Chair's Summary

Conference cum Exhibition on Sustainable Mobility

(An integrated conference of the Urban Mobility India 2011 and Sixth Regional EST Forum in Asia)

3-6 December 2011

Manekshaw Centre, Dhaula Kuan, New Delhi, India

I. Introduction

1. The Ministry of Urban Development (MOUD) of the Government of India, United Nations Centre for Regional Development (UNCRD), United Nations Department of Economic and Social Affairs (UNDESA), World Health Organization Regional Office for South-East Asia (WHO/SEARO), and Ministry of the Environment (MOE) of the Government of Japan co-organized the Conference cum Exhibition on Sustainable Mobility from 3 to 6 December 2011 in New Delhi, India, which was composed of the Urban Mobility India (UMI) Conference 2011 and the Sixth Regional Environmentally Sustainable Transport (EST) Forum in Asia. The integrated Conference was attended by approximately 700 participants, comprising high-level government representatives from twenty-one countries, including Afghanistan, Bangladesh, Bhutan, Cambodia, People's Republic of China, Indonesia, India, Japan, Republic of Korea (hereinafter, Korea), Lao PDR, Malaysia, the Maldives, Mongolia, Myanmar, Nepal, the Philippines, Pakistan, Singapore, Sri Lanka, Thailand, and Viet Nam, Subsidiary Expert Group Members of the Regional EST Forum, international resource persons, representatives from various UN and international organizations, Indian officials from the central government, state government, urban local bodies and parastatals as well as academics, students, nongovernmental organizations (NGOs), and representatives from the private sector.

2. The organizations participating in the Conference included the United Nations Economic and Social Commission for Asia and the Pacific (UN/ESCAP), World Health Organization Regional Office for the Western Pacific (WHO/WPRO), World Bank, Asian Development Bank (ADB), AFD, Institute for Transportation and Development Policy (ITDP), International Energy Agency (IEA), World Resource Institute's Center for Sustainable Transport (EMBARQ), Transport Research Laboratory (TRL), Clean Air Initiative for Asian Cities (CAI-Asia) Center, German International Cooperation (GIZ), Japan International Cooperation Agency (JICA), International Council on Clean Transportation (ICCT), The Energy and Resources Institute (TERI), South Asia Environment Cooperative Programme (SACEP), Health Effects Institute (HEI), Institute for Global Environmental Strategies (IGES), Alliance for Healthy Cities (AFHC), International Union of Railways (UIC), Institute of Urban Transport (IUT-India), Center for Science and Environment (CSE), Partnership for Sustainable Low-Carbon Transport (SLoCaT), Seoul Development Institute (SDI), ASEAN Working Group on Environmentally Sustainable Cities (AWGESC), Dutch Cycling Embassy, Institution for Transport Policy Studies (ITPS), Korea Transport Institute (KOTI), Korea Railroad Research Institute (KRRI), and others.

3. The annually held Regional EST Forum in Asia, which is the key component of the Asian EST Initiative, provides a strategic and knowledge platform for sharing experiences and disseminating best practices, policy instruments, tools, and technologies among Asian countries in relation to the

various key aspects of EST underlined in the *Aichi Statement* (2005). Currently covering twenty-three Asian countries, the high-level policy Forum aims at not only promoting an integrated approach to deal with a range of social, economic, and environmental issues in the transport sector, but also fostering interagency coordination as well as facilitating partnerships and collaboration between governments and international organizations such as development banks, and bilateral and multilateral donors.

4. At the Fifth Regional EST Forum in Asia held in August 2010 in Bangkok, Thailand, twenty-two Asian countries, international organizations, bilateral and multilateral donor agencies, NGOs, research organizations, and international experts and resource persons agreed on the *Bangkok 2020 Declaration* in order to demonstrate renewed commitment to realizing a promising decade of actions and measures for achieving sustainable transport in Asia. It was the first time that Asian governments and other transport stakeholders endorsed a joint declaration which incorporates a comprehensive set of goals (twenty EST goals) under three key broad strategies – Avoid, Shift, and Improve – within a clear time frame (2010-2020).

5. The UMI Conference cum Exhibition is an annual flagship event of MOUD-India. As one of the emerging economies in the world, India faces a huge challenge in the urban transport sector. The Government of India formulated the National Urban Transport Policy (NUTP) in 2006 with a strong emphasis on moving people rather than vehicles, building capabilities at the state and city levels to address the problems associated with urban transport, and undertaking the task of developing sustainable urban transport systems. The Jawaharlal Nehru National Urban Renewal Mission (JnNURM), a massive city modernization scheme, was also launched in 2005, envisaging a total investment of over US$20 billion over seven years. In this context, the UMI Conference and Exhibition has been organized since 2008 in order to encourage states and cities to reform their urban transport systems by disseminating information and facilitating exchange of ideas, and recognizing good urban transport initiatives by presenting Urban Mobility Awards to selected best practices.

6. The integrated Conference on Sustainable Mobility was organized with the objectives of reviewing the progress made by Asian countries in achieving the goals under the *Bangkok 2020 Declaration* as well as addressing sustainability issues in urban transport. Furthermore, the conference aimed to contribute towards enhanced regional input to Rio+20 by addressing sustainable transport in the context of moving towards a green economy.

II. Opening Session

7. Welcoming all the participants as well as introducing recent achievements under the NUTP and JnNURM, Mr. Sanjeev Kumar Lohia, Officer on Special Duty (Urban Transport) and Ex-Officio Joint Secretary, MOUD-India, stressed that the most challenging impact of urban growth and rising income levels in Asian developing cities is the mobility crisis. Moreover, even though a significant number of initiatives have been taken up in this region, much is still required to be done in cooperation with various stakeholders in order to build the rapidly urbanizing cities in Asia as livable, clean, energy-efficient, and sustainable as possible.

8. While addressing the importance of the forthcoming UNCSD 2012 (Rio+20) and one of its main themes, a green economy, in the context of sustainable development and poverty eradication, Ms. Chikako Takase, Director of UNCRD, emphasized that the integrated strategy (Avoid-Shift-

Improve) that governs the goals outlined in the *Bangkok 2020 Declaration* has set a clear roadmap for Asian countries and cities towards a more sustainable future. She also remarked that pre- and post-Rio+20 processes offer a significant opportunity not only to address the objectives and goals under the *Bangkok 2020 Declaration*, but also to address EST as an essential element in pursuing a green economy.

9. Bringing the attention of the participants to the UN Decade of Action for Road Safety 2011-2020, Dr. Poonam Khetrapal Singh, Deputy Regional Director of WHO/SEARO, shared with participants that WHO and the UN regional commissions, in cooperation with the UN Road Safety Collaboration and other stakeholders, have prepared a Plan of Action for the Decade. She also underscored that the provision of safe, sustainable, and affordable transport should be a prime objective in the planning and design of transport systems that will stop and reverse the trend that, without action, would lead to the loss of millions of lives on the roads each year.

10. Expressing his appreciation to the Government of India as well as other Asian countries for their support to his country following the Great East Japan Earthquake in March 2011, Mr. Osami Sagisaka, Director General of MOE-Japan, not only encouraged participants to move forward towards the realization of people-friendly and environmentally sustainable transport, but also urged other bilateral and multilateral donor agencies to provide necessary and timely support in further strengthening and expanding the EST initiative in this region and other parts of the world.

11. Delivering the keynote address on the metro rail revolution in India, Dr. E. Sreedharan, Managing Director of Delhi Metro Rail Corporation (DMRC), emphasized that urban rail transit has a definite role to play in addressing the issues of energy efficiency, air pollution, and greenhouse gas (GHG) reduction at the local and global levels. Indeed, the Delhi Metro is the only metro that is credited for emission reduction via the Clean Development Mechanism of the Kyoto Protocol. He further underlined the importance of multi-modal integration for a city-wide urban rail transport network, and specially the fare integration envisaged by MOUD through a National Common Mobility Card, the need for setting up an exemplary public-private partnership (PPP) model for financing, and the support of the central government institutional framework for promoting urban rail transit.

12. In his keynote address, Mr. Robert O'Keefe, Vice President of the Health Effects Institute (HEI) and Chairman of CAI-Asia, underscored that in many Asian countries the ambient levels of particulate matter (PM) exceed current WHO air quality guidelines, resulting in around 795,000 premature deaths in Asian cities caused by air pollution. He also underscored that excessive motorization and non-walkable environments have led to a series of negative chain effect, such as sedentary lifestyles, obesity, an increase in cardiovascular disease, and growing susceptibility to air pollution. He concluded that in both the developed and developing world, reducing air pollution will certainly extend lives, and sustainable transport policy is essential to achieving that goal.

13. Concluding the opening session, Dr. Sudhir Krishna, Secretary for Urban Development, MOUD-India, emphasized that a systematic approach needs to be applied for promoting sustainable urban mobility with various policies and measures, including the improvement of public transport service, introduction of various policies such as parking, advertisement, transit-oriented development, land-use and transport integration, provision of alternative modes to motorized transport, establishment of a dedicated urban transport fund, implementation of various road pricing policies, and higher taxation on private cars.

III. Implementing the Bangkok 2020 Declaration -- Sustainable Transport Goals for 2010-2020: Issues, Opportunities, and Challenges

14. The *Bangkok 2020 Declaration* gives a common understanding of EST based on three key strategies – Avoid, Shift and Improve. Twenty goals have been set out to help frame policies, and the EST Forum provides an important arena for knowledge exchange and learning, leading to implementation and scaling up of actions. Best practices and good examples from the region have been collected and aligned to the delivery of the *Bangkok 2020 Declaration*'s goals to help this process.

15. The *Bangkok 2020 Declaration* and the two major themes of the Rio+20 Summit of implementing the green economy and institutional reform to deliver this are closely associated. Transport is not directly an agenda item but, nonetheless, out of the 600 submissions from various countries, organizations, and civil society as input to the Rio+20 process, 246 submissions highlighted transport as a key issue to be addressed and several Asian countries made specific reference to transport. Indeed, transport is a cross-cutting issue that plays an important role in delivering all eight Millennium Development Goals (MDGs) and is a key enabler for the green economy.

16. Since 2005, there has been a slow process of awareness raising and a new paradigm for EST is emerging. However, due to the natural inertia in the transport sector between the implementation of policies and tangible results, the next ten years will be critical for future success.

17. It is a matter of considerable concern to see that most of the trends across Asia show sustainable modes such as walking and cycling, and the use of public transport are in decline. In most Asian countries, the majority of trips are still made on foot, with cycling and public transport closely following, especially in low-income countries. However as people's incomes rise and motorized transport becomes more affordable, it quickly becomes the mode of choice. Keeping high modal shares of the sustainable modes will take considerable efforts from all governments and a combination of technology, behavioural, and cultural change is required. Identifying the possible tipping points where a step change in behaviour and technology will be crucial for success.

18. Energy and energy security will almost certainly be a key issue over the next ten years. According to IEA, peak oil production from conventional sources has already been reached. As transport relies, and will continue in the main to rely, on fossil fuels for the majority of trips this is of huge importance. Growth in energy use from the freight sector is of particular significance and passenger transport world-wide is also expected to double, and then triple, by 2050. Much of this growth will take place in Asia. The scenarios of the IEA align with the *Bangkok Declaration*'s policy packages of Avoid, Shift and Improve and show that it is possible to keep to the internationally recognized target of limiting the average global temperature rise to below two degrees Celsius above pre-industrial levels. However, this requires substantial deployment of technology and transportation demand management as well as a significant shift to rail and public transport. New infrastructure as well as system optimization and the provision of alternatives to the private car are essential components for this to become a reality.

19. New thinking and streams of funding for financing sustainable transport are also required and there are a growing number of possible innovative sources becoming available. The role of the private sector is well known but other possible sources include how to integrate climate finance, looking at how to manage energy security and monetizing co-benefits from health or improved safety could be ways to fund a more holistic approach to delivering sustainable transport.

20. Increased awareness and capacity building can be achieved via strategic alliances and partnerships with a variety of stakeholders. The example of the multi-stakeholder partnership SLoCaT – a unique association of more than sixty international organizations, financing institutions, and other major agencies, all working on sustainable, low carbon transport is a resource for governments and other transport actors to tap into expertise and knowledge. Making transport sustainable by addressing all three pillars of sustainability – environmental protection, social equity, and financial sustainability – in the first instance will deliver low carbon transport.

21. The key challenges are now to scale the commitments up and to create greater visibility for transport in the international discussion towards Rio+20. The cooperation of regional bodies such as UN/ESCAP, ASEAN, SACEP, and multilateral development banks in implementing the *Bangkok 2020 Declaration* was urged. Asia has a significant challenge: the sheer numbers of people living in the region and the migration trends from rural to urban areas mean that speed will be of the essence if the aspirations of a green economy and present development trends are to converge.

IV. Sustainable Urban Mobility for Better City and Better Life

A. Integrated approach to transport planning in a rapidly urbanizing scenario for Asia

22. Economic development leads to urbanization which affects mobility. It becomes imperative to meet the travel demand of all sections of society, including the socially/economically/physically challenged, and the urban poor. Mobility, accessibility, and affordability should be the key objective of transport planning. Various factors such as land use, safety, mobility, reliability, equity, accessibility, and efficiency of transport network performance should be considered in a transport plan of a city. The focus of a transport plan should be on mobility planning rather than the movement of vehicles. The key challenge is to contain personalized vehicle growth while having a preference for the public transport system. Equity should be considered while providing transport supply. Personalized modes of transport can be contained by congestion pricing while ensuring that an alternative transport system is available. The transport plan should consider the changing energy scenario and latest technological options. The transport plan should include land-use integration, and fine-meshed and well-integrated pedestrian facilities and cycle network. Universal design of the transport network should be adopted, keeping in mind the needs of the urban poor. While preparing the transport plan, people's participation should be encouraged. Transport demand management, including pricing policies, should be applied for containing the growth of personalized modes but, at the same time, an alternate sustainable transport supply should be ensured.

B. Public health and safety as core elements in transport policy, planning, financing, and development

23. The meeting noted the large number of deaths and injuries attributable to road accidents that were occurring in the Asian region. Some estimated figures suggest that more than half a million people are killed annually on the region's roads and millions more are seriously injured. The

numbers are set to rise steeply as the quantity of vehicles is expected to continue to increase sharply over the next twenty years. The UN has declared 2011-2020 as the Decade of Action for Road Safety and the UN agencies, together with multinational collaborators and stakeholders, have prepared a Global Plan of Action for the Decade to provide a guiding document to address road safety issues. The key goal of the Plan is to initially stabilize the number of people affected by road accidents and then reduce the numbers based on forecasted growth. The Plan is expected to save globally about 5 million lives over the ten-year period.

24. The primary approach is to adopt the "safe system" approach which accepts that human error will inevitably mean that road accidents cannot be completely avoided. Thus, the major aim is to develop a road system that can better accommodate human error and ensure that such accidents do not result in serious human injury. The meeting noted that mitigating activities will be conducted at the national and local levels and will support five pillars of action; namely, road safety management, safer roads and mobility, safer vehicles, safer road users, and post-accident response. For better enforcement and implementation of road safety principles, the meeting also recognized the need to shift the major share of responsibility from road users to the designers of the road system, road managers, automotive industry, enforcement agencies, policymakers, and legislative bodies, while making individual road users responsible for abiding by laws and regulations.

25. Transport also has a major impact on public health. Road accidents already rank fifth highest in terms of their impact on health and impose high costs on the health sector. In addition, air pollution attributable to road vehicles is a major cause of premature deaths each year due to their adverse impact on urban outdoor air quality. The ambient levels of PM in most of the Asian cities exceed current WHO Air Quality Guidelines. Given the large number of people living within close proximity of major roads, exposure to primary traffic-generated pollutants is likely to be of public health concern, and therefore deserve adequate attention be given by policymakers, citizens, NGOs, and other key stakeholders. With increasing motorization, more people are affected by illnesses derived from physical inactivity and obesity. There is considerable evidence which demonstrates that 30 minutes a day or 150 minutes a week of moderate physical activity reduces mortality. Strong awareness, coupled with concrete sustainable transport measures and solutions, could contribute to a safer and healthier future in Asia.

26. The development community provides considerable assistance and support to the road sector. The multilateral development banks (MDBs) provide in excess of US$30 billion annually to support the development of transport in the Asian-Pacific region and bilateral donors also contribute substantial additional funding. With the transport sector comprising approximately 20 per cent of their total operations, MDBs are in a good position to help countries address their road safety issues through the provision of funding as well as encouraging countries to implement needed policies that will enhance the effectiveness of this financial support. ADB has road safety as a core component of its newly adopted sustainable transport initiative while the World Bank provides considerable support through its Global Road Safety Facility. While both these initiatives are important, they need to be strengthened by scaling up the resources committed to road safety and by adopting road safety policies to ensure that adequate attention is paid to road safety. Such action would increase the effectiveness of the Decade of Action for Road Safety by strengthening the programmes undertaken by individual countries and help to achieve balanced sustainable transport.

C. People and environment friendly transport infrastructure in urban design and development

27. Many cities are currently in the process of investing a considerable amount of resources into road-related projects. These projects serve mainly the personal automobile user, while disadvantaging the non-motorized user. Cities are designing their streets using old geometric design guidelines. The current process does not consist of a stakeholder dialogue or review process.

28. There is a lack of awareness on the benefits of parking management and transportation demand management. Further, in terms of management concerns, the main reason why parking management or pricing needs to be implemented is due to the fact that a valuable amount of land is being lost for parking.

29. Cities planning to implement mass transit systems such as Bus Rapid Transit (BRT) require guidance regarding the kind of buses and the technology best suited for the system. It is suggested to the cities that instead of concentrating on bus specification and technology, they should focus on the need of the users. Cities aiming to implement a BRT system have to note that the success of the system depends on providing a level of service that replicates the metro rail system experience while riding the bus and that it can be sold to public as a "branded product". Technology has to serve the need of the commuters rather than the other way around. Fare box revenues must be supplemented by non-fare box revenues.

30. The feeder systems to the mass transit systems need to be given importance like the trunk routes. Using Intelligent Transport Systems (ITS) such as off-board ticketing and informational dispersal through ITS will enable a wider usage of the feeder services. Further, another important aspect for having a good integration between the feeder services and the trunk lines is that they have to be institutionally integrated.

D. Modal integration and modal share development to break the current motorization trend

31. Transport system quality (speed, reliability, convenience, comfort, and affordability) is significantly affected by the degree of integration between institutions, planning, transport and land use, infrastructure, user information, and payment systems. This integration is particularly important for creating a multi-modal transport system which avoids automobile dependency.

32. Some Asian countries, including India and Korea, are making significant progress towards establishing national goals, objectives, and institutional reforms to support integrated transport planning. Some cities have started to offer high quality, door-to-door, non-automobile travel options. Most Asian cities are implementing some policies and programmes intended to improve integration.

33. However, most cities could do much more to create truly integrated, multi-modal transport systems. Institutions and planning activities can be better coordinated. Walkability and cycling can be significantly improved to provide local access and connections between modes. Public transit networks can have better integration between routes, schedules, fares, and user information. Intermodal terminals could have better designs and maintenance in order to make public transit attractive and attract affluent travellers who have the option of driving.

34. This indicates that there are many opportunities to significantly improve overall transport system efficiency and service quality through better integration at all levels. Information sharing and technical transfer can identify specific reforms to make this possible.

E. Sustainable management of two- and three-wheelers in Asia

35. In many Asian cities, rapid urbanization and motorization are greatly influenced by the rise of motorized two-wheelers in urban traffic and the ubiquitous three-wheelers serving as a para-transit mode. In some secondary and smaller cities, three-wheelers serve as the main mode of public transportation. So far, not enough policies and support from both national and local governments have been put in place to manage operations and reduce emissions.

36. There is a need to implement a comprehensive institutional and regulatory framework for two- and three-wheelers that can involve several elements such as, in particular, urban planning and transport demand management, emissions standards and vehicle technology, cleaner fuels, and inspection and maintenance. Many cities have been implementing traffic schemes such as banning motorized two-wheelers in city centres and odd-even schemes for three-wheeler operations. Technologies also exist to make motorcycle emissions as clean as the cleanest gasoline engines. The use of alternative fuels and electric motorcycles and three-wheelers can also play an important role in reducing pollutant and GHG emissions of two- and three-wheelers. Several countries are supporting and facilitating the introduction of electric two- and three-wheelers. A few countries, including Viet Nam, is implementing a comprehensive inspection and maintenance scheme. An emerging trend is the institutionalization of fuel economy standards. Countries can also consider replacing gross polluting vehicles, particularly two-stroke three-wheelers.

37. Financing is an important element to facilitate the adoption of cleaner technologies for motorized and non-motorized three-wheelers. The establishment of a revolving micro-financing scheme and fund can enable the replacement of two-stroke tricycles such as those being adopted in Metro Manila.

38. The meeting recognized the need for strengthening and harmonizing emission and safety standards for two- and three-wheelers on a regional basis.

F. Making every Asian city pedestrian and bicycle friendly for social equity

39. Non-motorized transport (NMT) is environment and health friendly and encouraging its use would be necessary to achieve the goals set by the *Bangkok 2020 Declaration*. The concerns of NMT regarding safety and receiving due share need to be addressed by segregating its right of way, coupled with supporting infrastructure such as safe and dedicated parking places. Priority is to be given to the construction of footpaths and cycle tracks as part of the design and construction of roads. There is a need to protect NMT infrastructures against encroachment through strict enforcement and community participation measures. Cycling is currently regarded as a poor man's means of transport. Initiatives such as cycle-sharing are necessary to improve its brand image and make it a fashion statement.

40. All cities need to encourage walking and cycling and to design cities that reduce mobility and increase accessibility. This approach needs to look at a basket of solutions. There is a need to restrain car and motorized two-wheeler transport, and instead serve sustainable modes in the most optimal way.

41. Present incentives encouraging unrestrained car use such as direct and hidden fiscal subsidies and car-centric road infrastructure need to be reformed to achieve greater social equity. Restraint strategies include parking fees, higher taxes, road and congestion pricing, traffic management, among others. The introduction of paying for parking can be an important first generation of measures. Small cities and towns with fewer cars have good opportunities to implement measures to avoid excessive automobile dependence.

42. International and national bodies are encouraged to provide support to local initiatives for the improvement of sustainable modes of transport, making them more comfortable and attractive and an effective alternative for car use. These initiatives should also be scaled up to comprehensive policies. Complete door-to-door journeys should be able to be made by walking and cycling and the provision of safe infrastructure and facilities is important. Bike sharing can tap the latent demand for cycling and is an opportunity for including the private sector.

43. Compact and dense city planning and design, that keep the majority of urban trips within walking and cycling distances, help make these modes attractive.

44. Improved public transport, para-transit, walking, and cycling are also the most important strategies for restraining growth in motorized two-wheelers, as they are often the first motorized vehicle people purchase. Modern bicycles are becoming easier to use and e-bikes can provide advantages as fully motorized two-wheelers for longer and more demanding trips. Such affordable alternatives can influence the very sensitive segment of motorized two-wheelers.

G. Intelligent Transport Systems (ITS) – an option for smarter, low carbon, energy/fuel efficient, and socially inclusive transport

45. ITS empower actors in the transportation system towards seamless and cost-efficient travel – from commuters, to highway and transit network operators, to the actual devices, such as traffic lights – to make better-informed decisions, whether it's choosing which route to take; when to travel; whether to mode-shift (take mass transit instead of driving); how to optimize traffic signals; where to build new roadways; or how to hold providers of transportation services accountable for results.

46. ITS deliver six key classes of benefits: (a) increasing safety, (b) improving operational performance, particularly by reducing congestion, (c) enhancing mobility and convenience, (d) delivering environmental benefits, (e) boosting productivity and expanding economic and employment growth, and (f) providing authentic data for planning and management. ITS also represent an emerging new infrastructure platform, from which a whole host of new products and services are likely to emerge.

47. For future investments in the transport sector both in developed and developing countries, ITS must be a critical component of the "improve" strategies. The implementation and experience by some countries, including Japan, show that it can be safer, more cost efficient and environmentally friendly to manage and sustain existing transport systems through ITS than building new infrastructure.

V. Greening the Freight Operations

48. Green freight is essential for a green economy. In Asia, road freight transport is expected to increase eight-fold between 2000 and 2050. An integrated approach employing avoid (reduce travel), shift (to other modes), and improve (energy efficiency and reduced emissions) strategies is needed, covering technologies, logistics solutions, and modal shift initiatives. Asian governments can facilitate the application of these strategies through policies and regulations, investments in freight infrastructure, and the establishment of national green freight programmes, which can build on existing programmes such as US SmartWay.

49. At the Sixth Regional EST Forum, private sector companies, including shippers, freight carriers, third-party logistics providers, and industry associations, announced the "Private Sector Declaration on Green Freight in Asia towards a Green Economy," acknowledging private sector responsibilities and lending support to governments for green freight initiatives and programmes that reduce fuel dependency, and air pollutant and CO_2 emissions while maintaining economic growth.

50. Delegates recommended that national programmes should be established step-by-step, and focus first on raising the awareness of government agencies and stakeholders, expanding the knowledge base through research and studies, investing in infrastructure for efficient freight movement, and improving coordination between relevant government agencies through an institutional framework. There is unanimous support for featuring freight transport more prominently in future EST Forums. A recommendation is to consider developing a regional agreement or convention to collectively address freight issues under the framework of the Regional EST Forum.

VI. Rail Development as an Efficient Mass Transit Option for Asia

51. Passenger rail systems (high-speed, regional rail, light rail, and metro) provide highly energy-efficient, clean, potentially very low carbon passenger transport. Freight rail provides similarly energy-efficient transport for those commodities and markets it serves, and with advanced technologies such as hybrid diesel or electric traction can be very low emission. It is important that electricity generation be moved toward low carbon fuels in order to maximize the GHG benefits of rail.

52. There are still substantial unexploited opportunities for rail systems in virtually all countries around Asia. As evidenced by systems in Europe, very high-speed (~350 km/hr) rail can provide nearly complete substitution for air travel for distances up to 500 km, and significant market shares up to 1,000 km. Linked to systems, including extensive medium-high speed rail (<200 km/hr), and regional rail segments can provide an interconnected, unified system to efficiently provide a national transport service. Regional rail systems are particularly under-developed in many countries and can be used as the basis for transit-oriented regional development.

53. For urban travel, metros (underground and elevated) can provide a "backbone" with rapid, high density service, but given their cost these should be focused on dense, high travel corridors. Light rail and bus systems can be used as feeder services, linking most neighbourhoods to the metro system. The efficiency of metro construction has improved considerably in some Asian countries, helping to cut costs.

54. Policies should be designed to balance rail service quality and costs with rail access to all income groups, and ensure the widest possible mobility benefits.

55. Freight rail systems need to be expanded in many countries, with better intermodal facilities. Investments in freight rail can be highly cost-effective, with important benefits in terms of reducing freight traffic on roads.

VII. Sub-urban and Regional Connectivity as Pro-poor Growth Strategy

56. The *Bangkok 2020 Declaration* clearly identifies the rising problem of transport for the poor, both in urban and rural areas in developing countries. The inability of urban and rural poor to access jobs and basic services such as health and education has been noted to be a major hindrance to economic growth and the achievement of the MDGs. Recognizing this critical issue, the *Bangkok 2020 Declaration* identifies Social Equity in transport, under Goal 17, as an important goal to be achieved by 2020 in the Asian region.

57. Increasingly, urban areas are becoming the major drivers of job creation and economic growth. However, this growth is bringing with it a significant increase in the population of urban poor, who often find themselves living in peripheral urban areas, away from the core parts of the city. Social inclusiveness and quality of life for all is a key aspect of a green economy, and it is critical that land-use policies as well as transportation investments take into account the mobility needs of the urban poor, so that job opportunities and economic growth are equitable.

58. Promoting sustainable low carbon transport in cities can help realize both the above opportunities. Currently, the urban poor living in Asian cities is the largest users of sustainable transport modes such as walking, cycling, and buses. It is critical that these modes are promoted so that the poor have affordable access to jobs, and the urban economy is socially inclusive for the urban poor in terms of access to jobs and markets. It is often seen that as urban land prices rise, the urban poor are pushed to the periphery, and their access to jobs is affected. Thus, promoting equitable land-use policies for all sections of society, which is tied to a high quality sustainable urban transport system, is a key integrated strategy to ensure a socially inclusive and green economy. Increasing the knowledge about accessibility through promoting research is vital to provide a sustainable solution for all.

59. Promoting sustainable businesses in cities, which focus on the triple bottom line (environment, society, and economy), is a key part towards a green economy. Such businesses create jobs and contribute to economic growth, while mitigating impacts on the environment. Promoting social entrepreneurs in the transport sector presents the opportunity to promote sustainable urban transport, which create jobs and ensure social inclusiveness. Examples in this regard include social entrepreneurs in the auto-rickshaw and taxi sector in developing countries, which in addition to improving the quality of transport services, provide employment opportunities for the low-income population. It is also critical to integrate the large informal sector seen in Asian cities, as part of the urban economy, to ensure job creation and social inclusiveness.

60. Sustainable transport as part of the green economy should include pro-poor strategies. Integrated land-use planning that takes into account the housing and mobility needs of the urban poor should be a key part of any strategy to promote a green economy that is socially inclusive for all sections of society. This becomes all the more important given that land is a limited and valuable resource in

urban areas. Following the suggestions of the Avoid-Shift-Improve approach, cities should plan for mixed use, dense, and economically diverse neighbourhoods, so that poor have access to jobs and markets, and are able to be integrated in the economy such as in the form of the informal sector.

61. Often the poorest parts of Asian society are exposed to the impact of climate change. More attention to climate change adaptation into future land-use and urban planning should be an integral part of future policies.

VIII. Innovative Financing for Sustainable Urban Transport

62. Transport investments over the next forty years to 2050 are projected to total US$276 trillion in Asia and US$500 trillion globally, including private and public infrastructure, fuel, and equipment purchases. Transport efficient modes and planning to avoid unnecessary travel through local access offers lower overall capital cost while concentrating investment of vehicles to fewer large units and shifting large capacities of roadway to dedicated mass transit systems. Although there is substantial economic benefit, the lack of planning and long-term investment results in a default to allow the sprawl of cities, inefficient goods manufacturing locations relative to markets, and private vehicles.

63. While policy and planning are at the heart of the solution, innovative, more sophisticated finance is required to address this market failure. While climate change mitigation in other sectors requires new finance sources, transport may be largely addressed by a shift of current finance towards more efficient system-level solutions. While governments wish to avoid public financing obligations, innovation has been demonstrated in the form of PPPs. Public finance covers mainly infrastructure costs and long-term investment while private operators compete to operate most efficiently under service agreements with incentives to optimize. Blends of export finance, multilateral development finance, national finance, local government finance, and private sector finance can provide very effective capital and operating finance solutions.

64. Finance and commitment by government during the construction period is critical for the success of large-scale projects such as rail. Build operate or lease transfer arrangements can allow private investment to supplement public finance over the short term. Land development value capture around transit terminals is also an innovative means of financing transport system finance although land purchase is also sometimes a barrier to system construction. Since development benefits, pollution benefits, social inclusion benefits, and financial benefits are dominant, all costs of transport by the various modes should be included in the pricing of use of each mode.

65. Fuel pricing needs to include the full cost of production as well as pollution costs. Fuel tax, parking charges, and/or road use charges are needed to include the cost of roads for private vehicles in order to achieve a level playing field with public transit systems and the more efficient modes of transport. Instead, fuel subsidies, often a misdirected subsidy attempting to reach lower income groups, end up causing wasteful fuel use by industry and more affluent consumers. Carbon finance, if aligned with development strategies, could be a catalyst for change in transport system development. Global Environment Facility (GEF) transport funding addresses the barriers to more environmentally sustainable transport in urban and freight applications, including land-use design aspects, but GEF finance is dwarfed by the scale of finance required. The degree to which Nationally Appropriate Mitigation Actions (NAMAs) finance being considered under the UN Framework Convention on Climate Change can be directed to the upfront data gathering and planning stages, will determine its strategic impact while in some cases the addition of some small revenue stream is

enough to close a financing package. Having agreed to the *Bangkok 2020 Declaration* as well as recognizing that EST and NAMAs are mutually reinforcing, the EST countries of Asia are bringing forward sustainable transport development projects for consideration by financing agencies. ADB, among others, is pledging to significantly increase the share of finance for more sustainable transport projects. The SLoCaT partnership is proposing to expand this in the form of a global sustainable development goal and initiative to be responded to by the multilateral development banks.

IX. The Way Forward ~ EST for a Green Economy Transition in Asia

66. The EST Forum, from its establishment in 2005, has emphasized the potential of an approach which actively integrates environmental, social, and economical sustainability; which will enable the EST Forum to make a significant contribution in realizing the vision of the Rio+20: realizing a sustainable green economy that protects the health of the environment while supporting achievement of the MDGs through growth in income, decent work, and poverty eradication. Participants emphasized the equity dimension of sustainable transport and linked to that the importance of non-motorized transport and public transport.

67. The transport sector is of particular relevance to the Green Economy and Sustainable Development and Poverty Eradication (GESDPE) theme of the Rio+20 conference because of the wide ranging environmental, economic, and social development benefits of a green economy-inspired development of the transport sector. Promoting transport based on the green economy concept will enable cities and countries to leapfrog towards a sustainable path, rather than repeating the same mistakes made earlier by industrialized countries.

68. The strategic approaches and goals outlined in the *Bangkok 2020 Declaration* set a clear roadmap for Asian countries and cities for a more sustainable future. Presentations by the EST Forum countries on implementing the *Bangkok 2020 Declaration* and its twenty goals indicated that various Asian countries have started re-orienting their transport sector towards the green economy concept.

69. Participants underscored the need of sustainable transport being fully reflected in the discussions and outcomes of the Rio+20 conference, including the adoption of a Sustainable Development Goal on Sustainable Transport. This will enable the transport sector in EST member countries to make a significant contribution to GSEDPE; and stimulate these countries to put in place comprehensive policy and effective financing frameworks to catalyse the implementation of GESDPE transport infrastructure and services at a speed that can prevent the rapidly growing cities in emerging and developing economies from resulting in increasingly unsustainable transport systems.

70. The participants recognized the symbiotic relationship between EST and green economy. The implementation of EST policies relevant to the green economy delivers environmental benefits, including reduced GHG emissions, improved energy efficiency, as well as socially inclusive transport and green employment.

71. Transitioning towards a green economy should include: (a) shifting transport financing priorities towards public transport and NMT; (b) promoting investment in green transport technologies; (c) building safe and clean transport networks in support of social equity and poverty alleviation; (d) fostering effective collaboration and partnerships among the public sector, business, and civil society

in support of green transport; (e) establishing supportive institutional frameworks, and (f) building a robust transport data and information base.

72. In this regard, the participants recognized that the Rio+20 process offers a significant opportunity to address the objectives and goals under the *Bangkok 2020 Declaration*, and thereby provides a unique opportunity to contribute towards the realization of a green economy. The United Nations Conference on Sustainable Development (UNCSD), also known as Rio+20, to be held in Rio de Janeiro, Brazil, in June 2012, will focus on two themes: (a) green economy in the context of sustainable development and poverty eradication; and (b) institutional framework for sustainable development.

73. On behalf of the meeting participants, the delegates of Japan requested the Ministry of Urban Development of Government of India to submit the Chair's Summary to the UNCSD Secretariat as an input to the Rio+20 process.

X. Valedictory and Closing Session

74. Making a joint announcement, on behalf of the Ministry of Housing and Environment (MHE) and Ministry of Transport and Communications (MORC) of the Republic of Maldives, for hosting the Seventh Regional EST Forum in Asia in 2012, the Deputy Minister of Transport and Communications, Mr. Faruhath Ali, mentioned that the Maldives was aiming to be a carbon neutral country in future. The meeting welcomed the official announcement made by the Republic of Maldives.

75. The representatives of private sector companies, including shippers, freight carriers, third-party logistics providers, and industry associations, announced the *Private Sector Declaration on Green Freight in Asia towards a Green Economy*, in support of the sustainable transport goals under the *Bangkok 2020 Declaration.* While supporting the implementation of green freight programmes and initiatives throughout Asia with a vision to helping countries reduce fossil fuel dependency, improve air quality, and minimize CO_2 emissions that contribute to climate change while maintaining economic growth, they called on government agencies, international bodies, development banks, and other relevant stakeholders to collaborate with the private sector to green the freight sector in Asia. They further invited shippers, carriers, and third-party logistics providers to sign the open Declaration.

76. Expressing deep appreciation to the Ministry of Urban Development of Government of India, WHO, and MOE-Japan, for successfully co-organizing the Forum, Ms. Chikako Takase, Director of UNCRD, urged all international organizations, bilateral and multilateral donor agencies, including development banks, to provide necessary technical and financial assistance to developing countries in implementing the *Bangkok 2020 Declaration.* Underscoring the importance of transitioning to a green economy in the context of sustainable development and poverty eradication, she encouraged the international community and stakeholders to enrich their discussions in the Rio+20 process in support of sustainable transport and, in particular, encouraged the participating countries to bring the outcome of the Conference to the debate at Rio+20 process. She welcomed the decision of the Government of the Republic of Maldives to host the Seventh Regional EST Forum in 2012, and highlighted that the Seventh Forum should address the specific transport issues and challenges faced by Small Island Developing States (SIDS). She also encouraged the Ministry of Urban Development of the Government of India to submit the

outcome of the Conference to the UNCSD Secretariat as an input to the Rio+20 process, as requested by the Conference.

77. With the objective of creating a common protocol for fare integration and collection, as well parking and toll across the country and to provide the commuter with a seamless, efficient, and hassle-free travel experience across India, the Union Minister for Urban Development in India, Mr. Kamal Nath, launched the National Common Mobility Card (NCMC), by the name 'More', signifying the national bird "Peacock". Seamless connectivity across multiple modes of transportation will increase the popularity and acceptability of public transport nationally and make public transport more appealing to the end user. The Ministry of Urban Development, under the NUTP, envisages a single ticketing system over not only all modes of public transport in India, but also for parking and toll. For this purpose, it is spearheading a national programme of inter-operable Automatic Fare Collection (AFC) systems. A single CMC card can be used across cities and different modes of transport. The implementation of 'More' will be partly funded by the central government under the JnNURM scheme covering the buses sanctioned under the scheme. It is hoped that NCMC would benefit public transport organizations by significantly increasing overall efficiency; providing control and better management of tariff structure; reducing cash handling and hence lesser pilferage and fraud; and better planning based on passenger statistics.

78. In order to promote sustainable urban transport in India, the Union Minister also honoured exemplary work shown by different state organizations and presented Awards for Excellence in Urban Transport. The awards are given each year by the Ministry of Urban Development of the Government of India based on the recommendations made by a high powered committee from among the nominations received. The awardees for 2011 include: (a) Karnataka State Road Transport Corporation for inclusive development and introduction of the Modern City Bus Service in Tumkur; (b) Mumbai Area Traffic Control System was awarded for the Commendable Emerging Initiatives Category under Best Intelligent Traffic Control System; (c) Pune Commissionerate of Police as runners up in the category of Best Intelligent Transport System Project; (d) Ahmedabad Municipal Corporation for the best project under Best Intelligent Transport System Project; (e) Delhi Integrated Multimodal Transit System Ltd for the commendable Emerging New Initiative under the category PPP initiative in Urban Transport; (f) Bhopal Municipal Corporation for the best project under the category PPP initiative in Urban Transport; (g) Pune Commissionerate of Police and Bangalore Traffic Police as joint winners for New Initiative in Traffic Engineering and Management; (h) Delhi Metro Rail Corporation for best Clean Development Mechanism (CDM) Project for modal shift; and (i) Graduates Welfare Association, Fazilka for their project of Fazilka Ecocabs dial-a-rickshaw under the category of best NMT project.

79. Delivering the valedictory address, the Union Minister for Urban Development in India, Mr. Kamal Nath, stated that India was preparing for a massive urban transformation. The new growth story in India is about the growth of cities as more than half of the global population reside in cities. As India with 1.2 billion people begins to urbanize rapidly, with a young mobile population – as over 30 per cent are in cities already – urban renewal and development has to become the policy priority of the Government of India. As the urban population contributes to more than 60 per cent of the gross domestic product (GDP) which is expected to reach 70 per cent soon, India is committed to building cities of hope that are liveable, clean, energy efficient, and sustainable. While expressing concern over growing motorization, which is causing more pollution, energy use, and high road fatalities and injuries, he urged for a concrete blueprint of planning and

implementation to prevent an irreversible trend towards unsustainable cities. He further emphasized the need to include the poor in the urban and transportation planning in order to minimize the magnitude of social and economic impacts of pollution and climate change in cities. While sharing the financing need for India's urban transport sector – more than US$20 billion per year for the next twenty years – he emphasized the need to focus on innovative fiscal policies such as land monetization along high capacity mass transit corridors, transport tax and parking reforms (linking parking charges to the value of the land), and other tax reforms to meet the growing investment demand. The NUTP of India focuses on the mobility needs of the people, equity, integrated land-use and transport planning, cycling, and walking. In order to facilitate public transport in mega-cities on high demand corridors, the Ministry has taken up metro rail projects in several major cities of India with a model of 50-50 ownership of and cost sharing between the central and state government. Several BRT projects in major Indian cities have also been taken up under JnNURM. Along with the 12th Five-Year Plan, India is also finalizing the National Habitat Standards (NHS) to guide investment and planning of urban transport and doing benchmarking of urban transport in various cities as per the Standard Service-Level Benchmarks adopted by the Ministry in 2009. The Union Minister finally recognized the integrated Conference as a meaningful collaboration between UMI 2011 and the Regional EST Forum to benefit the decision makers and government representatives from EST countries, city managers, researchers, experts, planners, engineers, architects, entrepreneurs, manufacturers and suppliers of various urban transport technologies, and students in terms of experience and knowledge sharing and networking.