



Draft Regional Plan for Asia and the Pacific: the Second Decade of Action for Road Safety

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Regional Plan for Asia and the Pacific: the Second Decade of Action for Road Safety

Executive Summary

At its 4th session, the Ministerial Conference on Transport held in Bangkok and online in December 2021 adopted the Regional Action Programme for Sustainable Transport Development in Asia and the Pacific 2022-2026 which identified road safety as one of the priority areas for the region. The Regional Action Programme enlists the list of related road safety activities to be conducted including the development of a regional plan of action for the Second Decade of Action for Road Safety 2021–2030 in line with the related Global Plan.

In response to the resolution 78/3 Implementation of the Ministerial Declaration on Sustainable Transport Development in Asia and the Pacific which requested the Executive Secretary to support members and associate members of the Economic and Social Commission for Asia and the Pacific in the implementation of the Regional Action Programme for Sustainable Transport Development in Asia and the Pacific (2022–2026) and in line with and supplementing the Global Plan for the Decade of Action for Road Safety 2021-2030ⁱ, this draft Regional Road Safety Plan is prepared to serve as a guiding document to support the implementation of the objectives to reduce road traffic deaths and injuries by at least 50 per cent from 2021 to 2030 and the continued action through 2030 to achieve all the road safety-related targets of the Sustainable Development Goals, including target 3.6.

This Regional Plan recognizes that the Asia-Pacific Region is unique and diverse in terms of culture, climate, geography, and road safety circumstances, and is designed to accommodate this extraordinary uniqueness and diversity. The Plan is based on increasing the adoption of Safe System principles and sets the target of a 50% reduction in road crash deaths and injuries in the Decade.

In the Asia-Pacific, road safety represents an ongoing crisis of deaths, disabilities, injuries, suffering, grief, and economic losses (averaging 4.7% of GDP each year for UNESCAP Low and Middle-Income Countries) with these costs also retarding the long-term economic growth of countries. The Plan recommends actions across seven critical areas, largely based on the Global Plan, with two additions considered specifically relevant to the Region. The five arenas in line with the Global Plan are: 1) modal shift, land use planning, and reduced road use exposure, 2) safe road infrastructure, 3) vehicle safety, 4) safe road use, and 5) post-crash care. Additionally, speed management provides powerful cost-effective opportunities for saving crash deaths and injuries in the Asia-Pacific as well as improving outcomes on other vital global agendas (air pollution- a particular challenge in many Asian cities, climate change, active transport, and equity). Second, improvements in road safety management are urgently needed in the Asia-Pacific, especially in terms of stronger government commitments to funding road safety, and delivering rigorously evidence-based interventions rather than common-sense approaches. Within each arena of action, the plan calls for the adoption of only rigorously evidence-based interventions. The recommendations provided in the Regional Plan are to be read in conjunction with the recommendation included in the Global Planⁱ.

The Region must advance from ineffective common-sense-based interventions. While a significant investment may be required from the Government as the scale of the investment needed may be beyond the resources of donors, development banks, and road safety funds, the large economic costs of crash deaths and injuries in the Asia-Pacific region make sound evidence-based and data-driven interventions excellent economic investments delivering cost savings that well exceed the investment required. Many such interventions are recommended in the Plan, which anticipates that countries will select from these recommended actions, based on the evidence-based and data-driven decision, those most relevant and suitable to the country's circumstances, in creating or improving national road safety plans for the Decade.

Governments and organizations concerned with road safety are urged to acknowledge the huge economic and human costs of the road safety crisis, recognize the synergies between road safety interventions (especially speed management and modal shift) and other global agenda, to adopt this plan to guide the ongoing development, implementation and evaluation of road safety activities in the Asia-Pacific Region.

Road safety can be greatly improved in the Region through increased commitment to road safety by all stakeholders, especially governments, better expert management and leadership of road safety delivery, and increased use of safe system principles to guide actions to more sustainable delivery of safety across the many areas of the road system and increased funding by Governments, donors, and the private sector for evidence-based actions to improve road safety.

Road Safety in the Asia-Pacific Region

The deaths, injuries, grief, suffering, substantial economic costs, and retarded long-term economic growth caused by road crashes in the Asia-Pacific Region are more urgent than ever before. In the Region, and globally, High-Income Countries improved their road safety performance significantly over the first decade, the performance of the Middle-Income Countries was mixed but mostly weaker, and road crash deaths in Low-Income Countries increased significantly over the decade. The cost of crash deaths and injuries averages 4.7% of Gross Domestic Product each year in the Low and Middle Income [LMICs] ESCAP countries.ⁱⁱ Overall, ESCAP analyses showed that crash deaths rose in the region early in the last decade, but deaths reduced in the region between 2016 and 2019.

A Unique Region

The Asia-Pacific Region is a diverse region, from permafrost to tropical islands to monsoon to hot desert and cold high-altitude deserts; from the highest mountains to the lowest to sea level countries threatened by even a small rise in ocean level; from the most populous countries to some of the smallest; from high to middle to low income; from tiny land masses to the largest; from extraordinary chaotic streets with every form of transport mixing at once to well-arranged tightly-managed streets; containing all political systems, as well as the most wonderful diversity of cultures, religions, and peoples. The regional plan (and the development of national plans) appreciates the distinctive features and extraordinary diversity of the region, as must the road safety leaders being guided by this plan.

Road crashes affect types of road users differently in the Region. Vulnerable road users—pedestrians, cyclists, and motorized two- and three-wheelers – represent more than half of all ESCAP region fatalities. ESCAP analysis of the 2016 data published in the Global Status Report on Road Safety 2018 indicated that motorized two- and three-wheelers comprise 39.2 per cent of all road crashes. In South-East Asia, most fatalities are among riders of motorized two and three-wheelers, which represented 61.7 per cent of all road traffic fatalities. In East and North-East Asia and North and Central Asia subregions pedestrians comprise 37.0 and 29.8 per cent of all road fatalities, respectively. Inadequate facilities and high-risk locations for vulnerable road users exist due to improper land use planning at many locations.

ESCAP analysis of the data provided by the World Health Organization for 2019 indicated that 96.60 per cent of road fatalities in the Region occur in the Middle-income countries where 93.73 per cent population of the Region lives. This indicates a need for emphasis on the Middle-income countries towards improving road safety.

Despite the distinct features of the region, there is still much in common with the rest of the world when it comes to road safety. Most critically, commonalities include: (1) the universal application of the laws of physics which make speed the fundamental determiner of both crash risk and severity; (2) the inevitability of human error; and (3) the limitations of the human body to survive forceful impacts. Thus, it is critical that even while acknowledging (and indeed, celebrating and preserving) the diversity of the region, we can selectively and judiciously adapt and apply much of the evidence from other countries to know what works for road safety. The art is in determining which is relevant and applicable. As a guide, for example, reducing speed will create road safety benefits everywhere because of the basic laws of physics. However, if behaviour change is part of the solution then the level of penalty required, the perceived risk of enforcement required, and the messages required for best effectiveness may all vary across countries and cultures.

The basis of the Plan

This Plan for the Asia-Pacific Region is based on the Global Plan for the Second Decade and UN General Assembly Resolution 74/299, and the well-established evidence base for what works in road safety and what does not. In line with the Global Plan, this Plan is based on a best-practice Safe System, which guides interventions to achieve the aim of eliminating road crash deaths and injuries.

Safe System

Safe System recognizes that humans, speeds, vehicles, and road infrastructure must interact in a way that ensures safety. A full Safe System, thereforeⁱⁱⁱ: (1) Accepts that human error is inevitable and accommodates errors; (2) Incorporates speeds, roads, and vehicles that limit crash forces to levels that are survivable for the human body; (3) Motivates those who design and maintain the roads, manufacture vehicles, and administer safety programmes to accept and address shared responsibility for safety (see next section); and (4) Adheres to the underlying premises that the transport system should not compromise safety for the sake of other factors such as cost or faster transport times.

Shared Responsibility under the Safe System approach

Responsibility for road safety is shared among those who design and maintain the roads, manufacture vehicles and administer safety programmes, including the private sector.ⁱⁱⁱ These stakeholders must accept and address responsibility for safety, so that when a crash occurs, remedies are found throughout the system, rather than blaming the driver or other road users. Nonetheless, the safety of the road system is imperfect as yet and thus while it is moving towards a Safe System, many lives can be saved through improving road user

behaviour, even though ultimately safety is delivered more sustainably and completely through improving the other elements of the road system to protect people from inevitable errors.

Lessons from the First Decade

The Plan is also informed by critical lessons from the first decade, all relevant to the Asia-Pacific:

- Road safety is a priority issue and political will and accountability for road safety need to be strengthened.
- Funding is vital for road safety, and, despite clear evidence of the economic value of road safety investments, is lacking
- There is deeply inadequate adoption of the expansive evidence base for what works in road safety and what does not. Low-cost, ineffective options are too often chosen instead of investment in effective actions
- Speed management is critical
- The private sector could help much more with road safety, but often requires government regulation to improve contribution.

Synergies with related global issues

The last decade has shed clear light on the many synergies between road safety and other critical global agenda (climate change, health effects of air pollution, fuel and transport efficiency, equity of access, and the need for active transport for health). Bringing partner agencies and supporting NGOs across these agendas into partnerships with road safety strengthens the business case for effective actions, and gives a stronger voice to the need to resource road safety and the multiple other agenda, with efficiencies from co-benefits.

Recent analyses have also demonstrated the vital role of lower speeds, in particular, in improving delivering of all these agendas as well as most powerfully improving road safety.^{iv} Thus, appreciation of these synergies is vital in speed management in particular. The multiple other agenda which can be improved through better speed management is relevant in the Asia-Pacific Region, particularly with many large cities of the region facing deep health and life quality challenges with air pollution. The Asia-Pacific Region contains the worst cities on earth for air pollution and, with air pollution rating weighted for population, the region contains the most air polluted countries: the Region contains the worst five countries and seven of the ten worst countries for air pollution.^v

For example, lower speeds reduce the number of stops or decelerate then accelerate up to higher speeds, then slow down, etc. which happens continuously in most city traffic. In this circumstance, lower maximum speeds reduce both noise and air pollution as well as greenhouse gas emissions. Lower speeds also allow for safer active transport and discourage personal motorized vehicle use. Lower urban speeds can also most valuably be combined with incentives for, and increased space for, public transit such as bus rapid transit or non-road mass transit, increasing equity of access (see the Arena: Reduced Road Use Exposure) further supporting reduced pollution and climate change gas emissions.

It is vital that road safety is integrated into the broader global landscape and that road safety stakeholders appreciate the importance of the agenda noted above as well as gender equity issues, and seek ways to accommodate them into road safety interventions, finding critical points of synergy which will allow for the delivery of multiple agenda at once. This approach is more likely to deliver road safety support than compete with the other agenda.

Additionally,, COVID-19 has devastated much of the world with millions of deaths and has had huge impacts on transport globally, including road transport and road safety in the Asia-Pacific region, from which we have the opportunity to evolve^{vi} Impacts and lessons from COVID should be considered in planning for road safety everywhere including the Asia-Pacific region.

The Asia-Pacific Regional Plan

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for this vital Second Decade of Action on Road Safety.

The first draft of the regional plan was presented in the Regional Capacity-Building Workshop on the development of a regional plan of action for the Second Decade of Action for Road Safety (2021-2030) on 23 March 2022 with an objective to discuss and receive feedback from participants on the draft regional plan of action. The ESCAP secretariat with the help of an international consultant further improved the draft regional plan based on the feedback received during and after the workshop.

This Asia-Pacific Region Road Safety Plan is to inform, guide, and inspire ESCAP member countries for the implementation of road safety actions with the aim of the region achieving target 3.6 of the Sustainable Development Goal of halving crash deaths and injuries in the decade. It is vital that ESCAP member countries are able to adapt and adopt the Second Global Plan and move towards a Safe System. This plan assists in these developments.

The diversity and distinctiveness of the Region are accommodated in the Plan in the following ways:

1. Focused recommendations with more elaborated guidance, selected based on their relevance in the Region are enlisted.
2. Multiple recommendations are offered for countries to select those which are most suited to their circumstances
3. Speed and road safety management are included as arenas of action as they represent vital opportunities for improving road safety in the Region
4. The Plan also recognizes challenges with crash data in many countries and the opportunities created by the Asia-Pacific Road Safety Observatory, the devastating impact of COVID-19 and yet the opportunities for positive change it generates, and the critical role of motorcycles in safety for many countries, and the urgent need for stronger funding of road safety in many countries.

Vision and Target for the Asia-Pacific Region

Vision: An Asia-Pacific Region increasingly free of the human suffering and economic burden of road crash deaths and injuries.

Target: To reduce road traffic deaths and injuries by at least 50 per cent from 2021 to 2030

Increases in deaths in the Region have been associated with increasing population and motorization, indicating that road safety can be managed with the management of motorization itself, and the reduction in crash deaths from 2016 to 2019 indicates that significant improvements can be achieved in the Asia-Pacific.

The arenas of road safety intervention (based on the Global Plan)

Arena 1: Safe Road Infrastructure

Safe road infrastructure (Roads and Roadsides) is particularly well placed as a mechanism for road safety delivery because: (1) the right design works provides road safety gains; (2) changes are relatively sustainable over many years; (3) it is largely under the control of governments. For a safe system, it is critical that the notion of a safe road moves away from the outdated definition of a road. With the acceptance that humans inevitably make mistakes, a safe road must be defined as one which protects all road user types from the consequences of mistakes of the users. This requires a steady shift from viewing safety infrastructure as guiding road users (with signs and lines) to the modern approach of protecting road users from their inevitable mistakes.

Safe road infrastructure, along with speed management, must most fundamentally address the different classes of road users present on the road: pedestrians (including those with disabilities), cyclists, motorcyclists, cars, and heavy vehicles. This can be achieved through three processes used in combination:

1. Build and operate the infrastructure to protect all road users for the speed which is determined for mobility
2. Set speed limits and manage speeds down to the levels which are safe for the road users
3. If necessary as a last choice, prevent access by those road users who are not fully protected by the first two processes. For example, cyclists are banned on many motorways in Australia.

This can be, and increasingly is being, achieved: crash barriers have been installed reducing crash severity; roundabouts have reduced serious crashes; median separations have prevented head-on crashes and helped pedestrians in urban environments, and infrastructure to slow speeds saves many lives and injuries. Many successful examples exist in the region.^{vii} The Asia-Pacific Region most urgently needs to improve the protective safety of road infrastructure which presents major opportunities for saving lives and disabilities, making it a sound economic investment. The Region faces many road-related challenges which vary from the flooding of the monsoons to the frozen snow-covered roads of the more northern countries of the region. However, for safety, the most challenging features (and yet highly amenable to safe infrastructure solutions) are the characteristic frenetic cities of many countries and the precipitous roads in many

mountainous countries, in the region which boasts seven of the world's ten most populated city agglomerations as well as all ten of the highest mountain peaks.

Safe Road infrastructure: Recommendations for the Asia-Pacific Region (Relates to Global Performance Targets 3 and 4)

The following recommendations are to be read in conjunction with the recommendation included in the Global Plan¹:

- In all decisions on road investment shift to modern evidence, and away from the myth that building faster roads, prioritizing motor traffic, and cutting safety investment is better for the economy. Over the last decade, the evidence for the huge economic costs of crashes and their retarding effects on national economies has grown and is compelling
- Capture a full economic picture for road investment decisions, including the increases in all costs of higher speed roads and prioritizing traffic (including more deaths and disabilities, more air pollution, greenhouse gasses, noise, dislocation, and inequity).
- Road infrastructure designs must consider the safety of vulnerable road users, especially pedestrians, bicyclists, and motorized two-wheelers in consideration of the local needs.
- Move steadily to a culture of increasingly protecting the road user through road features when mistakes are made, consistent with a safe system.
- Revise national road engineering and construction standards (such as GOSTs and SNiPs, and see related recommendation recommendations in the Safe Speed Arena) including the acceptance of the standards adopted by the Seventh Meeting of the Working Group on the Asian Highway entitled: "Annex II bis Asian Highway Design Standards for Road Safety" in 2017. In many countries of the Asia Pacific Region, current national standards for road design do not facilitate or may even prohibit the adoption of modern best practices in road safety infrastructure, and are in urgent need of extensive updating.
- Improve the classification systems and the policies which follow prioritize motorized traffic movement over saving lives by preventing the speeds and safe infrastructure required for pedestrians once a road is classified as a highway. Road classification per section based on real use (especially pedestrians and cyclists), rather than the original intention for the road, will facilitate strong safety opportunities.
- Improve pedestrian safety (including for those with disabilities), through the provision of footpaths, preventing shops and other activities from taking footpath space, and providing safe crossing facilities with speeds managed down to 30 kmph.
- The other vulnerable road users (cyclists and motorcycle riders) increasingly be protected through the provision of the well-designed separated cycle and motorcycle lanes if feasible, with projects subjected to a full road safety audit wherever applicable.
- MDBs to make uniformly strong commitments to road safety following the MDB Joint Statement on Road Safety of 2020, with crash costs included in economic appraisals of projects.
- Improve capacity for, use, and influence of, Road Assessments and road safety audits, setting higher safety star rating standards for road projects.

Arena 2: Vehicle Safety

Safe vehicles offer major opportunities for improving safety through three broad mechanisms. First, vehicles can protect their occupants via features such as safety belts, airbags, structural protection of survival space, and 'crumple zones' which reduce the sudden deceleration of the human body in a crash. Second, vehicle features can also protect those outside the vehicle in the event of a crash, including softer vehicle fronts for pedestrians, and under-run guards on trucks to protect other vehicle occupants in a crash. Finally, vehicles can prevent crashes or reduce the speeds of impact through active safety features such as electronic stability control and emergency brake assistance.

Many policy levers exist by which the safety of vehicles can be enhanced by road safety stakeholders (see recommendations below). Many advances in the last decade invite follow-up actions in the Asia-Pacific Region: the European Union introduced requirements for intelligent speed adaptation for new cars; autonomous emergency braking systems and electronic stability control have advanced; The development, growth, and increasing influence of Global NCAP (Global New Car Assessment Program) and the NCAPs has been valuable- and five of the ten NCAPs are in the Asia-Pacific Region and have delivered substantial influence; Some LICs have lower the acceptable age of used vehicles for import; CITA (the International Motor Vehicle Inspection Committee) developed and conducted Audits of Vehicle Inspection Schemes in LMICs, resulting in recommendations to improve these schemes.

Autonomous driving vehicles continue to be developed, and in the long term offer a dramatic opportunity to avoid the contributions of human error as drivers. However, these remain years from development, more years to infiltrate vehicle fleets in HICs, many more years before reaching the LMICs that need them most and will be hampered by major maintenance challenges with the sophisticated technology required as well as major road infrastructure improvements (such as line marking) required for these to be effective. Road safety cannot be left waiting on these processes, especially in the Asia-Pacific.

Only a small minority of countries in the Asia-Pacific have regulated requirements for electronic stability control and other safety features. Based on the large proportions of the vehicle fleets which are motorcycles and their large contributions to deaths in many Asia-Pacific

countries the general absence of requirements for anti-lock brakes for motorcycles (except in some HICs with small motorcycle fleets) is generating profound suffering and cost.

Safe Vehicles: Recommendations for the Asia-Pacific Region (Global Road Safety Performance Target 5)

The following recommendations are to be read in conjunction with the recommendation included in the Global Plan¹:

- Progressively regulate core safety features for manufacturer or import of vehicles, ultimately including:
 - Electronic Stability Control, including for trucks
 - Anti-lock braking system and daytime running lights for motorcycles
 - Standards on front and side impact to ensure that occupants are protected in a front and side-impact crash
 - Safety belts and safety belt anchorage for all seats to ensure that safety belts are fitted in vehicles when they are manufactured
 - ISOFIX child-restraint anchor points to secure the child-restraint systems attached directly to the frame of the vehicle to prevent misuse
 - Autonomous Emergency Braking to reduce collisions for all vehicles including motorcycles
 - Pedestrian protection standards to reduce the severity of impact with a motor vehicle
 - Motorcycle helmets are certified according to international harmonized standards and in consideration of the local climatic condition.
 - Under-run guards on trucks.
- Promote safer vehicles to the community, influencing consumer vehicle purchase decisions and forcing improvements from manufacturers, and increasing funding for vehicle safety testing.
- Set high safety standards for vehicle fleet purchases/leases. Incentivise modal shifts of road vehicles away from motorcycles to buses and especially BRT systems. Motorcycles are dramatically and inherently more dangerous than cars (with around 10-20 times the death risk per km of travel), and cars are dramatically more dangerous than route buses,^{vii} especially when the buses are regulated to set routes and are not competing on any given route.
- Maintain safety standards (and emission standards) of vehicles through well-regulated vehicle inspection schemes, including Audits of Vehicle Inspection Schemes.
- Countries that export second-hand vehicles to revise their export policies which currently often mean that the most dangerous and most polluting vehicles are being sent to the countries which are least able to manage the consequences. Countries that import second-hand vehicles need to consider this issue in their policies.
- Improve the vehicle registration and identification system, as vehicle identification is a requirement for speed cameras, enforcements, vehicle inspection processes, and the prevention of revenue leakage.
- Road safety must not be left waiting on the long-term development and infiltration of autonomous vehicles.

Arena 3: Safe road use

No country, not even Sweden where the Safe System started, has yet reached the point where the roads, vehicles, and controlled speeds protect road users from their mistakes, and thus substantial death and injury savings can be achieved through improving road user behaviour. Opportunities in this arena are extensive and evidence-based interventions are to be prioritized. Many effective interventions exist including a narrow specific set of training programs.^{viii}

Effective interventions include the creation of general deterrence through well-promoted enforcement, which creates the high perceived risk of detection and delivers swift, unavoidable, deterring penalties. Enforcement, legislation, technology, and multiple systems working in unison are required to achieve this. Other opportunities in this arena include a narrow set of training and experience tools that are shown to improve behaviours, graduated driver licensing, as well as technologies and engineering which assist road users to comply. Those most relevant and valuable in the Asia-Pacific Region are listed in the recommendations below.

Safe Road Use: Recommendations for the Asia-Pacific Region (Global Road Safety Performance Targets 7 to 11)

The following recommendations are to be read in conjunction with the recommendation included in the Global Plan¹:

- Ensure that all policies and programs are based on rigorous scientific evidence that the policy or intervention is effective in saving lives and injuries.
- Adopt enforcement activities and processes which deliver strong general deterrence, as the established key to changing behaviour. At a minimum, this requires enforcement to be promoted by strong warnings weeks in advance of changes in enforcement activities.
- Apply the effective enforcement processes to motorcycle helmet wearing and seatbelt use, along with monitoring of seatbelt use and motorcycle helmet use through on-road observational surveys (not self-report) to assess the efficacy of actions and

allow refinements.

- Mandate vehicle safety features and technologies to support safe behaviours, including seatbelt.
- Ensure that road safety legislation exists and that effective enforcement occurs for low blood alcohol concentration (BAC) limits to prevent drink-driving, with specific lower BAC level provisions for novice and professional drivers. The measurement of alcohol in fatal crashes is also required to monitor progress.
- In countries with significant numbers of pedestrian victims and/or motorcycle victims, a focus on motorcycle enforcement, and enforcement of car, bus, and truck drivers to give way to motorcycles and pedestrians. Regulate bus systems, so that competition between operators is for exclusive assignment to a set route not a competition between providers on the same route.
- Provide sufficient and suitable equipment for enforcement activities, including contracts to ensure maintenance and calibration of equipment. For many countries, this may be best achieved through contracting companies to continuously supply set amounts of working equipment rather than the purchase of equipment.
- Increase the proportion of driving undertaken by female drivers, who, evidence shows, are safer than males even when the amount of driving undertaken is considered.
- Create a licensing system that ensures that people start their driving careers 'in the system' with on-road training and testing.
- Adopt a graduated licensing scheme, which gradually releases drivers from various restrictions as they get older and pass relevant tests, if applicable.
- Legislate (if necessary) and create systems that allow enforcement of limits for maximum driving hours and minimum rest periods for professional drivers.
- Make liability insurance mandatory for operators of motorized vehicles and consider a levy on premiums to assist the funding of road safety, if possible.

Arena 4: Post-crash Care

The World Health Organization estimates that the proportion of injured people who die before reaching hospitals is at least twice as high in LMICs as in HICs,^{ix} reflecting many factors but certainly significantly including the speed of response and quality of emergency care.

Rapid effective emergency care not only saves lives but may also reduce long-term disability for survivors of road crashes and many other incidents. The people, knowledge, skills, infrastructure, equipment, systems, management, and funding required to achieve this are substantial, and largely outside the purview of road safety, as they should be based on the breadth of issues emergency care addresses. Nonetheless, these systems are vital for road safety and in some circumstances can be dedicated to serious crash risk roads. Care for crash victims must also go beyond the emergency response, to include the provision of medium and long-term care and rehabilitation.

The Asia-Pacific Region faces many challenges in post-crash care. Crash victims can wait hours for help in some countries, especially in rural and remote areas. In several countries, the police are often the only service providing first aid. Bystanders may be reluctant to intervene due to a lack of training and confidence in being able to assist, and because in many countries of the region there are no 'good Samaritan' laws to protect those who render assistance, though these have been introduced in some countries. Other challenges faced by emergency response systems in many Asia-Pacific Region countries include poorly coordinated dispatch services, lack of geo-location of crashes, the absence of working protocols between emergency services, poorly equipped ambulances, and in some countries it is difficult for women to travel with or be treated by male rescue staff.

Effective Post-Crash Care: Recommendations for the Asia-Pacific Region (relevant to Global Road Safety Performance Target 12)

The following recommendations are to be read in conjunction with the recommendation included in the Global Planⁱ:

- Set strong targets for minimum emergency response times, and manage, fund, and resource emergency response systems to achieve these targets, monitor progress, and refine actions to achieve targets.
- Provide access to emergency and hospital care for all regardless of ability to pay.
- Provide a single emergency care number available in all locations and well-known nationwide.
- Ensure that pre-hospital emergency response staff have suitable standardized training and certification.
- Provide equipment and training needs to fit these geographical needs – e.g. for rope rescue in steep terrain, or river rescue. In big, congested conurbations there are also specific issues: 'Moto ambulances' on two wheels can reach victims more quickly and carry essential emergency care at the scene more effectively than waiting for a larger vehicle to arrive.
- Enact Good Samaritan Laws to ensure protection for lay responders.
- Conduct post-crash care capacity reviews, if the current level of service is not clear, in order to guide the above improvements.
- Develop systematic trauma registry data systems and share data.
- Provide medium and long-term care as well as rehabilitation to minimise disability.
- Provide social, judicial, and, where appropriate, financial support to bereaved families and survivors.

- Employ female rescue personnel, both as gender equity in employment issues and also to address the challenges faced by male staff in treating female victims in some countries.
- Include requirements for the provision of emergency care in concession contracts for toll roads where risk is relevant.
- Cautiously assess the relevance of eCall or Accident Emergency Call Systems (AECS) because these can waste resources by generating false alarms where a crash occurs but no one requires emergency care.

Arena 5: Safe Speed, a cross-cutting issue

Safe Speed is an arena of action in this Plan because it is critical to road safety and represents especially powerful cost-effective opportunities across the Asia-Pacific Region. Speed refers simply to the occurrence of movement measured as distance/time, such as kilometers per hour (kmph). Speed is fundamental to road safety and lies at the heart of the safe system approach: speed not only increases crash severity but also the occurrence of crashes.

The best evidence from many countries demonstrates the powerful effects of speed on road safety: Each 1% decrease in speed delivers a 4% decrease in deaths, around a 3% decrease in serious injuries, and a decrease in all crashes. The effects of speed on the crash occurrence and crash severity are universal to all countries because they arise from the fundamental laws of physics. The opportunities for saving lives and reducing injuries in the Asia-Pacific through improved management of speed are especially large because: (1) existing urban speed limits are commonly high, (2) large proportions of road users (pedestrians, cyclists, and motorcyclists) are not protected by a vehicle around them meaning that fatal crashes can occur at lower speeds, (3) road design and engineering standards in many Asia-Pacific countries currently do not allow the most effective speed management and must be revised, and (4) speed management is often inadequate: speeding is common in the region. Thus, the Asia-Pacific will benefit more profoundly than most regions from 30 kmph speed limits in pedestrian and bicycle areas (which is already starting in many countries of the region), with good engineering to manage speeding, and from improved management of speeding in rural roads and highways.

Safe Speed: Recommendations for the Asia-Pacific Region (relevant to Global Road Safety Performance Target 6)

The following recommendations are to be read in conjunction with the recommendation included in the Global Plan¹:

- Revise current methods for setting speed limits, to give priority to safe system speeds, in preference to road classification-based speeds
- Adopt a large program of 30 kmph zones in areas where pedestrians or cyclists are common, with strong well-proven speed controlling infrastructure (which can be designed to be suitable for buses, trucks, and motorcycles: see next recommendation) and education of the community.
- Ensure that the national road engineering and construction standards not only allow, but require, road design features to reduce speeds (such as area-wide traffic calming, speed humps, speed cushions, well-designed roundabouts, raised pedestrian crossings, raised platform intersections, and gateway treatments- which have strong benefits and powerful economic returns) in areas such as pedestrian activity areas, markets, shopping areas, schools, and routes to schools for children.
- promote the safety, economic and other benefits of managing speeds down. Seek out and collaborate with partners in other global agendas which also benefit from better management of speed (climate change, health, air pollution, gender, etc.) giving a stronger voice to the value of managing speed.
- Undertake a review of readiness for speed cameras, following the recently developed GRSP-GRSF guide for assessing readiness and employ results to either help implement speed cameras, or improve the identified weaknesses ready for cameras. As soon as feasible, implement speed cameras, which deliver proven powerful road safety gains, and promote the importance of speed enforcement.
- Follow best practices in speed enforcement with a focus on creating general deterrence of speeding. This includes improved general deterrence from well-publicised effective enforcement, as well as penalties that deter and are unavoidable.
- Manage and monitor the speeding behaviour of employees, with negative consequences for speeding.

Arena 6: Modal shift, land use planning, and Reduced Road Use Exposure

Roads are the most dangerous form of transport: 97% of global transport system injury-related deaths are caused by road transport.^x Thus, reducing road use is an effective road safety intervention. This is not about the movement to safety vehicles, which is also valuable and is covered in Safe Vehicles.

Road use can be reduced in two ways. First, moving people and freight from road transport to other forms (rail, metro, water, and air) provides significant net safety improvements. Provision of non-road transport options, policies, and practices that make their use easier and more comfortable, or less costly (including through fees and taxes for road use) are powerful though not obvious road safety interventions. The second area of policy and regulatory improvement is through reducing the need for mobility. Good land use/city planning and controls can close the distances between people and the employment, services, and good they access. The potential cities

have as a truly rare upside of the horrific COVID-19 pandemic is that we may travel less for work. More people working from home has the potential to revolutionize our city structures with much more local amenities: the shops, cafes, and meeting places that were previously centralized in CBDs and city hubs may move more into residential neighbourhoods, allowing much closer and possibly more active movement to them, and certainly requiring less travel in total. In broader terms, instead of promoting mobility as a right, it may be better to promote access as a right, with mobility being one method of access.

In LMICs major cities of the Region have grown organically though now with increasing government regulation and control. Government policies in this regard can substantially improve road safety, including through better city design, land use planning, and regulation.

Reduced road use will also serve other global agenda (climate change, the health effects of air pollution and noise pollution, and increased active transport).

Reduced Road Use Exposure: Priority Recommendations for the Asia-Pacific Region (Relates to UN Target 11.2).

The following recommendations are to be read in conjunction with the recommendation included in the Global Plan¹:

- Increase access to, and create incentives (or disincentives for the private vehicle) for the use of, non-roads forms of transport for people and goods: metro systems, air transport, rail, and water transport.
- Allow and facilitate increased work from home where possible to reduce commuting.
- Following COVID, serve the long terms benefit of cities by not expending substantial resources to reinvigorate city centres, and instead work to facilitate the more effective distribution of centrally concentrated facilities and services to locations that encourage and better serve those working from home.
- Emphasize vulnerable road user safety in land use planning. For example, bicycles, pedestrians, and motorized two-wheeler facility planning need to be incorporated into the land use planning
- Refocus the work of, and increase the influence of, urban planners/designers more on road safety and reducing road use (though more compact city designs, lower road travel speeds, transit-oriented development concentrating urban and commercial developments around mass transit nodes, incentives discouraging the use of private vehicles), and including the explicit calculation of crash cost saving and human life savings in assessments of urban planning policy and practice. Involve urban planners, road safety experts, and public transport experts in the development of a guideline for the above processes.
- Build capacity for city planning in the Asia-Pacific Region.
- Hold city administrations and planning accountable for reducing motorized road use, in the service of the many issues which will benefit.
- Resist presenting road safety performance measures in terms of death or injuries per 100million vehicle km (as some HICs do), because this dismisses the value of reducing road use.
- Create a cultural shift in the stated goal of the transport system from the provision of mobility to the broader aim of provision of access.

Arena 7: Road Safety Management and Leadership

Management and leadership of road safety is an arena of action in this Asia-Pacific Plan because it is an area of strong opportunity requiring vital improvement in the Region. The activities and expertise required for this work cannot be achieved by a committee or council, but a strong well-resourced expert lead agency dedicated purely to road safety in addition to and working with, a high-level committee which remains valuable.

Road safety is a product that can be delivered. Its delivery is achievable through actions across each arena, as presented in the Plan. This, in turn, requires effective *Management and Leadership* of road safety. This involves ensuring that the actions chosen are evidence-based (i.e., there is scientific evidence that this action will work to save lives and injuries) as well as data-driven (i.e., the data show that the chosen action is addressing a significant existing problem). It also requires the processes to deliver the chosen actions, including ensuring coordination and collaboration across the many stakeholders: Road safety is delivered by the decisions and work of governments/parliaments, many agencies of government (road agencies, police and gendarmerie, education, emergency response organizations, health, and trade for vehicle import and manufacture controls, etc.) across multiple layers of government (national, state/provincial, and local) as well as NGOs and the private sector. Road safety also requires significant funding which requires sound business cases as well as a real commitment to road safety from Governments. Road crash deaths and injuries generate huge costs to countries and retard long-term economic growth and thus strong business cases do exist for effective road safety actions.

The arena of Road Safety Management (along with Speed Management) includes the most critical factors that limited success in the first UN Decade of Road safety: (1) substantially inadequate funding of road safety and commitment to road safety improvements by the funding agencies, (2) many countries do not have a road safety target, plan or strategy and effective lead agency for road safety; (3) crash and other road safety data are commonly poor, though generally strong in the HICs, including in the Asia-Pacific Region. Opportunities for improvements exist, in terms of recording, analysing, and employing crash data; and harmonizing the data management

utilizing the Asia-Pacific Road Safety Observatory (APRSO).

Monitoring and Evaluation

Monitoring, evaluation, and regular refinement of intervention are vital elements of road safety management. This often includes mid-term reviewing of Plans themselves.

National and local action plans are ideally developed to reflect the best opportunities available for local circumstances, but should still be selected from actions for which evidence of life-saving value exists. Monitoring of the processes of implementation and the outcomes being generated should be carried out iteratively and be informed by data, at national and local levels. Results should be used to refine, improve, expand, and/or strengthen actions. The collection of quality data is a key prerequisite for targeting implementation and monitoring progress and is improved by data sharing and linkages across sectors. Monitoring can valuably include continuous improvement processes such as road safety assessments and safety audits to guide improvement.

Road Safety Management and Leadership: Recommendations for the Asia-Pacific Region (relevant to Global Road Safety Performance Target 1).

The following recommendations are to be read in conjunction with the recommendation included in the Global Planⁱ:

- Sustainably fund the lead agency's operation as well as the direct delivery of road safety. While external sources (such as the UN Road Safety Fund, the World Bank Global Road Safety Facility, donors such as Bloomberg Philanthropies, and road safety funding in Multi-Lateral Bank funded projects) are valuable, governments must appreciate that the level of funding required cannot be provided from these sources, and that road safety is a sound economic investment. Ideally, this funding should be controlled by a road safety agency or at a minimum by pure road safety arms of relevant delivery agencies, not the larger agency.
- Employ the human and hard economic costs of road crashes (World Bank Global Road Safety Facility estimates exist from all low and middle-income countries^{xi}) in business case considerations of the clear economic returns from effective road safety actions.
- Adopt a rigorous evidence-based approach, not a common-sense approach, to selecting road safety interventions, noting that this is not the same as a data-driven approach to road safety and that both are necessary.
- Create/maintain a national lead agency for road safety as well as a high-level national coordinating committee, which is suitably staffed with road safety experts and other relevant staff; is suitably funded; has the formally provided powers to co-ordinate, direct, guide, and monitor the road safety delivery of other government agencies/departments.
- Either have the funding to purchase road safety services and actions from other government entities or has the power to direct other entities included in the expenditure of their funding; has full access to crash and other data and responsibility for improving the data and representing the country in the APRSO; provides expert advice and secretarial services for the National Road Safety Committee/Council, which should meet several times per year.
- Develop and fund the actions contained in a National Road Safety Action Plan and/or Strategy based on this Plan including targets for actions, and intermediate outcomes, with milestones (interim targets) though the decade to connect the plan with the UN goal of halving deaths and serious injuries in the decade to 2030 These may be more efficiently developed by countries working in collaboration in the sub-regions of the Asia-Pacific.
- Adopt the well-proven Safe System approach to road safety, and promote and advocate for it. This includes rejecting and actively countering a victim-blaming culture and fostering road system operator responsibility and accountability for road safety.
- Government agencies and departments must commit to closer collaboration to deliver the range of interventions required for a safe system and the National Plan. This particularly includes collaborating in determining responsibility for actions, reporting on performance, and full open sharing of data.
- In several vital areas of road safety delivery (enforcement, road design, and construction, vehicle inspection) governance and transparency require significant improvement in many countries of the Region. (Responsibility: Governments)
- Map stakeholders to ensure the best partnerships beyond government are identified and adopted.
- Consider UN Legal Instrument(s) most suitable to the country and accede to it.
- In road safety management, highlight and leverage the synergies between road safety and the other global agenda noted above, including consideration of the costs of these agendas in the business case for synergizing interventions.
- Develop valid comprehensive crash data for multiple aspects of road safety management and delivery, and participate in the APRSO,
- Build capacity in road safety staff.
- Undertake monitoring and a mid-term reviewing of the Regional Plan, to adapt to changes, progress, and lessons from the first 5 years and ensure its currency.

Conclusions: The Way Forward and call to action

Governments and every organization concerned with road safety are urged to adopt this plan to guide the ongoing development, implementation, and evaluation of road safety activities in the Asia-Pacific Region. This Plan recommends only evidence-based actions, selected for their relevance to the region. National plans can valuably select among the recommendations action herein, based on local data identifying the extent of the problem, resulting in the selection of actions that are evidence-based as well as 'data-driven': both are necessary for effective actions. This Plan calls on Governments and others to adapt from the first decade, take new steps, recognize the extent of the suffering, loss, and economic costs of road crash deaths and injuries, to recognize the synergies between road safety interventions (especially speed management and modal shift) and other global agenda, to increase their commitment to road safety, to move to safe system principle to increasingly guide actions to more sustainable delivery of safety through many areas of the road system, to increase funding for road safety, and to ensure that actions are chosen for the evidence of success, not their common-sense value or popularity.

i Global Plan: Decade of Action for Road Safety 2021-2030 <https://www.who.int/publications/m/item/global-plan-for-the-decade-of-action-for-road-safety-2021-2030>

ii World Bank (2019). *Guide for Road Safety Opportunities and Challenges: Low- and Middle-Income Countries Country Profiles*. Washington, DC., USA: World Bank.

iii This descriptions is largely based on the Second Global Plan, but also adopts the revised position on shared responsibility recently advanced as more internally consistent with safety system: Job RFS., Truong, J. & Sakashita, C. (2022). *The Ultimate Safe System: Redefining the Safe System Approach for Road Safety. Sustainability*, 2022.

iv See: Sakashita C. and Job R.F.S. (2016). Addressing key global agendas of road safety and climate change: synergies and conflicts. *Journal of the Australasian College of Road Safety* 27(3):62-68. <http://acrs.org.au/wp-content/uploads/Journal-of-ACRS-27-3-final-for-web.pdf>, and Job, RFS. & Mbugua, LW. (2020). *Road Crash Trauma, Climate Change, Pollution and the Total Costs of Speed: Six graphs that tell the story*. GRSF Note 2020.1. Washington DC: Global Road Safety Facility, World Bank. <http://documents1.worldbank.org/curated/en/298381607502750479/pdf/Road-Crash-Trauma-Climate-Change-Pollution-and-the-Total-Costs-of-Speed-Six-graphs-that-tell-the-story.pdf>

v IQAIR (2021). 2020 World Air Quality Report. <https://www.iqair.com/au/world-most-polluted-cities>

vi Job, RFS (2020). [Can COVID-19 teach us something for the road safety epidemic?](#) World Bank blog published on April 19, 2020.

vii Global Road Safety Facility (2020), *Global Road Safety Facility: Leveraging Global Road Safety Success Stories*, Vol.2, Washington, DC., USA: World Bank

viii Turner, B., Job, S. and Mitra, S. (2021). *Guide for Road Safety Interventions: Evidence of What Works and What Does Not Work*. Washington, DC., USA: World Bank. <https://www.roadsafetyfacility.org/publications/guide-road-safety-interventions-evidence-what-works-and-what-does-not-work>

ix WHO (2018). *Global status report on road safety*. Geneva: WHO.

x Gomez HM, Job S, Adriazola-Steil, C, Wegman F, Bezabeh G, Bradford J, et al. (2017). *Chapter 4: Safety, in Global Mobility Report 2017*. Washington, DC: Sustainable Mobility for All.

xi World Bank (2019). *Guide for Road Safety Opportunities and Challenges: Low- and Middle-Income Countries Country Profiles*. Washington, DC., USA: World Bank.