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Major issues in transport

Sustainable urban transport

Note by the secretariat

Summary

The growing pattern of urban motorization is leading to congestion, pollution and greenhouse gas emissions, resulting in a decline in productivity and health and climate change issues in the region. The recently adopted Sustainable Development Goals include a goal on sustainable cities with a target to provide access to safe, affordable, accessible and sustainable transport systems for all. Renewed commitment of members and associate members would be required to tackle the challenges of planning, developing and maintaining sustainable urban transport systems and services.

The present note outlines regional progress and challenges regarding the improvement of urban transport systems and presents the case for developing national policy frameworks on sustainable urban transport development, integrating urban transport modes, developing and applying tools to deploy new innovative technologies, assessing regional progress and building the capacity of members and associate members.

I.   Introduction

1.   The recently adopted Sustainable Development Goals – particularly Goal 11, to make cities and human settlements inclusive, safe, resilient and sustainable – provide a global commitment to maximize the economic and social benefits of urban development and urban transport systems. Sustainable Development Goal target 11.2 is, by 2030, to provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons. Achieving Goal 11 will require enhanced efforts in planning, development, operation and maintenance of urban infrastructure.

2.   The Asia-Pacific region is home to more than two billion urban residents, representing 55 per cent of the world's urban population, a figure set to rise to 64 per cent by 2050.[1] At the same time, vehicle ownership has

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[*]   E/ESCAP/MCT(3)/L.1.

[1]   *Statistical Yearbook for Asia and the Pacific 2014* (ST/ESCAP/2704).

rapidly risen across the Asia-Pacific region. The proportion of passenger cars represents about 70 per cent of all motor vehicles in the Asia-Pacific region. These trends have led to worsening traffic congestion and increasing fossil fuel consumption, which result in more emissions and air pollution and an increase in the number of road traffic crashes in cities. The negative externalities associated with urban road traffic are a burden on economies and result in a lower quality of life for residents. It is estimated that time losses from traffic congestion can lower the gross domestic product of cities by 3 to 5 per cent in Asia.[2]

3.   The proportion of urban residents living in slums was estimated to be 28 per cent in East Asia, 31 per cent in South-East Asia and 35 per cent in South Asia in 2012.[3] With such large numbers of poor people living in slums, Governments and municipal authorities in the region are finding it difficult to provide sustainable urban transport systems and services that are socially inclusive.

4.   Much attention is given worldwide to addressing urban mobility in larger cities, including in Asia and the Pacific, which, in 2014, was the location of 17 of the world's 28 megacities. However, the majority of the Asia-Pacific region's urban population lives in rapidly growing small and medium-sized cities and towns, with 54.4 per cent of the region's urban residents living in smaller cities with fewer than 500,000 people.[1] Given that they are at early stages of development, these secondary and medium-sized cities offer the best opportunities to plan and implement innovative urban transport policies and strategies.

5.   Asian cities feature a colourful array of urban transport. Bus rapid transit systems are gaining popularity in Asia, and non-motorized transport also provides a viable option while the trip length is short. Hybrid and electric-powered transport solutions are emerging as an alternative to vehicles driven by fossil fuels. The use of intelligent transport systems can enhance the safety, efficiency and smooth operation of urban transport systems. However, the region lacks appropriate national policy frameworks for the development of urban transport and deployment of intelligent transport systems.

6.   The present document contains a review of progress and challenges in the improvement of urban transport systems and services in the region. It contains suggestions for some of the policy options required to develop and improve urban transport systems and services in the cities of the region. Key output elements are then proposed for the consideration of the Governments for possible inclusion in the draft regional action programme for sustainable transport connectivity in Asia and the Pacific, phase I (2017-2021).

II.   Regional progress in development of sustainable urban transport systems

7.   Urban public transport systems in the cities of the region include public bus services, bus rapid transit systems, subways, urban rails, monorails, elevated rails (sky trains) and cable cars. Paratransit takes various forms, including vans, tricycles, motorcycle taxis and boats. While the

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[2]   United Nations Human Settlements Programme, *Planning and Design for Sustainable Urban Mobility: Global Report on Human Settlements 2013* (Oxford and New York, Routledge, 2013).

[3]   United Nations Human Settlements Programme, *State of the World's Cities 2012/2013: Prosperity of Cities* (New York, Routledge, 2013).

agglomeration of those services may seem to be promising, the biggest challenge facing many cities is the increasing popularity of private motor vehicles. Private motor vehicles support personal mobility, but the rapid growth in the number of vehicles is further aggravating already congested urban roads and inhibiting the smooth operation of road-based public transport systems, such as public buses.

8.   While total vehicle ownership has risen across the Asia-Pacific region, a closer look at available data for 2013 shows that it ranges from less than 200 vehicles per 1,000 inhabitants for many developing economies to between 600 and 725 vehicles per 1,000 inhabitants in more developed economies, such as Australia, Japan and New Zealand.[4] The main growth countries in the region in terms of vehicle ownership are Azerbaijan, Brunei Darussalam, China, Georgia, Indonesia, the Islamic Republic of Iran, Kazakhstan, the Russian Federation and Thailand. Meanwhile, Afghanistan, Bangladesh, India, Pakistan and the Philippines have markedly lower vehicle ownership per capita, but the private car ownership levels in their cities are significantly higher than the region's national averages.

9.   While there has been steady growth in motorization on the roads of many countries in the region, in recent years growth of vehicle ownership has slowed down in some countries, including Japan, Kazakhstan, Pakistan, the Russian Federation, Singapore and Sri Lanka. Notably, growth in motorized vehicle ownership remains very much widespread in China, India, Indonesia and the Republic of Korea.

10.   A characteristic of motorization unique to many Asian countries is the prevalence of motorcycles. There is a high level of motorcycle ownership in South-East Asian countries, such as Indonesia, Malaysia, Thailand and Viet Nam.[5] In some countries, it is common for people to use motorcycles for intercity trips of distances more than 200 kilometres.

11.   These motorization trends have resulted in greater traffic congestion and increased air pollution, carbon dioxide emissions and energy consumption. Traffic congestion results in lower vehicle speed; for example, the average vehicle speed in Manila is 7 km/hr, 8 km/hr in Bangkok and 9 km/hr in Jakarta. Global emissions of carbon dioxide from transport have increased by 85 per cent from 1973 to 2007,[2] and the transport sector produced almost a quarter of total global carbon dioxide emissions in 2013.[6] Transport also produces local air pollutants such as particulate matter, nitrogen oxides, sulphur oxide, carbon monoxide and volatile organic compounds, which cause damage to human health and ecosystems. In 2013, the transport sector accounted for almost two thirds of global oil consumption and more than 27 per cent of total global energy consumption.[7] The transport

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[4]   See www.oica.net/category/vehicles-in-use/.

[5]   Surya Raj Acharya, "Status, trend and scenarios of sustainable transport development in Asia", presentation made at the Regional Expert Group Meeting on Policy Options for Sustainable Transport Development, Incheon, Republic of Korea, 27-29 November 2013. Available from www.unescap.org/sites/default/files/2.3.Trend-scenario-ESCAP.pdf.

[6]   International Energy Agency, CO_2 Emissions from Fuel Combustion: Highlights – 2015 Edition (Paris, 2015). Available from www.iea.org/publications/freepublications/publication/CO2EmissionsFromFuelCombustionHighlights2015.pdf.

[7]   International Energy Agency, Key World Energy Statistics 2015 (Paris, 2015). Available from www.iea.org/publications/freepublications/publication/KeyWorld_Statistics_2015.pdf.

sector in the Asia-Pacific region consumed oil products amounting to more than 460 million tons of oil equivalent.[8]

12.   Many of the major cities of the Asia-Pacific region (Beijing; Hong Kong, China; Seoul; Singapore; and Tokyo) successfully operate urban public transport systems that are exemplary to most other cities that are in the process of designing and developing their own systems. For example, the modal share of public transport was 44 per cent in Beijing (2012), 81 per cent in Hong Kong, China (2011), 65 per cent in Seoul (2013), 30 per cent in Ahmedabad, India (2007), 51 per cent in Tokyo (2008) and 50 per cent in Singapore (2012).[9]

13.   The overall quality of public transport service very much depends on the economy and state of development of the city and/or country. Often a traveller has to take a combination of transport modes to complete a journey. Connection and smooth transfer between modes through the use of integrated stations is an important factor in successful urban transport systems.

14.   Despite various efforts to improve urban transport, municipal authorities face an uphill struggle to maintain public transport's modal share, which is declining in some cities.[2] Consequently, the upgrading of existing public transport systems and the introduction of newer and more efficient systems are urgently needed to compete with increased private vehicle use.

15.   Urban rail services, metro and other rapid mass transit systems represent the cutting edge of sustainable urban transport options available in urban environments. While these systems are costly and take a long time to design and implement, their high capacity and long-term feasibility offer applicability compared to other less sustainable options. It appears that a major barrier is the high capital costs of modern mass transit systems. For example, the cost of the metro system in Hong Kong, China, was about 220 million dollars per kilometre and the cost of the elevated Skytrain system in Bangkok was about 72.5 million dollars per kilometre.[10] The high capital cost involved warrants consideration of other options available for public mass transport systems.

16.   Bus rapid transit systems are significantly cheaper than other mass transit options. Such systems are emerging as a popular mass transit mode in many Asian cities. The cost of Janmarg, a bus rapid transit system in Ahmedabad, India, was 2.4 million dollars per kilometre. Some 39 Asian cities in China, India, Indonesia, the Islamic Republic of Iran, Japan, Pakistan, the Republic of Korea and Thailand are currently operating 1,375 kilometres of bus rapid transit routes, carrying 8.5 million passengers per day.[11]

17.   A significant proportion of the population in Asia still depends on walking and bicycling. Shanghai in China, Osaka in Japan and New Delhi each have a high share of non-motorized transport. Cities such as Guangzhou, China (46 per cent), and Bangalore, India (42 per cent), have a relatively high modal share for walking and cycling. Governments are increasingly

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[8]   ESCAP calculation, based on data from: International Energy Agency, World energy balances, IEA World Energy Statistics and Balances database; available from http://dx.doi.org/10.1787/data-00512-en (accessed on 14 March 2016).

[9]   See www.lta.gov.sg/ltaacademy/doc/j14nov_p54referencemodeshares.pdf.

[10]   Lloyd Wright and Walter Hook, eds., *Bus Rapid Transit Planning Guide: June 2007*, 3rd edition (New York, Institute for Transportation and Development Policy, 2007).

[11]   Global BRT Data. Available from http://brtdata.org/.

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promoting the use of non-motorized transport as a policy strategy to reduce traffic congestion, boosting its viability for wider swathes of their populations. In conjunction with the channelling of more resources into cycle lanes and pedestrian pathways, enforcement of the use of safety gear among cyclists still remains a priority. Further, making cities more compact and walkable through the integration of land-use and transport planning would encourage residents to move away from car-based travel to public transport and active modes of transport such as walking and cycling with good intermodal connectivity.

18.   According to one report, some 19 countries in the region have initiated either national or local policies to promote the use of non-motorized modes of transport, namely walking and cycling.[12] Chennai, a city in southern India, has recently adopted a progressive policy that makes walking and cycling a policy priority. To support this policy, 60 per cent of the transport budget of the Chennai Corporation is to be allocated to the construction and maintenance of non-motorized transport infrastructure.[13] Other examples include the construction of skywalks to link several stations along the Bangkok mass transit system (the Skytrain), and the Walk2Ride initiative in Singapore, which aims to make transport modes more accessible.[14] Bike-share systems, car-free zones and car-free days have also been introduced in several Asian cities to encourage the use of non-motorized transport.

19.   There is wide variance in the use of intelligent transport systems in Asia. Their application has become increasingly common to urban transport systems. In Asia, the three most common uses of intelligent transport systems are: electronic toll payments and pricing, which can be varied according to the time of day and congestion levels; coordinated linked traffic signals; and the provision of real-time information to drivers and travellers. Countries including China, Japan, Malaysia, the Republic of Korea, the Russian Federation, Singapore and Thailand use such technologies to improve traffic management and safety.

20.   Many cities are using integrated ticketing on public transport. In Beijing, one card is used for the metro, light rail and buses. In Tokyo, rechargeable smart cards called "Suica" and "PASMO" can be used on trains, subways and buses. In the Republic of Korea, the new "One Card All Pass" can be used for all public transport modes, including bus, metro, railway and expressway across the nation, while in Seoul, the "T-money" and "Cash Bee" cards provide commuters with similar convenience. With the advantages of these systems already proven, Thailand is also planning a common ticketing system for public transport in Bangkok.

21.   Some cities (such as Beijing; Hong Kong, China; Seoul; Singapore; and Tokyo) have developed public transport hubs and integrated passenger terminals. Such hub terminals offer seamless transfer among public transport modes and commuters are free to choose options that meet their needs for convenient connections and intermodal interchange. Bangkok has developed

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[12]   World Health Organization, "Global Status Report on Road Safety 2013: Supporting a Decade of Action" (Geneva, 2013).

[13]   Aswathy Dilip, "Chennai adopts NMT policy: a quantum leap towards safer streets", 27 October 2014. Available from www.itdp.org/chennai-adopts-nmt-policy-quantum-leap-towards-safer-streets.

[14]   Global Accessibility News, "Singapore to spend S$700 million to improve transport accessibility", 24 January 2013. Available from http://globalaccessibilitynews.com/2013/01/24/singapore-to-spend-s700-million-to-improve-transport-accessibility/.

car parks for subway users to encourage park-and-ride, and improved pedestrian connection to Skytrain stations and between the Skytrain and the waterways.

22.   Many countries in the region have some form of national transport policy framework. The Integrated Multimodal Transport Policy of Bangladesh, the National Transport and Traffic Development Master Plan (2011-2020) and the Environmental Sustainable Transport Master Plan of Thailand, the Land Transport Master Plan of Lao People's Democratic Republic, the National Transport Plan (2007-2026) of Solomon Islands and the National Transport Strategy of Papua New Guinea provide some examples of national transport policy framework. India introduced a comprehensive National Urban Transport Policy in 2006.[15] However, many countries in the region still do not have a national urban transport policy framework. In most cases, the urban transport issue is dealt as part of a project or programme.

III.   Challenges in developing sustainable urban transport systems

23.   Key challenges faced by the countries and cities of the region in planning and developing safe, affordable and inclusive sustainable urban transport systems and services are highlighted in the following sections.

A.   Lack of an integrated approach to urban transport planning

24.   Despite increasing emphasis on enhancing sustainability by reducing energy consumption and emissions, many Asian countries are still following a conventional approach to urban transport planning. There is an urgent need to adopt an integrated approach to comprehensive urban transport. A comprehensive urban transport plan should aim at door-to-door mobility, utilizing all modes of transport and seamless connection between them.

25.   Governments have focused heavily on addressing urban mobility in megacities. However, planning and implementing activities that promote integrated, sustainable and innovative transport planning strategies in secondary and medium-sized cities at their early stage of development remain limited.

26.   The cities of the region need an assessment tool to evaluate the performance of sustainable urban transport policies or systems in order to identify policy gaps and prioritize the actions required to improve urban transport systems and services.

27.   Since many of the larger cities are located in coastal areas and on river banks, the region faces the daunting task of enhancing the resiliency of urban transport systems to the impacts of climate change and disasters and rising sea levels. Given that these factors could substantially affect the design, construction and operation of urban transport systems, consideration of them should be integrated into the planning process. Furthermore, based on the premise that enhancing resiliency after construction tends to be more difficult and costly, various design options need to be evaluated while planning new urban transport infrastructure.

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[15]   See http://moud.gov.in/sites/upload_files/moud/files/pdf/TransportPolicy.pdf.

B. Lack of national urban transport policy framework

28.   The commitment of world leaders to improving urban public transport systems was reaffirmed during the recently concluded United Nations summit for the adoption of the post-2015 development agenda. This commitment now needs to be translated into national actions that ultimately change the existing situation of urban public transport systems in capital and emerging secondary cities.

29.   A review of existing policies indicates that many countries in the region lack an appropriate national urban transport policy framework. Furthermore, in the absence of such a policy framework, the institutional framework does not support trickle-down policy effects. The responsibilities of urban transport are left entirely to the cities, towns and municipal corporations.

C. Low deployment of and capacity to use intelligent transport systems

30.   Solving urban transport problems requires parallel implementation of multiple countermeasures. Advances in telecommunications, the automotive industry, smart mobile devices and electronic equipment have enabled new innovations such as intelligent transport systems, which have great potential as a driver for sustainable urban transport. However, the main bottleneck to regional deployment of intelligent transport systems is limited access to and spread of such technologies in developing countries. The ways in which some Asian countries have used advances in intelligent transport systems to improve urban transport could serve as examples to other developing countries of how to catch up and develop their own national urban intelligent transport systems. However, the absence of policy and regulatory frameworks on intelligent transport systems and the failure to adapt national regulations to the unique requirements of each country and city pose an obstacle to initiating the deployment and use of intelligent transport systems in the region. A harmonized approach to this transformation and the concepts, technologies, applications, regulations and practices relating to the use of intelligent transport systems, as well as examples of successful projects in the region and beyond, would be very useful in the drive towards establishing a regional policy framework on the deployment of intelligent transport systems.

D. Limited knowledge products on urban transport

31.   Although there has been research and innovation in the field of urban transport, Asia-Pacific countries and cities would benefit greatly from knowledge products on urban transport such as guidelines, standards and policy frameworks relevant to region-specific problems. A compilation of useful experiences, best practice and appropriate technology for use in urban transport solutions would be useful for planners and designers in developing countries and cities. Such knowledge products could address specific issues relevant to Asian cities, such as integrated urban transport planning, congestion management, deployment of intelligent transport systems and improvement of the quality of public urban transport and of the safety of non-vehicular travellers.

32.   Lack of funding and investment for urban transport infrastructure is a major challenge for many of the region's countries and cities, and they could benefit greatly from studies and knowledge products that examine funding opportunities available through international development banks, green climate funds, global environment facilities, clean technology funds, clean development mechanisms, international climate initiatives, joint crediting mechanisms, and public-private partnerships.

E. Limited capacities to plan and manage urban transport systems

33. Growing recognition of the need to improve urban transport systems demands greater capacity and commitment of government officials, planners and policymakers in many developing countries to initiate and implement innovative policies and strategies and manage projects. In addition, imparting advance project- and financial-management skills to project managers and coordinators would significantly improve implementation. Lack of funds is often presented as a challenge, but this may not be true in many cases. Many implementing agencies in developing countries are also finding it difficult to disburse the allocated budget and manage timely completion of projects.

34. In addition, urban transport has a multisectoral dimension, with multiple agencies, belonging to all levels of government (national, provincial and urban/local), involved in developing and implementing urban transport policies, strategies and programmes. Strengthened policy and institutional coordination among various transport and related agencies would therefore greatly support implementation of policies and programmes. It is essential that related actions are coordinated and that plans and policies are consistent and complementary.

IV. Policy options to develop sustainable urban transport systems and services

35. Efforts to develop urban transport systems and services that are sustainable and inclusive must be accompanied by appropriate policies and strategies. Countries and cities need to evaluate the existing urban transport policies and systems, identify policy gaps and continuously refine strategies and polices in line with the outcome of that review and with needs. A comprehensive integrated urban public transport system with a combination of mass transit and bus rapid transit with feeder bus systems could be a way forward for many emerging cities in the region. Authorities need to adopt appropriate innovative technologies and prioritize their actions so as to help policymakers and planners weigh up various strategies and policies and take bold measures to make urban transport more sustainable and inclusive.

36. The following are five policy options for consideration: integration of urban transport modes and assessment of urban transport systems; development of national policy frameworks on urban transport; adopting appropriate policy frameworks for the deployment of intelligent transport systems; undertaking a periodic review of advances in urban transport systems; and strengthening the capacity of institutions and stakeholders in planning and developing urban transport systems.

A. Integration of modes and assessment of urban transport systems

37. Most public transport users in the region have to rely on a combination of modes to get from their point of origin to their destination. Integration is therefore a very important aspect to consider while planning a public transport system. Integrated urban transport master plans can be developed with future urban growth and expansion in mind. Commonly, such plans include short-, medium- and long-term time horizons in order to effectively utilize available resources and to offer solutions to the immediate challenges faced by the city. In this respect, household travel surveys are an important source of useful information on the travel behaviour patterns of urban residents for planning and developing urban transport systems and collecting primary baseline travel data.

38. The integration of all modes of transport is achievable in a number of ways: (a) physical integration between modes, to facilitate the smooth transfer of passengers and goods from one mode to another; (b) operational integration, to facilitate the functioning of physically linked modes; and (c) service integration, to promote the use of different modes with ease, such as common or combined fare ticketing systems. Such integration is particularly important in the context of Asian cities, where public transport corridors are still emerging. The city of Colombo has recently developed a comprehensive urban transport master plan that provides an example of integration of various public transport modes.[16]

39. There are plenty of good examples of integrated passenger terminals. Such terminals can offer easy transfer facilities between modes, provide many public transport options and leave commuters free to choose an option that meets their needs. While the planning and design of such an integrated terminal very much depends on the location and types of modes that it serves, a basic framework for planning and designing such a facility would be useful both for countries and for cities.

40. In order to assess the progress and evaluate the performance of sustainable urban transport policies, systems and their implementation and operation, countries need to be able to objectively measure the policy and system. To achieve that, a set of indicators needs to be established that are easily populated with data and show an accurate depiction of the performance of the urban transport policy and system. It is therefore proposed to develop a tool to evaluate the status of urban transport systems in cities.

41. The tool, provisionally named the sustainable urban transport index, will be a framework of indicators that address the various modes of urban transport, their operation and the state of infrastructure, policies and financing. The index will encompass a selected set of economic, social and environmental indicators, which can represent the key contributors to sustainable development. It is hoped that the index will serve as a quantitative tool for the region's member States and cities to compare their performance on sustainable urban transport policies, projects and systems, and will help to identify the additional policies and investment strategies required to improve the urban transport system and services.

B. National policy framework on urban transport

42. Many countries in Asia and the Pacific lack strategic urban transport policies that ensure the mobility of people rather than just vehicles. A comprehensive national policy on sustainable urban transport should form part of each country's overall national sustainable transport strategy. National Governments need to be encouraged to make a policy pledge on sustainable urban transport. Where not yet in place, national Governments may define, adopt and implement a national policy framework on sustainable urban transport, focusing on accessibility and taking into account the sustainable transport principle.

43. National Governments may encourage their city and town authorities to develop and implement comprehensive policies and an integrated master plan on urban transport as a coherent part of the national policy framework,

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[16] Dhammika Perera, "Improvement of urban transport system in Colombo metropolitan area: the way forward – Colombo metropolitan transport master plan and areas for international cooperation". Presentation available from www.uncrd.or.jp/content/documents/22938EST-P5_Sri-Lanka-MOT.pdf.

rather than reverting to the ad hoc approaches commonly used for solving urban transport issues. The focus of such policies may be to ensure the sustainability, safety, efficiency and affordability of urban transport systems.

44. A national policy framework on urban transport would offer opportunities for emerging and secondary cities, where urban public transport is close to non-existent, to plan ahead to provide and improve the quality of public transport systems. Such a strategic commitment would ensure planning and investment stability and could serve as a supporting instrument for donors and multilateral banks for investing in urban transport infrastructure.

C. Policy framework for the deployment of intelligent transport systems

45. Intelligent transport systems can bring a broad range of benefits in many areas of urban transport, such as helping to improve safety on highways by communicating vehicle information and highway conditions and by connecting vehicle drivers. Intelligent transport systems also assist travellers to make informed choices about public transport, telecommuting or driving outside peak hours or on congested routes.[17] They enable commuters to plan their trips and avoid unnecessary journeys and congested routes. They also allow for the better coordination of public transport modes and online timetables, thereby enhancing the efficiency of their operation and services.

46. Asian cities need to apply principles of transit-oriented development and develop additional urban public transport corridors. The effective and harmonized use of intelligent transport systems can help to create seamless journeys and hence increase productivity, efficiency and security.

47. In this context, a policy framework for Asia and the Pacific on deploying intelligent transport systems could help regional member countries and their development partners accelerate progress by identifying best practices; establishing standards, regulations and policies; harmonizing equipment; and strengthening collaboration and networking among stakeholders. The framework could provide general direction for member countries and their development partners when formulating their national master plan on intelligent transport systems by promoting common approaches to deployment with a view to reducing the complexity of the present system and ensuring cost-effective strategies.

48. The framework could also help bring together national, bilateral, subregional and regional efforts in a more coordinated way to accelerate the process of deploying intelligent transport systems, through working groups that tap into academia's extensive expertise and broader collaboration between Governments, companies, civil society, international organizations, academic institutions, transport operators and transport communities.

49. Given that certain prerequisites for deployment of intelligent transport systems are not always present in developing countries, a regional deployment policy framework could include five distinct components: (a) data gathering, analytics and assessment for projects; (b) awareness-raising and promotion of good practices at all levels of transport operations; (c) standardization and harmonization of intelligent transport systems, supported by effective

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[17] Takayuki Ito, "Intelligent transport system: a vision for 21st century cities", background paper prepared for the Seventh Regional Environmentally Sustainable Transport Forum in Asia and Global Consultation on Sustainable Transport in the Post-2015 Development Agenda, 23-25 April 2013, Bali, Indonesia. Available from www.uncrd.or.jp/content/documents/7EST-P10-1.pdf.

regulations and policies; (d) strengthening of collaboration and networking; and (e) promotion of investment in specific projects.

D. Periodic review of advances in urban transport systems

50.   While transport has been an essential element in the rapid growth and economic development of Asia and the Pacific, the urban transport sector is now at a crossroads as more than 48 per cent of population of the region are living in urban areas.[18] Rocketing demand for quality and affordable transport services is putting extreme pressure on existing infrastructure at a time when public budgets are constrained. The challenge is therefore to ensure that today's urban transport policies and investments contribute towards the achievement of the Sustainable Development Goals.

51.   A review of regional progress on urban transport would help policymakers and planners in shaping a range of policies supporting the planning, development and assessment of sustainable urban transport systems and services. This review could look at emerging trends in urban transport in the region and present initiatives that are making urban transport systems cleaner, safer, more efficient and more affordable. The review could include a collection of good practices in urban transport that are being successfully implemented by developed and developing countries and cities, such as development of public transport systems, readiness for deployment of intelligent transport systems and related policy frameworks, use of hybrid and electric vehicles, congestion management, promotion of alternative energy such as biofuels, use of non-motorized transport and modal shift.

52.   This regional progress review would provide valuable input to the biennial ESCAP publication *Review of Developments in Transport in Asia and the Pacific*.

E. Capacity-building

53.   National and local governments, municipalities and city authorities are key stakeholders in developing and implementing sustainable urban transport policies. Advisory missions and national and subregional workshops and seminars to enhance the capacities of senior and mid-level officials in national Governments, local governments, municipalities and city authorities are effective mechanisms for capacity-building.

54.   Further, encouraging and supporting the participation of urban transport planners and policymakers in regional expert group meetings and conferences would raise awareness and encourage the sharing of experiences and good practices. These exposures could enable policymakers to consider various policy options and effective strategies for planning, developing and assessing sustainable urban transport systems and services.

55.   Differently targeted capacity-building programmes would be necessary for different groups of countries and cities as national and local policies and strategies very much depend on the state of development and the size and characteristics of cities. Support is also necessary to strengthen institutional coordination between national, local and city agencies and institutional capacities to implement sustainable and inclusive urban transport policies.

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[18] Economic and Social Commission for Asia and the Pacific, "2015 ESCAP population data sheet". Available from www.unescap.org/sites/default/files/SPPS%20PS%20data%20sheet%202015%20fin al%20online.pdf.

56.   The planning and implementation of the technical assistance and capacity-building programmes would focus on the requirements of and requests from countries with special needs, such as least developed countries, landlocked developing countries and small island developing States.

V.   Issues for consideration

57.   Rapid motorization in the region's cities has led to worsening traffic congestion, more road crashes and an increase in emissions and air pollution. Further, increasing numbers of disadvantaged people inhabit urban areas and create more demand for affordable urban public transport systems. Even though the region's cities feature a mixed array of urban transport – such as paratransit, public transport, taxi services and non-motorized transport – there remain plenty of opportunities for improvement. The major challenges faced by the countries and cities in the Asia-Pacific region are extending coverage, managing congestion, reducing emissions and pollution, enhancing safety and ensuring affordability.

58.   Governments are invited to provide guidance on the following elements suggested for inclusion in the draft regional action programme for sustainable transport connectivity in Asia and the Pacific, phase I (2017-2021).

Immediate objective. The region's countries and cities are to initiate and implement innovative policies and frameworks to assess, plan, develop, improve and maintain sustainable urban transport systems and services.

Outputs

1.   Study on integration of urban transport modes and assessment of urban transport systems;

2.   Regional framework and tools on deployment of intelligent transport system;

3.   Guide to national policy frameworks on sustainable urban transport development;

4.   Report on regional progress on improvement of urban transport systems;

5.   Workshop/seminar/meeting/advisory service to support member countries in developing and improving urban transport systems.

Indicators of achievement

1.   A report published on integration and assessment of urban transport systems.

2.   Regional policy framework and tools on deployment of intelligent transport systems established.

3.   Guidelines prepared on the formulation of a national urban transport policy.

4.   Urban transport chapter(s) included in the *Review of Developments in Transport in Asia and the Pacific*.

5.   Capacity-building workshop(s)/seminar(s) held on sustainable urban transport.

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