordination mechanism remains a challenge in many ESCAP member countries. In fact, in some countries, road, health and police related organizational units appear to compete with each other rather than work together. It should also be noted that sometimes a more complex setup at various levels of political responsibilities rather than the designation of a lead agency has proven successful. Examples of this include India, Viet Nam, and Japan. In India, high-level institutional structure and policy guidance is provided by the National Road Safety Council, whose membership comprises representatives from both central and state governments.[18]

2. National road safety visions and targets

21. In some countries or areas, long-term road safety visions have been developed, inter alia, in order to ensure that road safety issues gain a prominent place in transport policy. For example, the Governments of Canada and Japan have adopted the vision of having the “safest roads in the world”, Sweden has adopted the initiative “vision zero”, and the Netherlands envisions “sustainable safety”. The Government of Mongolia proposed that 2004 be “a year without any accidents”, and Hong Kong, China, works towards “zero deaths on the road”.

[17] OECD, *Safety on Roads: What’s the Vision?* (Paris, OECD, 2002).

[18] The establishment of a permanent national expert body at the working level might complement this structure in the future.

22. A study by OECD[19] have illustrated the value of quantitative road safety targets: "It appears that targets have proven to be a valuable tool in the development of effective road safety programmes. Whether developed through a "top-down" or "bottom-up" process, a measurable, clear and ambitious target can motivate all the actors involved in road safety, and greatly increases the likelihood of effective programme development and improved road safety at the national, regional and local levels". In fact, most OECD countries have ambitious quantitative targets, with planned annualized absolute reductions in the number of fatalities by 1.5 to 13.9 per cent per year.

23. Similarly, ESCAP member countries that have adopted qualitative and/or quantitative road safety targets have tended to be more successful in terms of actual improvements than those without targets. Particularly successful examples include Japan, the Republic of Korea, Viet Nam, and Nepal. Table is a sample of national road safety targets of ESCAP members (as of 2006). For example, the Japanese road safety target contained in the current five-year plan foresees road traffic fatalities falling to below 5,500 by 2010. In the Republic of Korea, the national goal is to reduce road fatalities by 50 per cent by 2010. In Singapore, the Road Safety Action Plan specifies a goal of reducing the number of fatalities by 100 over a 5-year period (2004-2008). The Malaysian road safety targets foresee a reduction to below 2 deaths per 10,000 registered vehicles, 10 deaths per 100,000 people and 10 deaths for a billion kilometres traveled by 2010. Adding up the targets of ASEAN countries implies a target of reducing the fatality rate by 12 per cent in 5 years, or an annualized average of 2.3 per cent. Some Asian countries have even more ambitious targets. If achieved, these targets imply substantial savings in terms of lives and costs.

24. The ESCAP secretariat estimates that extending the existing ASEAN target[20] to the whole ESCAP region and to the year 2015[21] could reduce the fatality rate (per vehicle) by 20 per cent, saving 600,000 lives and almost US$ 100 billion.

25. It should be noted, however, that most of the road safety targets of ESCAP developing countries are reductions relative to projected or expected increases in road fatalities, implying an increase in absolute numbers of road fatalities due to continued motorization in the years to come.

[19] OECD, *Safety on Roads: What's the Vision?* (Paris, OECD, 2002).

[20] The ASEAN target is equivalent to an annualized reduction in the number of projected road deaths by 2.3 per cent.

[21] This is equivalent to a reduction of the ESCAP fatality rate per vehicle by 20 per cent from 2007-2015.

Table. Current national road safety targets of ESCAP member countries

ESCAP members and associate members	*Overall target*	*Annualized reductions [% of total number of fatalities]*
Armenia	Decrease the number of accidents.	
Australia	2001 - 2010: "The target of the strategy is to reduce the annual number of road fatalities per 100,000 population by 40%, from 9.3 in 1999 to no more than 5.6 in 2010."	-4.6% in absolute terms
Bhutan	Focus on education, awareness, habits and enforcement.	
Brunei Darussalam	Save more than 56 lives in 5 year period of action plan (for 2008) [Reduction of 45 lives and 2028 injuries (2005-2010)].	
Cambodia	"Eliminate number of road fatality by educating peoples through illustrating posters, TV spots and radio broadcasting on road safety program"; ADB-ASEAN target of saving 1,800 lives and prevent 36,000 injuries during 2005-2010.	
France	Halve the number of road fatalities from 1997 to 2002	-13.9% in absolute terms
India	Various targets of state Governments.	
Indonesia	For 2005-2010: save 20,411 lives, 3.4% deaths per 10,000 vehicles, increase seat-belt and helmet use to 90%; ADB-ASEAN target of saving 12,000 lives and preventing 996,000 injuries during 2005-2010.	
Japan	2006-2010: a) "Safest roads in the world" (<5500 deaths); b) Less than 1 million injuries and deaths.	
Kazakhstan	Reduce the number and severity of accidents.	
Lao People's Democratic Republic	Save 917 lives and 21,000 injuries by the year 2010 by halving the anticipated increase in deaths and injuries; increase helmet wearing to 90%.	-9.9% of projected deaths
Malaysia	By 2010, reduce the fatality rate to 2 per 10,000 vehicles, 10 per 100,000 people and 10 per billion vehicle-km; ADB-ASEAN target of saving 3,000 lives and preventing 21,900 injuries during 2005-2010.	
Myanmar	ADB-ASEAN target of saving 940 lives and preventing 32,900 injuries during 2005-2010.	
Nepal	Halve the number of road casualties in ten years.	-6.9% in absolute terms
Netherlands	Reduce the number of road deaths by 25 per cent during 1985-2000 and by 50 per cent during 1986-2010.	-1.5% and -2.9% in absolute terms
New Zealand	Reduce the road toll to no more than 300 deaths and fewer than 4,500 hospitalisations per year by 2010 (from 404 fatalities in 6,670 hospitalisations in 2002).	-3.7% and -4.9% in absolute terms
Philippines	ADB-ASEAN target of saving 3,000 lives and prevent 258,000 injuries during 2005-2010.	
Republic of Korea	"Prevent road accidents and advance transport culture"; reduction of 62% between 2000 and 2006.	-8.0% in absolute terms
Russian Federation	Local target in Krasnoyarsk region "to decrease the accident rate by 10-15% and the number of victims of road accidents by 10-12% every year".	
Singapore	Reduce fatalities by 100 between 2004 and 2008. ADB-ASEAN target of saving 100 lives and prevent 4,300 injuries during 2005-2010.	
Thailand	ADB-ASEAN target of saving 13,000 lives and prevent 1,508,000 injuries during 2005-2010.	
Turkey	Reduce fatalities and injuries on highways by 40% within 5 years.	-6.7% in absolute terms
United Kingdom	Reduce the number of road deaths and serious injuries by 40 percent during 1998-2010.	-2.8% in absolute terms
United States of America	Reduce the number of all road deaths by 20 per cent during 1996-2008, and to reduce the number of road deaths involving large trucks by 50 per cent during 1998-2010.	-1.5% and -3.4% in absolute terms
Viet Nam	ADB-ASEAN target of saving 7,000 lives and prevent 16,100 injuries during 2005-2010.	
Others		
European Union	Reduce road deaths by 15 per cent during 1995-2000 and by 40 percent during 1995-2010.	-2.8% and -3.4% in absolute terms
African Union	Rate of road accident fatalities reduced by half during 2005-2015 (in terms of fatalities per vehicle-kilometres).	-6.9% of fatalities per vehicle-km
ASEAN	Reduce the number of projected road deaths and injuries by 12 percent during 2005-2010.	-2.3% of projected deaths

Sources:

[a] Information refers primarily to a sample from Fiji and 22 Asian Highway network countries for which such information was available to the secretariat. This sample is representative of the whole ESCAP region, covering the vast majority of the population (roughly 3.3 of 3.8 billion) of the region.

[b] For more information see the following link to the Expert Group Meeting on the Development of the Asian Highway Network http://www.unescap.org/ttdw/common/tis/ah/egm_may06.asp

[c] OECD, *Safety on Roads: What's the Vision?* (Paris, OECD, 2002).

3. Financial and human resources

26. Financial and human resources specifically dedicated to improving road safety are limited in many ESCAP member countries. In fact, such resources are derived almost exclusively from public budgets and only rarely from special funds,[22] levies or other sources. In addition, some funding for maintenance and construction of roads is not considered road safety spending for budgetary purposes. Such non-dedicated road safety funding increases safety, since road engineers generally aim to build "easy, safe and comfortable" roads. It should be noted that the Commission for Global Road Safety, also known as the Lord Robertson Commission, has recommended that "all donor-supported road projects in developing countries should include a minimum 10 per cent road safety component".[23] As no clear definition of road safety component exists, it is difficult to ascertain the current share of road projects that is actually motivated by or has been added due to road safety concerns.

27. Several cases of generous funding for road safety are noteworthy in the ESCAP region. For example, in China a large-scale black spot programme at a cost of US$ 820 million was carried out. Viet Nam opted for dedicated resources for road safety that were provided through a US$ 36 million World Bank loan project and a project funded by the Japanese Bank for International Cooperation (JBIC). Similarly, the Islamic Republic of Iran implemented dedicated road safety projects with support from the World Bank at a cost of US$ 104 million. Nepal has reduced the number of accidents at 10 road intersections by 80 per cent with assistance from Japan, showing a social rate of return on investment of 1,000 per cent for the first year.

B. Safer road users

28. In most ESCAP member countries, road user behaviour is the most important cause of accidents. Countries have addressed this issue through a combination of road safety campaigns and legislative actions. Focus areas are the use of helmets and seat belts, motorcycle daytime running lights, drinking and driving, pedestrian safety, and the introduction of road safety elements into the school curriculum.

29. In order to make road safety campaigns sustainable, it is important to encourage leadership and road safety "champions". Of course, the means of raising awareness have ranged widely, from staging local neighbourhood dramas depicting road accident scenes to mass media campaigns. The methods are chosen to match local conditions, including literacy rates, network accessibily and local customs. China, the Islamic Republic of Iran, and the Republic of Korea have reported major mass media campaigns in recent years.

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[22] Exceptions include Japan and the Republic of Korea. In 2005, the Republic of Korea invested US$ 1.6 billion in road safety, funded also from a special traffic account.

[23] Kate McMahon and David Ward, *Make Roads Safe: A New Priority for Sustainable Development* (London, Commission for Global Road Safety, 2006).

30. While the use of helmets and seat belts is mandated by law in almost all ESCAP member countries, actual compliance and enforcement varies from only a small percentage to almost 90 per cent. In 1992, Australia became the first country in the region to introduce compulsory seat belts in passenger. This resulted in a 40 to 60 per cent reduction in the risk of injury or death. Due to the success of Australia's seat belt policy, since the 1990s most ESCAP member countries have followed this example. For example, the Republic of Korea introduced compulsory seat belt use in 1990, supported by a mass media campaign in 1992. In India, noteworthy initiatives include motorcycle manufacturers organizing training camps and the Government requiring motorcycle vendors to sell minimum standard helmets with every sale of a motorcycle.

31. Several ESCAP member countries have experienced significant reductions in motorcycle accidents following the introduction of laws that mandate motorcycle headlights to be on whenever the engine is running. More than half of Malaysia's motorized vehicles are motorcycles. For this reason, Malaysia pioneered a "daytime running headlights" campaign in 1992 which reduced conspicuity related motorcycle accidents by almost 30 per cent.[24] After an initial two-month multimedia campaign on running headlights, compliance of more than 82 per cent was achieved. As of May 2006, "always-on" motorcycle front-lights were mandatory in a number of ESCAP member countries, including Armenia, Kazakhstan, Malaysia, Sri Lanka, Singapore, Thailand and the Republic of Korea. In Brunei Darussalam, it is practised but not mandatory.

32. To date, the use of child restraints is mandated almost exclusively in developed countries.[25] Yet, the importance of child restraints is being increasingly recognized throughout the ESCAP region. For example, Armenia introduced a child restraint requirement in 2006. Child restraints are also mandatory in Brunei Darussalam and the Republic of Korea. In India, the introduction of such a requirement by 2008 is being discussed. Even where child restraints are mandatory, compliance varies widely and depends on the example provided by parents. According to the presentation on reporting on national road safety in the Republic of Korea given at the ESCAP Expert Group Meeting on the Development of the Asian Highway Network, held in Bangkok from 8 to 10 May 2006, in the Republic of Korea, "when adults are buckled up, 87 per cent of children are buckled up, but when adults are not buckled up, only 24 per cent of children are buckled up".

33. In the majority of ESCAP member countries, at least some safety elements are included in the school curriculum, especially at the primary level, and in some cases, such as India and Sri Lanka, also at the secondary level. The importance of continuous road safety education programmes can hardly be overestimated. For example, it is reported that accident rates in some parts of Nepal were

[24] R.U.R. Sohadi, "The value of daytime running headlight initiatives on motorcycle crashes in Malaysia", in: *Transport and Communications Bulletin for Asia and the Pacific*, No. 74, p. 17-31 (United Nations publication, Sales No. E.05.11.F.17).

[25] As a result, for example, four times as many children under five are killed on roads in Thailand as in Japan, which has a population twice the size and highly motorized.

reduced by as much as 75 per cent due to such programmes, despite a literacy rate of only 54 per cent. Driver training and testing is also being introduced and improved in China, India and elsewhere. India, for example, has established model driver training schools and created incentives for refresher training. Within the scheme, 43,000 heavy vehicle drivers were recently trained by local institutions and non-governmental organizations.

34. The prevalence of “drinking and driving” or driving while intoxicated from alcohol or drugs depends, inter alia, on social, cultural and religious factors. In some ESCAP member countries, alcohol has been a negligible cause of accidents; in others, it was involved in half of all road accidents. Above all, in many ESCAP member countries, driving while intoxicated is accompanied by weak enforcement. In fact, police in most ESCAP member countries have neither the necessary resources nor the equipment, such as breathalysers, for the effective enforcement of existing laws on driving while intoxicated. On the other hand, in Japan, enforcement measures halved alcohol-related traffic fatalities between 1994 and 2004, and significantly reduced “drinking and driving” in Armenia. In Singapore, drivers can be convicted, even if their blood alcohol content is below the legal limit.

35. Pedestrians are at particular risk, especially in South and South-East Asian countries, where pedestrian fatalities typically account for one quarter to more than half of all road fatalities. For example, in Bangladesh, 70 per cent of road accident victims are pedestrians. In part, this problem is due to the fact that scarce road space is often illegally “encroached” upon, especially by the poor, who face the highest risk.

36. Speeding has become a significant cause of accidents, especially in countries that have experienced rapid growth and improvements in their road infrastructure. For example, in Thailand, more than two thirds of all accidents occurred on straight road sections and were often due to speeding. In addition, most accidents occurred in Bangkok and other urban areas.

C. Safer roads

37. Particularly in developing countries, the condition of roads tends to be an area of major concern. For example, the condition of roads is a cause for road casualties in roughly 27 per cent of all accidents in Thailand, despite the country’s relatively well-developed road network. Securing the resources for the necessary safety-enhancing engineering interventions is a challenge, especially for poorer countries.

38. Black spot programmes have been put in place or are being tested in most ESCAP member countries, especially since the early 1990s. The size and impact of these programmes ranges widely, and some are constrained by limited resources. In China, a very large-scale black spot treatment programme has been undertaken, in which 210,000 black spots have been removed, resulting in an estimated reduction of 80,000 accidents and 5,000 deaths over one year. In Bangladesh, social returns,

in the form of accident savings, on investments to improve black spots along the Dhaka-Aricha highway between 1995-2002 range between 9 and 252 per cent for the first year.[26]

39. In addition, formal road safety audits are carried out before, during or after road construction in at least 11 ESCAP member countries. For example, in India, regular road safety audits and other interventions have led to relatively high safety standards for the 65,000 kilometres of roads under the National Highway Authority of India. This achievement has yet to be duplicated on the more than 3 million remaining kilometres of road for which the state governments are responsible. In Nepal, road safety audits were introduced as early as 1995. In Thailand, road safety audits are expected to be conducted from 2007 onward.

40. Many ESCAP member countries have tried to reduce accident risks with the provision of separate road space for pedestrians and cyclists in urban areas. However, many challenges remain, such as resource constraints, illegal encroachment and problems with land acquisition.[27] Interestingly, Malaysia has pioneered the creation of 150 kilometres of exclusive separate motorcycle lanes for inter-city traffic, in recognition of the fact that two thirds of all casualties involve motorcycles. The result has been a 39 per cent reduction in fatal accidents involving motorcyclists.

41. Engineering interventions that reduce the severity of accidents when they occur, known as "forgiving roads" programmes, are starting to be used in ESCAP member countries such as Armenia, Japan and Malaysia. For example, the installation of safety guardrails or the removal of roadside obstacles through large-scale programmes rather than on an ad hoc basis can cut costs.

D. Safer vehicles

42. Various levels of technical safety requirements exist in the ESCAP region, and de facto most imported vehicles follow international standards. In addition, many ESCAP member countries have made progress in terms of domestic standards. For example, India has implemented 76 of the 124 relevant Economic Commission for Europe regulations related to vehicle safety.

43. Periodic inspection of all commercial motorized vehicles is mandatory in all ESCAP countries. These inspections must be conducted every six months to after fifteen years. However, the major challenge is the enforcement of inspection and maintenance.

44. Overloading is a major road safety issue in many developing countries. According to some reports, until recently most accidents in China were caused by overloading, which triggered government measures, such as stricter regulations, enforcement and support programmes, and the

[26] Muniruzzuman Hoque and Ahmed (2005). "Performance evaluation of road safety measures: a case study of the Dhaka-Aricha highway in Bangladesh", in: *Transport and Communications Bulletin for Asia and the Pacific*, No. 74 (Special issue on road safety) (Bangkok, ESCAP, 2005), p. 33-56, ST/ESCAP/SER.E/74.

[27] Japan and other developed countries have also reduced accident risks through improvement of sidewalks, bicycle lanes, road lighting, etc.

creation of new weigh-stations. Together, these measures have resulted in a reduction in the occurrence of overloading to about 10 per cent.

E. Technology, safer systems and cooperation

45. Institutional and technical systems are key success factors for road safety programmes. Good qualitative and quantitative data is required for targeted policymaking and decisions regarding road safety interventions. In fact, a direct link between policy measures and data collection is needed in order to measure impacts and to decide on priorities. Yet, as indicated earlier, in many ESCAP developing countries, lack of and insufficient quality of data are serious constraints for decision-making. For example, the Asian Development Bank (ADB) and the Association of Southeast Asian Nations (ASEAN) estimate that "underreporting" in the ASEAN region was in the order of 70 per cent for road deaths and 25-fold for road accidents in 2003. In addition, it should be noted that providing public access to road safety data is very important in the decision-making process.

46. Various types of computerized and manual databases exist in ESCAP member countries. While only roughly half of them provide locational information, some countries have rather sophisticated data recording and analysis systems. For example, Armenia, Fiji and Nepal are using the GPS based microcomputer accident analysis package system, and Singapore and Japan are running systems that highly integrate data recording, impact and analysis functions. Initiatives in India to improve the national road accident reporting system include a pilot implementation of compatible road accident reporting systems in the southern states of India. Finally, it should also be noted that it is useful to complement police data with data from injury surveillance.

47. Coverage of emergency response assistance in ESCAP member countries ranges widely, from "only available in cities" to "comprehensive national coverage". Some developing countries have recently made special efforts to improve this situation. For example, India is working to establish "traffic aid centres" at intervals of 30 to 50 kilometres.

48. The use of new technologies promises major road safety benefits and provides interesting leapfrogging possibilities for poorer countries. China has recently established a dedicated laboratory on road safety, and it reports major advances in its research. Japan and the Republic of Korea have worked on advanced management systems based on information and communication technology. Intelligent roads and ubiquitous transport, which integrate transport and wireless communications, can help reduce the number of road accidents. In particular, risks related to the transport of dangerous goods can be reduced using GPS-based systems that employ radio-frequency identification for tracking purposes.

49. However, new technologies can be used innovatively without requiring high-tech capacities. For example, it is possible to make use of collaborative tools that are freely available on the World Wide Web. For analytic purposes, the location and nature of accidents can be easily mapped with

online systems[28] drawing on Geographic Information Systems (GIS), satellite or aerial photography.[29] More generally, mobile GIS has become an efficient method for making inventory management maps. Other interesting examples of technology applications include a photo accusation system, known as caparazzi, tested in the Republic of Korea during 2001 and 2002 and the Internet based ASEAN Road Safety Network (ASNet) linking academic communities (see www.asnet.org).

F. Safer Asian Highway

50. At the Expert Group Meeting on the Development of the Asian Highway Network: Regional Experiences and Lessons in Financing Highway Infrastructure and Improving Road Safety, held in Bangkok, from 8 to 10 May 2006, measures taken to improve road safety at the national level and along the Asian Highway were considered. Some of the measures reported that specifically related to the Asian Highway are outlined below.

1. Government actions

51. At the expert group meeting, seven countries[30] reported road safety actions specifically targeting the Asian Highway as well as national trunk roads. For example, in Bhutan, additional safety features are being implemented on segments of the Asian Highway network which are being widened, in a process called double-laning, to meet the Asian Highway standard by 2010. In fact, in 2005, the majority of road accidents in Bhutan occurred along the Asian Highway. This is largely due to traffic volumes exceeding 850 vehicles per day on certain segments with a design capacity of only 100 vehicles per day. In Japan, road safety measures were implemented along the Asian Highway, including road widening in the congested areas, maintenance, and the provision of traffic information. In Nepal, special efforts have been made to provide safety barriers along the Asian Highway routes, following the recommendations of a road safety audit, and leading to a "substantial reduction in fatalities". In Pakistan, the creation of a National Highways and Motorway Police, the National Highway Safety Ordinance of 2000, and the provision of adequate maintenance funds for highways have improved safety on the Asian Highway. In Thailand, a recent annual road safety budget covered a range of safety-enhancing engineering interventions and US$ 50 million has been dedicated to national highways alone. In Turkey, a strategic plan and policy for improving safety on the national highways and the Asian Highway foresees measures to reduce by 40 per cent the number of casualties that have occurred due to road faults (see www.kgm.gov.tr).

[28] Examples of such systems include Google Earth, PointAsia, Geoportail and others.

[29] An example is the Ohio State Highway Patrol in the United States, which has begun innovative fatal crash mapping through Google Earth satellite imaging (see www.statepatrol.ohio.gov/media/2006/06-097.htm).

[30] Bhutan, Bangladesh, India, Japan, Pakistan, Republic of Korea, Sri Lanka, Thailand and Turkey.

2. Financing road safety along the Asian Highway

52. In terms of financing road safety along the Asian Highway, it should be noted that there have been only a few direct grants and loans from international sources in connection with road safety. For example, Nepal was a recipient of grant support from the Department for International Development of the United Kingdom of Great Britain and Northern Ireland from 1994 to 2000. Bangladesh reported having received grants/loans from international sources. Turkey has yet to receive international financial resources for road safety, but it may apply for them within the framework of the European Union Participation Partnership. While India has not received separate dedicated road safety grants from international or bilateral organizations, studies on road safety audits and policies have made up part of the loan assistance for the development of the national highways which include the Asian Highway. Most funding for road safety from international sources is covered indirectly as part of road construction, rebuilding and maintenance projects.[31] Against this background, the establishment of a US$ 300 million road safety facility administered by development banks, as proposed by the Global Commission on Road Safety, may make a difference.

3. Asian Highway maps of traffic safety risks

53. The European Road Assessment Programme (EuroRAP), an initiative of automobile associations in Europe, regularly tracks the road safety performance of national trunk roads in European countries (see www.eurorap.org). The number of fatalities per billion vehicle-kilometres on each road segment (approximately 50 kilometres long) are shown in the form of colour-coded maps. EuroRAP also performs on-site inspection and safety ratings of the routes based on physical characteristics, in order to monitor the actual impact of making roads more forgiving. EuroRAP activities have been prominent at the highest political level in several European countries.[32]

54. In order to show the feasibility of the EuroRAP approach for the Asian Highway, the ESCAP secretariat produced similar color-coded maps for the Expert Group Meeting held in May 2006 showing the number of fatalities per billion vehicle-kilometres on segments of the Asian Highway.[33, 34] The data was drawn from the Asian Highway database, which includes sufficient data for 16 countries. Better and more comprehensive data and regular updates of sectional Asian Highway data would make it possible for the secretariat to regularly produce updated maps and to track

[31] See, for example, the current World Bank portfolio of road projects at http://www.worldbank.org/projects.

[32] For example, French President Jacques Chirac supported the publication of the EuroRAP risk rate map for France and declared that "we owe the French people the truth about where accidents occur" (see http://217.174.251.13/library/pdfs/conferences/151003.pdf).

[33] The Asian Highway database includes data on the number of accidents as well as the number of fatalities for each segment. It should also be noted that the length of segments specified in the Asian Highway Agreement is not that different, on average, from the average length of route segments in EuroRAP (roughly 50 kilometres).

[34] The performance maps are directly comparable with the maps produced by EuroRAP, since the same scale was used: Low (0-15), Low-Medium (15-61.6), Medium (61.6-106) Medium-High (106-180), High (>180), in term of fatalities per billion vehicle-kilometres.

progress. For example, it would allow tracking risk rates within and across countries for similar types of roads with similar levels of traffic.

G. Safety benefits of modal shifts

55. Significant benefits in terms of improving road safety may also be achieved by encouraging a modal shift from road to rail. For example, according to Swiss estimates, for an average tonne kilometre moved, the average cost of accidents is roughly six times higher for road freight than for to rail freight.[35] A non-governmental organization in the United Kingdom has estimated that one is nine times more likely to be killed travelling by private car and 2.5 times more likely by air, than travelling by railway.[36] These ratios depend on the country-specific situation and are likely to be higher in developing countries than in developed countries. This is increasingly being recognized by Governments in the region which are strengthening public passenger transport and increasing the share of railway freight.

H. Multisectoral approach

56. In practice, each country will need to address a combination of all the intervention areas listed in sections A to G above, and priorities will change over time. The examples of Australia, Japan, the Republic of Korea, Singapore and Malaysia illustrate that long-term success in improving road safety relies on prioritizing interventions based on good monitoring of changing developments on the roads.

57. For example, in the Republic of Korea, a succession of targeted interventions following rapid motorization included programmes on black spots, improvement of hazardous locations, compulsory seat belt use, national road safety campaigns, speed cameras and a photo accusation system, has resulted in respective reductions in the number of road deaths (see figure 3).

58. Similarly, Japan has implemented a succession of five-year fundamental traffic safety programmes since 1971. The programmes included many interesting government initiatives, such as improvement of sidewalks, bicycle lanes, road lighting, along with child seat requirements, and severe punishment for drunk driving. Together these have led to an impressive road safety record.

59. Singapore's comprehensive road safety action plan, 2004-2008, covers 14 sectors. It includes a computerized traffic accident analysis system, black spot programmes, accident investigation, road safety audits, and road safety consultations. By 2005 the plan had achieved a low fatality rate of 2.3 people per 10,000 registered vehicles.

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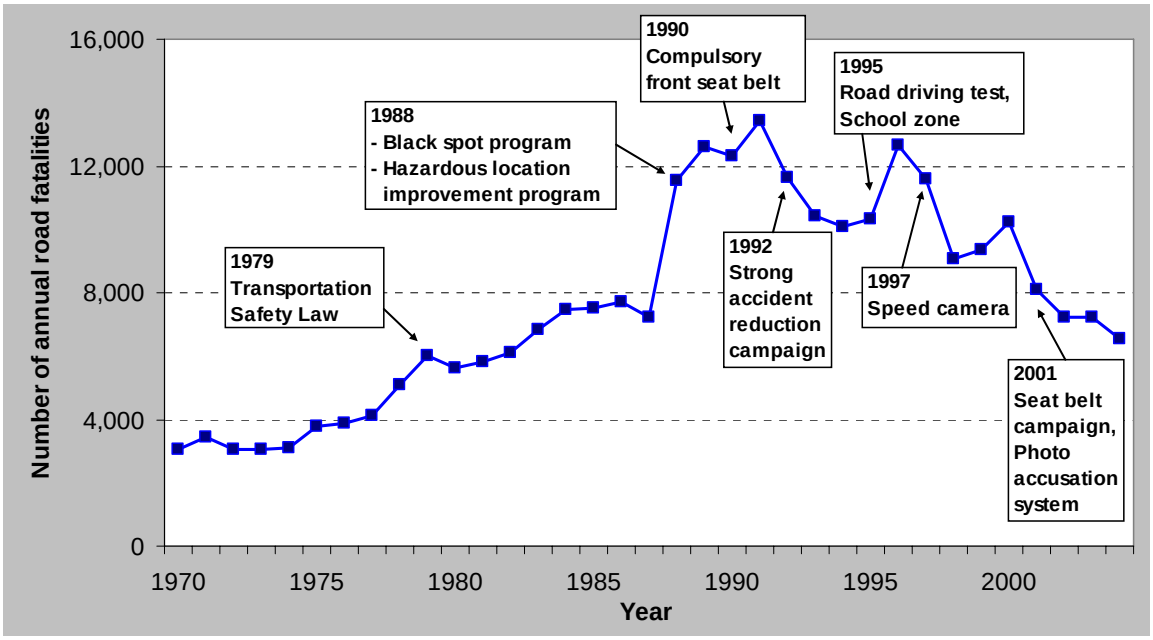
[35] M. Maibaich, C. Schreyer, M. Lebkuechner, S. Mauch, *Zukunftsgüterbahn* (Bern, 1998).

[36] Friends of the Earth, "Why travelling by rail is better for the environment" (fact sheet), 2002 (available at www.foe.co.uk).

Figure 3. Number of road fatalities and counter-measures in the Republic of Korea, 1970-2000



Source: Republic of Korea, Ministry of Construction and Transportation "Report about Korea national road safety", presentation given at the ESCAP Expert Group Meeting on the Development of the Asian Highway Network, held in Bangkok from 8 to 10 May 2006.

60. In Viet Nam, the number of people killed or injured in road accidents increased rapidly until 2002. Thereafter, despite a high rate of motorization, roughly 10 to 12 per cent per year, the number of road accidents and injuries has declined dramatically. This was due to a number of decisive and comprehensive measures taken by the Government of Viet Nam that were geared to mobilize a large number of citizens in road safety efforts.

III. INTERNATIONAL COOPERATION FOR IMPROVING ROAD SAFETY

61. International cooperation has proven instrumental in sharing experiences and resources and in supporting national activities in the area of road safety. Various types of cooperation exist at the global, regional and subregional levels.

A. Global cooperation

62. In response to General Assembly resolution 58/289 of 14 April 2004 on improving global road safety, WHO and the regional commissions have set up the United Nations Road Safety Collaboration (see www.who.int/roadsafety.en), which comprises 42 organizations, 11 of which are United Nations organizations. This coordinating group has met four times since October 2004, and its Asia-Pacific group is led by ESCAP. Governmental and non-governmental organizations are involved and represent sectoral expertise in health, transport, and safety. Most recently, the ESCAP secretariat organized the 4th United Nations road safety collaboration meeting (10-11 May 2006) and the global organizing committee for United Nations Road Safety Week 2007 (10 May 2006).

63. The Collaboration has initiated work on (a) the development of a series of manuals on good practices; (b) the creation of a web-based database on road safety legislation; (c) the completion and updating of a series of ECE resolutions on road traffic signs and signals; (d) the coordination of the first United Nations Global Road Safety Week (23-27 April 2007), targeted towards young road users; and (e) the establishment of the World Day of Remembrance for Road Traffic Victims (third Sunday in November of every year).

64. The Global Road Safety Partnership (GRSP), of which ESCAP is a founding member, was established in 1999 (see www.grsproadsafety.org). It is a global partnership between business, civil society and governmental organizations collaborating to improve road safety conditions in low and middle income countries, and it is now active in over 10 countries. Major car and tyre manufacturers, aid agencies and non-governmental organizations are among its members. The International Federation of Red Cross and Red Crescent Societies hosts the GRSP secretariat. GRSP is one of four Business Partners for Development (BPD) programmes initiated by the World Bank.

65. The International Road Transport Union and other NGOs have been active on the global level through a number of activities to improve road safety. For example, it has developed materials and carried out programmes, including a bus and coach safety programme, and developed a road safety charter which is open for signature by private sector entities (see www.iru.org).

B. Regional cooperation

66. In addition, a regional approach to improving road safety in Asia and the Pacific is promising because (a) most of the anticipated increase in the global number of road deaths is expected to occur in Asia; (b) there are region-specific conditions, such as high rates of death among two- and three-wheelers in Asia, that warrant special consideration; (c) high-level international mandates call on ESCAP and other regional commissions to take the lead in regional cooperation; and (d) there is potential for international synergies and leverage from regional cooperation. There is a clear need for more support to be extended to developing member States in this area.

1. Asian Highway and ESCAP activities

67. The Intergovernmental Agreement on the Asian Highway Network[37] entered into force in 2005. Connecting 32 countries, the Agreement includes a provision that reads: “While developing the Asian Highway network, parties shall give full consideration to issues of road safety”. Thus, road safety is one of the areas under the mandate of the Working Group on the Asian Highway. Most recently, the ESCAP secretariat organized an Expert Group Meeting on the Development of the Asian Highway Network: Regional Experiences and Lessons in Financing Highway Infrastructure and Improving Road Safety (8-10 May 2006) in which 55 experts from 29 ESCAP member States

[37] See Commission resolution 60/4 of 28 April 2004.

participated. In the meeting, the secretariat presented preliminary maps of the Asian Highway that indicated road accident risks for each of its sections.

68. ESCAP has worked on road safety issues since 1992. Activities included regional studies and reviews, development of the Asia-Pacific Road Safety Database (APRAD), expert group meetings, workshops and publications, including most recently a special issue of the *ESCAP Transport and Communications Bulletin*[38] on road safety, as well as a technical cooperation project on road accident reporting, monitoring, planning and database development. The Seoul Declaration on Infrastructure Development in Asia and the Pacific of 2001 and the attached Regional Action Programme Phase II (2002-2006) noted that "economic losses caused by road accidents are more than double the total development assistance to the ESCAP region from all sources".

69. Through inter-agency collaboration, the ESCAP secretariat has supported raising awareness and changing attitudes, analytical work, sharing best practices, monitoring of change, expert group meetings and workshops. ESCAP has worked with a wide range of partners including ADB, GRSP, IRU, the International Road Federation (IRF), the World Road Association (PIARC) and others. In 2004, ESCAP created the Asia-Pacific Network of Transport and Logistics Education and Research (ANTLER), a network of academic institutions that may also cover road safety issues in the future.

70. The organization of United Nations Road Safety Week from 23 to 27 April 2007 has been mandated by the General Assembly in its resolution 60/5 of 26 October 2005 on improving global road safety. An ESCAP contribution to Road Safety Week will be organized in Bangkok, in conjunction with possible national events in the ESCAP member countries. In fact, most ESCAP members already have an established road safety day, week or month.

2. Regional road safety declarations, goals and targets

71. Analogous to the useful role of quantitative road safety targets at the national level, regional declarations, goals and targets have the potential to raise road safety awareness, created political commitment and leverage required human and financial resources.

72. The ESCAP secretariat recently explored the possibility of ESCAP members agreeing on goals and targets that might be included in or referred to in an ESCAP ministerial declaration. Initially, participants in the Expert Group Meeting on the Development of the Asian Highway Network: Regional Experiences and Lessons in Financing Highway Infrastructure and Improving Road Safety (8-10 May 2006) stressed the need for road safety commitment at the highest political level. They expressed support for the proposal of an ESCAP ministerial declaration on road safety, which could include specific goals and measurable targets, similar to the approach used for

[38] *Transport and Communications Bulletin for Asia and the Pacific*, No. 74 (United Nations publication, Sales No. E.05.II.F.17).

monitoring the Millennium Development Goals. Annex II contains a revised version of the draft regional goals, targets and indicators that were discussed at the meeting.[39]

73. Regional goals and targets have been used outside the ESCAP region. For example, the meeting of the African ministers responsible for transport on the Millennium Development Goals, which was held in Addis Ababa from 4 to 6 April 2005, adopted a ministerial declaration with multiple transport targets, including a road safety target expressed as follows, "rate of accident fatalities arising from road and other means of transport reduced by half by 2015" (see www.africa-union.org/infrastructure/transport/).

74. Similarly, the European Road Safety Action Programme of the European Union emphasizes the need for road safety targets. The European Union communication on halving the number of road accident victims in the European Union by 2010: a shared responsibility was announced in the white paper on European transport policy in 2001. Essentially, the programme sets out specific actions and reaffirms the overall objective of halving the number of road accident victims by 2010, which is equivalent to saving 20,000 lives.[40] To ensure that responsibilities are shared, it aims to encourage road users to improve their behaviour, to make vehicles safer, and to improve road infrastructure. It provides for the establishment of a European road safety observatory, and it proposes that all the parties concerned, whether public or private, should subscribe to a European Road Safety charter. The communication emphasizes that "it is widely accepted that targeted road safety programmes are more beneficial in terms of effectiveness of action, rational use of public resources and reducing the number of people killed and injured than non-targeted programmes".

C. Subregional cooperation

75. WHO, through its four subregional offices that cover ESCAP member countries, has focused on injury surveillance as well as road user behaviour issues related to motorcycles, helmets, seat belts, alcohol and speeding.

76. The ASEAN Regional Road Safety Strategy and Action Plan (2005-2010), an ASEAN project supported by ADB, appears to be the most comprehensive multi-country road safety programme in the ESCAP region. The project included an ASEAN road safety programme, together with the Phnom Penh Ministerial Declaration on ASEAN Road Safety, which was adopted on 23 November 2004 by ministers from all 10 ASEAN countries. The declaration includes a regional action plan as well as national action plans and targets for the period 2005 to 2010.

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[39] Written comments on goals and targets were received from experts from Bhutan, Armenia, the Democratic People's Republic of Korea, Indonesia, Japan, Nepal, Sri Lanka, Uzbekistan, Viet Nam, WHO and GTZ. These were considered when drafting the revised version.

[40] Only the European Commission and the European Parliament have so far endorsed this objective; the Council has not taken a position.

77. Within the ASEAN project, training activities and stakeholder consultations have already been held, analytical reports prepared, and the ASNet online platform for collaboration has been created. The summary report of the project, entitled Arrive Alive, indicated that, currently in ASEAN countries, 75,000 people die and over 4.7 million are disabled or injured every year, costing the region some US$ 15 billion or 2.2% of GDP. Target reductions in terms of the number of road deaths and injuries were agreed during the preparation of national action plans. Potential casualty savings constitute around 12 per cent of projected total deaths and injuries in the ASEAN region, cumulatively equivalent to some US$ 10.6 billion for 2005 to 2015. The next phase of the project will focus on strengthening institutional capacities.

78. The ESCAP expert group meeting on road safety from 8 to 10 May 2006 noted the effectiveness of the ADB-ASEAN Road Safety Programme and considered that such programmes could be beneficial for other ESCAP subregions, including those covered by the South Asian Association for Regional Cooperation (SAARC), the Shanghai Cooperation Organization (SCO), the Economic Cooperation Organization (ECO) and others.

D. Conclusion

79. International collaboration and action at the global, regional, subregional and national levels can improve road safety. Apart from the possibility of exchanging experiences in the form of good practices, and the sharing of resources and tools, it can provide endorsement at the highest political level, which has the potential to shift road safety to the top of the national policy agenda. The importance of the latter has been highlighted by the recent ministerial declarations on road safety adopted by ASEAN and the African Union in 2004 and 2005, respectively. These initiatives and others show that measurable targets at the regional level can improve road safety efforts in a similar way as national road safety programmes that used measurable national targets.

IV. ISSUES FOR CONSIDERATION

80. While important progress has been made in improving road safety, the overall number of road traffic fatalities and injuries continues to increase rapidly. Hence, there is a need to step up efforts at the local, national and regional levels in order to change the “tide” of road accidents throughout the ESCAP region. Every single road death and serious injury leads to human suffering and comes at a sizeable economic cost, while most road accidents are, in principle, preventable.

A. Local and national level

81. Governments are invited to consider the issues covered in the present document, in particular:

(a) To adopt or strengthen existing national policies and action plans including the use of measurable national road safety targets;

(b) To regularly perform road safety policy analysis and improve road safety data collection and reporting systems, in order to respond to changing priorities;

(c) To use a multisectoral approach involving all relevant stakeholders and ministries, including transport and health ministries, local governments, and the police and, in accordance with General Assembly resolution 60/5, to follow the recommendations[41] contained in the WHO global report on road safety 2004;[42]

(d) To make innovative use of technologies to improve road safety, including information technology services and collaborative online tools, including those making use of satellite imagery, aerial photography and/or GIS;

(e) To designate a lead agency or establish a national organizing committee for the events during United Nations Road Safety Week from 23 to 27 April 2007 and to consider recognizing the third Sunday in November every year as the World Day of Remembrance for Road Traffic Victims, in accordance with General Assembly resolution 60/5;

(f) To consider in national transport policies the significant traffic safety benefits of a modal shift from road to railway transport, particularly in areas of high population density.

B. Subregional level

82. At the subregional level, Governments are invited to consider introducing joint road safety programmes in areas covered by SAARC, SCO, ECO and in the ESCAP subregions, similar to the ADB-funded ASEAN Road Safety Programme. These programmes might be co-funded by bilateral and multilateral donors. Governments may also consider requesting priority funding for such subregional activities from the planned road safety facility to be administered by the World Bank.

C. Regional level

83. In view of the importance of international endorsement at the highest political level, Governments are invited to follow the good experiences that other regions have had with ministerial declarations and regional programmes on road safety. Examples include ASEAN and the African Union. Governments may also consider ESCAP road safety goals and targets for 2007-2015 as a means of developing more targeted activities in the region. Annex II may form the basis for further consultations on this issue between ESCAP members and associate members.

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[41] These recommendations included to: (i) designate or create lead agency; (ii) assess situation; (iii) devise strategies and a plan of actions; (iv) provide adequate finance; (v) implement evidence-based interventions; (vi) engage in international cooperation.

[42] M. Peden, et al (eds), *The World Report on Road Traffic Injury Prevention* (Geneva, WHO, 2004).

84. Governments are invited to provide the secretariat with further guidance on the outputs and activities to include in a new five-year regional action programme (2007-2011), suggested elements of which are listed below.

Immediate objective: Better awareness and understanding of road safety issues and potential interventions, and improved international collaboration in Asia and the Pacific.

Outputs

1. Meetings to discuss and agree regional road safety goals, targets and indicators as a follow-up to the Ministerial Declaration on Improving Road Safety in Asia and the Pacific.
2. Coordination of activities of the United Nations road safety collaboration in the ESCAP region, in line with the relevant General Assembly resolutions.
3. Collaborative website and meetings for sharing of road safety resources, good practices, data and accident risk maps of the Asian Highway.

Indicators of achievement

1. Adoption of regional goals, targets and indicators, being applied by intra-territorial members.
2. Regional member countries providing inputs and feedback on materials on the website, including the accident risk maps.
3. User feedback.

Annex I

Key road safety related indicators for selected ESCAP member countries

	Year	Accidents (police-reported)	Deaths (police-reported)	Injuries (police-reported)	Pedestrian fatalities	Motor-cyclist deaths	Child fatalities (<5 years)	Fatalities per 10 000 vehicles	Pedestrian deaths [% of total]	Motorcyclist deaths [% of total]	Two and three-wheelers [% of all vehicles]
Armenia	2005	1 309	304	1 771	43	0	1	10.1	14%	n.a.	1%
Australia	2004		1 868								
Azerbaijan	2004		811								
Bangladesh	2004	3 566	3 150	3 026	1 609	n.a.	86	103	51%	n.a.	67%
Bhutan	2005	1 038	23	247	n.a.	n.a.	n.a.	7.7	n.a.	n.a.	24%
Brunei Darussalam	2005	2 771	38	528				43			3%
Cambodia	2005	3 957	904	7 018		906	5	16		89%	75%
China	2005	450 000	98 738	470 000							
Georgia	2004		637								
India	2003	406 726	85 998	435 122	8 799	13 570	1 128	12.8	10%	16%	71%
Indonesia	2005	20 623	11 610	22 217				5			75%
Japan	2004	952 191	8 492	72 777	2 250	1 313	72	1.0	26%	15%	15%
Kazakhstan	2005	14 517	3 374	17 422	1 084	n.a.	251	18.7	32%	n.a.	3%
Lao People's Democratic Republic	2003	5 177	426	6 699				17			80%
Malaysia	2005	328 264	6 200	47 012				4			48%
Myanmar	2003	5 375	1 308	9 299				27			68%
Nepal	2001	32 000	1 987	4 390	993	773	189	42.0	50%	39%	65%
New Zealand	2002		404								
Philippines	2003		995	6 793							38%
Republic of Korea	2004	220 755	6 563	346 987	2 543	618	108	3.6			10%
Russian Federation	2004		34 506								
Singapore	2005	6 705	173	87	41	95	3	0.6	24%	55%	19%
Sri Lanka	2005	43 171	2 306	23 165	747	406	39	9.1	32%	18%	60%
Thailand	2002	91 623	13 116	69 313	787		262	0.6	6%		71%
Turkey	2005	621 183	4 525	154 094	679	117	117	4.1	15%	3%	13%
Viet Nam	2005	14 000	11 000	11 760				7		63%	68%

Data sources: Transport and Tourism Division database, Asia-Pacific Road Accident database, Asian Development Bank and the Association of Southeast Asian Nations.

Annex II

Draft road safety goals of Asia and the Pacific, 2007-2015

Goals and targets	Indicators for monitoring achievements
Overall Objective: Saving of lives and preventing injuries on roads	
(a) Reduce the fatality rates by twenty per cent from 2007 to 2015 (or reduce it to less than 10 per 10,000 motor vehicles by 2015).	1) Number of road fatalities (and fatality rates per 10,000 motor vehicles, per motor vehicle-km and per passenger-km) 2) Number of anticipated road fatalities (baseline) 3) Number of road accidents 4) “Fleet safety records” of public or private organizations (e.g., deaths per 100,000 km)
(b) Reduce the rates of serious road injuries by twenty per cent from 2007 to 2015.	5) Number of anticipated serious injuries on roads (baseline) 6) Number of serious road injuries (and injury rate per 10,000 motor vehicles, and per motor vehicle-km)
Goal 1: Make road safety a policy priority	
(a) Create a road safety policy/strategy, designate a lead agency and implement a plan of action, by 2010.	7) Documents of road safety policy, strategy, and plan of action etc. Information on their actual implementation. 8) Name of designated lead agency. Description of reponsibilities of local, regional and national government organizations. 9) National road safety reports or impact evaluation reports of government programmes
(b) Allocate sufficient financial and human resources to improving road safety	10) Amount of public financial and human resources allocated to road safety 11) Amount of private sector contributions, as well as special funds, from donors, or relevant financial institutions. 12) Road safety programs and activities conducted. At least one major national road safety campaign
Goal 2: Make roads safer for vulnerable road users: children, pedestrians and motorcyclists	
(a) Reduce by one third the pedestrian death rate in road accidents (or reduce it to less than 1 per 10,000 motor vehicles).	13) Pedestrian deaths per capita and per 10,000 motor vehicles
(b) Increase the number of safe crossings for pedestrians (e.g., with subway, overhead crossings or traffic signals).	14) Number of safe crossings, or information on programmes for constructing or improving crossings.
(c) Make the wearing of helmets the norm and ensure minimum helmet quality, in order to reduce the motorcyclist death rate by one third (or reduce it to below the average motorcyclist death rate of the ESCAP region).	15) Motorcyclist deaths and motorcyclist death rate 16) Law or administrative rule (Yes/No). (Survey) information on helmet use (percentage) and minimum helmet quality standards.
(d) Ensure minimum child safety measures, in order to reduce the child death rate by one third (or reduce it to less than 0.01 per 10,000 motor vehicles).	17) Death rate of children less than 5 years in road accidents. 18) (Survey) information on the compliance with child safety norms (e.g., child restraints) (percentage). 19) Existing measures for child safety in cars and on motorcycles (qualitative indicator).
(e) Equip all school children with basic road safety knowledge	20) Road safety education part of the school curriculum (Yes/No) 21) Existing education programs on road safety (qualitative indicator)
Goal 3: Make roads safer and reduce the severity of accidents ("forgiving roads")	
(a) Integrate road safety audits in all stages of road development, carry out necessary improvement works and improve hazardous locations.	22) Number of road safety audits (or kilometres audited), and number of black spots where measures have already been taken. 23) Road Safety Audit is mandatory for new road construction and major improvements (Yes/No). 24) Programmes to make roads “forgiving” by removing or cushioning roadside obstacles
(b) Increase separate/secure road space for pedestrians and cyclists	25) National or local programmes. Existing length of pedestrian and bicycle tracks in kilometres (along highways and city roads).
Goal 4: Make road vehicles safer	
(a) Make regular inspection of road vehicles mandatory and ensure enforcement of inspection (starting in urban areas).	26) Law or administrative rule (document). Information on vehicle inspection facilities and organizations (qualitative).
(b) Ensure safety requirements for new vehicles to be in line with international standards	27) Documents specifying laws and regulations and implementation.
Goal 5: Improve road safety systems, management and enforcement	
(a) Implement a national (computerized) database that provides information on the location of accidents.	28) Yes/No indicator. If yes, which accident database system and responsible organizations (qualitative indicator). 29) Country coverage of the regional APRAD database
(b) Significantly increase “compliance”, e.g., with mandatory helmet, seat belt wearing and speed limits.	30) Information on rules and “compliance” on helmet wearing levels (percentage from surveys). 31) Information on rules and “compliance” on seat-belt wearing levels (percentage from surveys). 32) Information on rules and "compliance" related to "drinking and driving" (information from surveys not prosecutions)
(c) Allow alcohol tests for prosecution (either breathalyzer and/or behavioural tests)	33) Yes/No. If yes, description of existing rules, types of tests and alcohol limits used and allowed for prosecution.
(d) Make it the norm to keep motorbike front-lights on at all times.	34) Law or administrative rule (document). Description of existing practises (from survey) or technical measures.
(e) Increase coverage of emergency assistance systems for road victims, to cover at least all urban areas and trunk roads.	35) Kilometres of road (by type) on which emergency services are provided. 36) Average response time 37) Number of emergency service centres per length of highways (except city roads).
Goal 6: Improve cooperation and foster partnerships	
(a) Encourage and recognize private-sector sponsored initaitives	38) Number of major private sector initiitives. (Financial) volume of commitments. 39) Number of major public-private partnerships in the area of road safety. (Financial) volume.
(b) Create new and deepen existing partnerships with NGOs.	40) Number of major private sector initiitives. (Financial) volume of commitments.
Goal 7: Develop the Asian Highway as a model of road safety	
(a) Reduce the number of fatalities on the Asian Highway per number of accidents.	41) Total number road fatalities and accidents on the Asian Highway in each country in each year.
(b) Reduce the fatal collision rate on all Asian Highway segments to below 100 per billion vehicle-km (EuroRAP “medium”)	42) Fatal collision rate per billion vehicle-kilometres on the Asian Highway each year.
(c) Increase resource allocation for road safety-related measures along the Asian Highway.	43) (Financial and human) resources allocated for safety-related works for Asian Highway segments. 44) Amount of safety-related grants for Asian Highway segments from international sources.
(d) Improve Asian Highway road segment to be forgiving to road users if a crash occurs. Demonstrate best practise.	45) Develop a road safety rating program based on onsite road inspection (EuroRAP star rating)