

UPDATED DRAFT RESULTS FRAMEWORK ON SUSTAINABLE TRANSPORT¹

EXECUTIVE SUMMARY

1. The Results Framework on Sustainable Transport describes the possible contribution of sustainable transport to the realisation of the post-2015 Development Agenda that is currently being discussed by a special Open Working Group of the United Nations General Assembly. This draft of the Results Framework takes into account the outcome of the 7th Open Working Group session on Sustainable Development Goals, which took place in New York 6-10 January 2014.² This is a “living” document that will be updated from time to time up to September 2015 when the UN General Assembly is expected to make a final decision on the post-2015 development framework. The next update of the Results Framework is scheduled for mid-March after the co-chairs of the OWG have made public their stocktaking report and initial framework of SDGs and targets.³

2. With the global population set to increase by one quarter by 2030, increasing urbanisation and continued occurrence of rural and urban poverty, sustainable transport is essential to securing the “The Future We Want” agreed upon in the 2012 Rio+20 Conference on Sustainable Development. Transport infrastructure and services facilitate urban and rural dwellers to participate in economic opportunities and to access essential services such as education and health. When designed to be inclusive, transport is a strong driver of economic growth and poverty reduction. But transport currently has serious negative impacts including road crashes resulting in loss of life and injuries, air pollution that harms human health, noise and greenhouse gas emissions that contribute to global warming.

Table i: Mapping Economic, Social and Environmental Benefits of Transport

Target Areas	Economic	Social				Environmental	
		The Poor	Women and families	Other vulnerable groups	Safety/ security	Air pollution and health	Climate change mitigation
Improving Rural access	√√√	√√√	√√√	√√√	√√	√√	√
Improving Urban access	√√√	√√√	√√√	√√√	√√	√√	√
Improving National access and regional	√√	√	√	√	√	√	√

¹The Results Framework is prepared on behalf of the Partnership on Sustainable, Low Carbon Transport by Phil Sayeg, Paul Starkey and Cornie Huizenga with support from the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and UN-Habitat (with funding provided by the Department for International Development, UK).

²See <http://sustainabledevelopment.un.org/index.php?menu=1679>

³See <http://www.slocat.net/results-framework-sustainable-transport> for latest version of the document.

Target Areas	Economic	Social				Environmental	
		The Poor	Women and families	Other vulnerable groups	Safety/security	Air pollution and health	Climate change mitigation
connectivity							
Improving Road safety	√√√	√√√	√√√	√√√	√√√	√	√
Reducing Air pollution	√√	√√	√√	√√	-	√√√	√√√
Reducing GHG emissions	√√	√√	√√	√√	√	√√	√√√

Note: √√√ is strongly positive; √√ is moderately positive, √ is positive; - is neutral, X is negative

3. Sustainable transport if implemented comprehensively has strong positive economic, social and environmental outcomes as explained in Table i.

4. Sustainable transport measures often have multiple benefits that cut across the economic, social and environmental dimension of sustainable development. The benefits of sustainable transport go far beyond transport, and directly influence national and regional growth, poverty reduction and improvements in health care, education, agricultural production and the well being of vulnerable groups. Sustainable transport can contribute directly to poverty reduction by providing low income people access to jobs and services and by enabling them to conduct their income-earning activities safely, affordably, equitably and conveniently. Transport facilitates equitable access and mobility so that people can participate in economic opportunities, obtain vital services and exercise their democratic rights, promoting good governance and stability. Large and small enterprises benefit from enhanced accessibility through access to a wider pool of labour that can result in expanded production, new investment and creation of new jobs. Reduced road fatalities and serious injuries that lower the burdening on health systems and social support services will free up resources for other health-based priorities. Tackling air pollution will have significant benefits for health and the economy and improve conditions for the urban poor. Reducing greenhouse gas emissions from transport is essential in tackling climate change.

5. The sustainable transport community, which has come together in the Partnership on Sustainable Low Carbon Transport (SLoCaT) considers that large-scale implementation of more sustainable transport is required to comprehensively enhance inclusive access to education and jobs, reduce poverty, enhance economic productivity and provide a healthier environment as called for the in “The Future We Want”.

6. Transport was not part of the Millennium Development Goals (MDGs) but there is wide spread agreement that none of the MDGs could have been achieved without improvements in transport. The crosscutting contribution of transport to sustainable development was emphasised in the Co-Chairs Summary bullet points for the January 2014 7th OWG session, which says about sustainable transport: “It was underlined that transportation is crucial for sustainable development addressing the mobility of goods and persons. The importance of its inclusion in the SDGs was well recognized, with many calling for it to be included at the level of targets under other goals”.

7. Rather than pursue sustainable transport as a standalone Sustainable Development Goal, it is more likely that featuring transport’s key dimensions under other possible Sustainable Development Goals (SDGs) will generate the level of attention and allocation of resources required to accelerate the implementation of sustainable transport. The SLoCaT Partnership will adopt a flexible and pragmatic approach in reaching out to communities representing potential SDGs. In some cases it might be that one the proposed transport related targets could be incorporated (e.g. the proposed Road Safety target would fit well under a Health related SDG) while in others this would a process indicator (e.g. the proposed Fuel Economy process indicator from the proposed Climate Change target could well be used for an Energy related SDG).

8. All the SDGs proposed by the Secretary General’s High Level Panel of Eminent Persons on the Post-2015 Development Framework and the Sustainable Development Solutions Network would benefit in various degrees from intensified action on sustainable transport. However, it appears that sustainable transport related targets would potentially align especially well with:

- A poverty related goal – this could very well be linked with urban, rural and national level access-related transport targets;
- A broad based economic development and jobs related goal – this would benefit from the same urban, rural or national level access and regional connectivity related transport targets, as well as those related to safety, air pollution and climate change;
- An urban development related goal (sustainable cities and human settlements) – this would apply to a possible urban access target as well as targets on air pollution and climate change;
- A rural, agriculture or food security oriented goal – this would apply very well to a possible rural access target;
- A public health oriented goal – a road safety target and an air pollution target would be important contributors; and
- An energy related goal – this would be served well by a climate change related target.

9. The SLoCaT partnership is proposing six main targets to realise the potential of important possible thematic and sectoral SDGs. The targets acknowledge the need for development of additional transport infrastructure and services in areas (urban and rural) where access required for economic and social development has not been sufficiently developed. The targets aim to ensure that development of additional infrastructure and services is done in a more economically, socially and environmentally sustainable manner. At the same time the targets also aim to enhance the economic, social and environmental sustainability of existing transport infrastructure and services.

10. If achieved, the six targets would lead to a structural transformation of the land transport sector by 2030, resulting in greater sustainability of the transport sector and an enhanced contribution to overall economic development, social equity and poverty reduction. They would make the land transport sector fit for the 21st Century. The proposed targets are far-reaching and ambitious but grounded in the latest research and analysis by the leading organisations and initiatives working in relevant fields.

11. The process indicators that will be used to measure the progress towards realizing the proposed 2030 targets are chosen based on a combination of the following considerations: (a) they are a reflection of structural transformation aimed for by the targets; (b) they respond to the “leave no one behind” appeal of the High Level Panel of Eminent Persons on the Post-2015 Development Agenda; and (c) they are being measures already, or they are measurable making use of available, including emerging, technologies.

12. The development of the Results Framework, especially the wording of targets and process indicators is an iterative process. The final formulation of targets and indicators will be guided by the wider choices of possible SDGs and the willingness to integrate transport related targets and indicators. If a Sustainable Energy SDG were to be agreed upon, SLoCaT could for example fine-tune the proposed fuel economy process indicator in order to facilitate its integration.

13. Some of the proposed process indicators are relevant for multiple targets. For example a doubled global travel share for public transport, walking and cycling, used here to measure progress on the climate change target is also relevant for the air pollution and human health target as well as the urban access target.

Table ii: Proposed Sustainable Transport Targets and Selected Process Indicators

Rural access target: Secure universal access by sustainable transport for rural populations by 2030
Process Indicators (2030 compared to 2010 baseline):

- *Proportion of the rural population living within two kilometers of a road, motorable trail or other appropriate infrastructure providing all-year access (desired achievement:100% achievement of local access targets, special monitoring the poorest and remotest quintiles).*
- *Proportion of rural population living within 30 minutes' walk of appropriate formal or informal transport services (desired achievement:100% achievement of local access targets, monitoring poorest and remotest quintile).*

Urban access target: Secure universal access by sustainable transport for urban populations by 2030

Process Indicators (2030 compared to 2010 baseline):

- *Mean daily travel time for individuals to reach employment, education, health and community services (desired achievement: less than 90 minutes per day for a return trip. Special monitoring poorest quintile).*
- *Proportion of income spent by urban families on transport to reach employment, education, health and community services (desired achievement: less than 20% of household income for poorest quintile).*

National access and regional connectivity target: Facilitate national inclusion and regional connectivity by sustainable multi-modal freight and passenger services by 2030

Process Indicators (2030 compared to 2010 baseline):

- *Logistics Performance Index for all countries at least 80% of countries to be a rating of 3.5⁴.*
- *Double national long distance passenger mode shares by public transport and ensure half of future growth in regional passenger travel is accommodated by public transport on a global basis by 2030.*

Road safety target: Halve the burden due to global road traffic crashes by halving the number of fatalities and serious injuries by 2030 compared to 2010

Process Indicator (2030 compared to 2010 baseline):

- *Fatalities due to road crashes (desired achievement: by 2030, reduce by half the number of fatalities due to road crashes compared with 2010 baseline of 1.24 million per year).*
- *Serious injuries due to road crashes (desired achievement: by 2030, reduce by half the number of serious injuries due to road crashes compared with 2010 baseline of 12.4 million per year).*

Air pollution and human health target: Increase share of urban population with air quality within WHO limits

Process Indicators (2030 compared to 2010 baseline):

- *PM₁₀ and/or PM_{2.5} emissions from passenger and freight vehicles by 2030 (desired achievement: 70% reduction compared to 2010)⁵*
- *Phase out all transport related fossil fuel subsidies by 2020*

Greenhouse Gas emissions target: Total world transport-related GHG emissions peak no later than 2020 then begin to decline at a 2% per year rate, with 2030 transport-related emissions no higher than 2010 emissions

Process Indicators:

- *Double fuel economy in all new Light Duty Vehicles by 2030, and in all Light Duty Vehicles by 2050 from a base year of 2005.*
- *Travel share of public transport, cycling and walking (desired achievement: double the global share by 2030).*

⁴World Bank (2013) states “Logistics Performance Index overall score reflects perceptions of a country's logistics based on efficiency of customs clearance process, quality of trade- and transport-related infrastructure, ease of arranging competitively priced shipments, quality of logistics services, ability to track and trace consignments, and frequency with which shipments reach the consignee within the scheduled time”. Refer [<http://data.worldbank.org/indicator/LP.LPI.OVRL.XQ>] accessed on 23 January 2014.

⁵ Currently many countries are measuring and regulating PM₁₀ (less than 10 micrometers in diameter) but increasingly this is shifting towards PM_{2.5} (less than 2.5 micrometers in diameter). This is why a process indicator is proposed which can measure PM₁₀, PM_{2.5}, or both.

14. The proposed six targets and associated process indicators are part of a more comprehensive Results Framework on Sustainable Transport, which contains a more comprehensive set of process indicators that can also be used for measuring progress in the implementation of the targets. The Results Framework also contains key implementation and enabling measures needed for the implementation of the proposed targets. The Results Framework represents a consensus in the sustainable transport community on key ingredients to change the growth trajectory of the transport sector towards a more sustainable future.

15. To overcome the risk of fragmentation that could result from placing transport targets under other goals involving other sectors it is important have coordinated monitoring of transport elements of the post-2015 development framework across the SDG areas. This is one of the planned follow-up measures by the SLoCaT Partnership. A clear acknowledgement in the post-2015 framework of the need of horizontal monitoring of crosscutting areas like sustainable transport will be helpful.

16. All six targets and the proposed process indicators are either measurable and verifiable today or will be in the near future using: (i) existing data collation and estimation efforts that are comprehensive; (ii) existing proven data collection methods where data sets are not available for all locations and countries but with effort could be made more comprehensive; and (iii) existing methods enhanced by new technologies such as satellite imaging and meta-data technologies which are used routinely for specific purposes and could be scaled-up quickly.

17. The proposed targets are global targets and it is important to consider how to differentiate target accomplishment between and within countries. Differentiation of the global targets can be on the basis of geographic region, or by individual country circumstance, if necessary. It is proposed that the system of classification follow the existing system of country income and geographic clusters adopted for other SDGs that would likely be based on United Nations' World Development Indicators. Road Safety can be seen an example. Differentiated targets for the reduction of road fatalities and serious injuries have been established for high, middle and low income countries reflecting the need for action as well the impact of previous action. In line with the 'no one is left behind' notion that underpins the post-2015 development agenda it is especially important to assess whether the lowest quintile by income is part of progress made in target accomplishment.

18. The targets proposed in this Results Framework, are ambitious out of necessity. They will require large resources if they are to be implemented successfully by 2030. In many cases this will involve a reallocation of current and planned funding for the development of transport infrastructure and services by local and national governments and by international organisations supporting transport in developing countries. These changes have started but will need to be accelerated to realize the ambitious targets proposed.

19. The SLoCaT Partnership, which represents a broad array of organisations, offers to play a major role in creating the Means of Implementation for the proposed Results Framework on Sustainable Transport. It is launching a special new two-year campaign "TRANSPORT DELIVERS" to communicate the proposed Results Framework and to mobilize financial resources and institutional capacity to implement the Results Framework. The TRANSPORT DELIVERS campaign bundles the existing Voluntary Commitments on sustainable transport made in 2012 and those made on the first anniversary of the Rio+20 conference in June 2013 with a number of new Voluntary Commitments to be announced before or at the SG Climate Summit in September 2014. Together the voluntary commitments represent the collective resolve of the transport sector for concrete action.

TABLE OF CONTENT

Executive summary	1
Table of Content	6
Introduction.....	7
The benefits of action on sustainable transport	7
Mainstreaming Transport to secure The Future We Want	9
The need for a coordinated approach to sustainable transport across SDGs	11
Six Targets to Encourage Sustainable Transport fit for the 21 st century	12
Results Framework	12
Rural access	13
Urban access	16
National Access and Regional Connectivity.....	18
Road Safety	20
Environment and Human Health.....	22
Air Pollution and Human Health	22
Greenhouse Gas Emissions	24
Target Differentiation, Measurement and Verification.....	26
Target Differentiation.....	26
Measurement and Verification	26
Providing the means for implementation	28
Appendix 1: Organisations Consulted	30
Appendix 2: SLoCaT Members Supporting the Results Framework	31

INTRODUCTION

1. The Results Framework on Sustainable Transport, developed by the Partnership on Sustainable, Low Carbon Transport (SLoCaT)⁶ describes the contribution of sustainable transport to the realisation of the post-2015 Development Agenda that is currently being discussed by a special Open Working Group of the United Nations General Assembly. Sustainable transport cuts across many of the areas for which the OWG is currently discussing possible Sustainable Development Goals. This document lays out options for targets on sustainable transport that support these possible SDGs. It provides indicators that can be used over the next 15 years to measure the realisation of the proposed targets. It suggests key implementation and enabling measures, which if realised in a timely manner will help to bring about sustainable transport.
2. This Results Framework is a means through which national governments; international agencies and the transport sector can deliver sustainable transport.

THE BENEFITS OF ACTION ON SUSTAINABLE TRANSPORT

3. With the global population set to increase by one quarter by 2030, increasing urbanisation and continued occurrence of rural and urban poverty, sustainable transport is essential to securing the “The Future We Want” agreed upon in the 2012 Rio+20 Conference on Sustainable Development. Transport touches every person’s daily life. Transport infrastructure and services facilitate urban and rural dwellers to participate in economic opportunities and to access essential services such as education and health. When designed to be inclusive, transport is a strong driver of economic growth and poverty reduction. But transport has serious negative impacts including road crashes resulting in loss of life and injuries, air pollution and noise that harms human health, and greenhouse gas emissions that contribute to global warming.
4. Based on analysis⁷ carried out in support of the development of this Results Framework it is apparent that there are very large costs if no action is taken on transport. Alternatively the global community has the option to take effective action on sustainable transport. Such action can over the next 15 years:
 - Halve the 18million people that will otherwise die in traffic crashes and reduce by 93million the number of people that would be seriously injured;
 - Lessen the toll of 50 million people that would die prematurely due to exposure to ambient air pollution, a considerable part of which is transport related;
 - Reduce the impact of transport on climate change through the greenhouse gases and black carbon it emits, making it more likely that overall GHG emissions will be in line by 2030 with the 2° Celsius scenario recommended by the Intergovernmental Panel on Climate Change to avert dangerous climate change;
 - Substantially lower the negative economic impacts of transport. If no action is taken at least 50trillion dollars, or about 5%of global GDP for the period 2015 - 2030 will be lost because of the

⁶The Partnership on Sustainable Low Carbon Transport (SLoCaT) is a multi-stakeholder partnership of over 80 organizations including UN organizations, multilateral and bilateral development organisations, NGOs and foundations, academia and the business Sector which promotes the integration of sustainable transport in global policies on sustainable development and climate change. See: [www.slocat.net].

⁷See the introductory sections of the respective Results Frameworks on Access, Safety and Environmental Performance of Transport.

negative impacts of congestion, road crashes, air pollution and climate change related extreme weather events. A disproportionate part of this loss will occur in low and middle-income countries, thereby hampering the potential for economic and social development.

5. Taking action on sustainable transport through the provision of environmentally sound and inclusive transport infrastructure and services will also provide hundreds of millions of people, both in rural and urban areas, will universal access to goods, services and markets.

6. Sustainable transport if implemented comprehensively has strong positive economic, social and environmental outcomes as illustrated in Table 1.

Table 1: Mapping Economic, Social and Environmental Benefits of Transport ⁸ Target Areas	Economic	Social				Environmental	
		The Poor	Women and families	Other vulnerable groups	Safety/security	Air pollution and health	Climate change mitigation
Improving Rural access	√√√	√√√	√√√	√√√	√√	√√	√
Improving Urban access	√√√	√√√	√√√	√√√	√√	√√	√
Improving National access and regional connectivity	√√	√	√	√	√	√	√
Improving Road safety	√√√	√√√	√√√	√√√	√√√	√	√
Reducing Air pollution	√√	√√	√√	√√	-	√√√	√√√

Note: √√√ is strongly positive; √√ is moderately positive, √ is positive; - is neutral, X is negative

7. Box 1 shows how sustainable transport measures often have multiple benefits that cut across the economic, social and environmental dimension of sustainable development. The examples provided confirm how investments in sustainable transport may have direct and indirect benefits that justify the funding and contribute to economic growth, poverty reduction and the quality of people's lives.

Box 1: Examples of Multiple Benefits of Sustainable Transport Measures

Rural transport reduces poverty, stimulates growth and improves access to essential community services

Before 2003, people in Bhimsthan Village in the Sindhuli District of Nepal had no access to the road network or bus services. They walked for four hours to reach the district centre, its markets, healthcare and schools. Agricultural produce and farm inputs were carried. Between 2003 and 2006, the District Roads Support Programme organised the construction of a 22km road, using labour-based methods⁹. Women and low-status ethnic groups benefited from employment. Following road construction, bus licenses were issued and 10,000 people now live within half-an-hour's walk (two kilometres) of an all-season road with transport services. 40,000 people have improved access. Day-return trips to the district town including health care facilities are now possible (a key gender issue empowering women). Agricultural production and marketing have increased. Women have better access to maternal healthcare. The project cost USD1.2 million and its economic internal rate of return was 17%. The new road and services contribute to economic growth, agricultural production,

⁸The ratings of welfare benefits (i.e. economic), road safety (under social) and environmental benefits are indicative but reflect the relative, monetised benefits as would be accounted for in an economic evaluation. The benefits to women and families, the poor, and vulnerable groups are a subset of welfare benefits enjoyed by travellers, and counted in the first instance under the 'economic' heading. The ratings of the benefits of these three sub-groups under 'social' are qualitatively assessed based on how these groups are likely to perceive benefits. These benefits are not additional benefits in monetised terms.

⁹ Source: Starkey P, Tumbahangfe A and Sharma S 2013. Building roads and improving livelihoods in Nepal: External review of the District Roads Support Programme (DRSP). Swiss Agency for Development and Cooperation (SDC), Kathmandu, Nepal. 82p. <http://drsp.squarespace.com/storage/DRSP-Review-FinalReport.pdf>

marketing, employment, improved opportunities for women and disadvantaged groups, and better access to hospitals, maternal health services and education.

BRT in Mexico City improves travel for existing and new users with reductions in emissions

Bus rapid transit (BRT) systems with dedicated road lanes; prepaid tickets, and multiple entry/exit doors are more efficient and productive than conventional bus systems. With infrastructure costing USD30 million and vehicles costing USD18 million, the initial BRT corridor of the Mexico City “Insurgentes Metrobús” started operations in 2005¹⁰. Most of its passengers shifted to the BRT from other public transport, but an important 6.4% of the passengers shifted from private cars or taxis. Quicker passenger travel saved two million travel hours a year (saving an estimated USD10.1 million). Associated vehicle operating cost savings of private vehicles (estimated at USD21.5 million) contributed to improved productivity and quality of life. Other benefits included fewer emissions of greenhouse gases (not monetised) and air pollution (estimated at USD23.7 million a year in health benefits). The benefits of the BRT are on-going and are likely to increase with improved connectivity and will contribute towards the economic growth and social equity of Mexico City while improving the environment.

Road pricing reduces unnecessary travel with strong welfare benefits to continuing users plus other co-benefits

The Stockholm congestion pricing system was implemented in 2007¹¹. The primary purpose of the central area congestion tax was to reduce traffic congestion and improve the environmental situation in central Stockholm. A cost-benefit analysis undertaken following the earlier trial showed that if congestion pricing and supporting public transport improvements were to be implemented on a permanent basis they quickly would recover their implementation and whole of life operating costs. This would be achieved through the following socio-economic benefits: shorter travel times (value: Swedish Kroner (SEK) 600 million p.a.), improved traffic safety (SEK 125 million p.a.) and positive effects on health and the environment (SEK 90 million p.a.). This example illustrates the strong co-benefits of a pricing measure that reduces some unnecessary car travel, contributes to a shift to public transport and provides travel time reductions to transport users.

MAINSTREAMING TRANSPORT TO SECURE THE FUTURE WE WANT

8. The sustainable transport community, which has come together in the Partnership on Sustainable Low Carbon Transport (SLoCaT) considers that large-scale implementation of more sustainable transport is required to comprehensively enhance inclusive access to education and jobs, reduce poverty and enhance economic productivity and provide a healthier environment in short, “The Future We Want”.

9. Transport has many dimensions and the policies, strategies, and measures needed to address these dimensions will require an active coordination and cooperation between the transport sector and the constituencies (e.g. health, urban, rural, energy) that are likely to benefit from action on sustainable transport. Transport is a key building block for sustainable development referred to by the Secretary General’s High Level Panel of Eminent Persons on the Post-2015 Development Agenda which emphasised that it is “our vision and our responsibility to end extreme poverty in all its forms in the context of sustainable development and to have in place the building blocks of sustained prosperity for all.”¹²Transport’s key role, due to its crosscutting nature, is confirmed by the “The Future We Want”, that states that transport is “central to sustainable development”.¹³

10. Featuring transport’s key dimensions at the level of targets under other possible Sustainable Development Goals (SDGs) would hopefully generate a higher level of attention and allocation of resources to accelerate the introduction of more sustainable transport infrastructure and services than

¹⁰Source: INE 2008. The benefits and costs of a bus rapid transit system in Mexico City. Instituto Nacional de Ecología (INE), Mexico City, Mexico. Page 44.

¹¹ Source: Transtek (2006) "Cost Benefit Analysis of the Stockholm Trial."

[http://www.stockholmsforsoket.se/upload/Sammanfattningar/English/Cost-benefit analysis of the Stockholm Trial v2.pdf](http://www.stockholmsforsoket.se/upload/Sammanfattningar/English/Cost-benefit%20analysis%20of%20the%20Stockholm%20Trial%20v2.pdf)

¹² “A New Global Partnership: Eradicate Poverty and Transform Economies through Sustainable Development”, <http://www.post2015hlp.org>. Accessed 23 December 2013

¹³ “The Future We Want”, paragraph 132.

in the case of a standalone SDG on transport. Examples of how the six transport targets proposed in this Results Framework could be included under other potential SDGs is set out in Table 2.

Table 2: Proposed Sustainable Transport Targets and their contribution to potential SDGs

Potential SDGs ¹	Transport-related targets	Rationale
<i>End poverty</i>	<ul style="list-style-type: none"> Rural: secure universal access Urban: secure universal access Road Safety: Halve the burden due to global road traffic crashes Air pollution and human health: Increase share of urban population with air quality within WHO limits Air Quality: Reduce the impact of diseases caused by air pollution 	<ul style="list-style-type: none"> Access to jobs, markets, schools provided through sustainable transport is crucial for reduction of rural and urban poverty. Road fatalities and serious injuries can lead to poverty over the course of several generations through lost family income. Air pollution related diseases can lead to earlier death and serious limitation of earning opportunities and high private and social costs for their treatment. Children growing up in polluted environments are especially affected.
<i>Gender equity, human rights</i>	<ul style="list-style-type: none"> Rural: secure universal access Urban: secure universal access Road Safety: Halve the burden due to global road traffic crashes Air pollution and human health: Increase share of urban population with air quality within WHO limits 	<ul style="list-style-type: none"> Sustainable transport can facilitate gender equity and human rights.
<i>Education</i>	<ul style="list-style-type: none"> Rural: secure universal access Urban: secure universal access 	<ul style="list-style-type: none"> Sustainable transport is crucial for providing access to schools both in rural and urban areas.
<i>Health</i>	<ul style="list-style-type: none"> Rural: secure universal access Urban: secure universal access Road Safety: Halve the burden due to global road traffic crashes Air pollution and human health: Increase share of urban population with air quality within WHO limits Air pollution and health: Increase urban population living in cities with air quality within WHO limits 	<ul style="list-style-type: none"> Sustainable transport is crucial for providing access to rural and urban health services and their delivery systems. Improved road safety and reduction of deaths and disability due to transport-related pollution are two key areas where transport is linked to health improvements.
<i>Agriculture and food security</i>	<ul style="list-style-type: none"> Rural: secure universal access Urban: secure universal access National: facilitate national access and regional connectivity 	<ul style="list-style-type: none"> Sustainable transport is crucial for improving agricultural productivity and ensuring food security.
<i>Water and sanitation</i>	<ul style="list-style-type: none"> Rural: secure universal access Urban: secure universal access 	<ul style="list-style-type: none"> Sustainable transport is a key element of improved access to clean water and sanitation and protection of water quality and aquifer recharge capacity.
<i>Sustainable energy</i>	<ul style="list-style-type: none"> Rural: secure universal access Urban: secure universal access National: facilitate national access and regional connectivity Greenhouse Gas Emissions: Total world transport-related GHG emissions peak no later than 2020 then begin to decline at a 2% per year rate and at 2030 transport-related emissions are no higher than 2010 emissions 	<ul style="list-style-type: none"> Sustainable transport facilitates the public and private providers of sustainable energy. Improved national access and regional connectivity supports energy supply chain security. Reduced GHG emissions would result from use of improved use of sustainable energy sources. Sustainable transport counters the trend of fast-rising consumption of non-renewable energy for mobility.
<i>Equitable growth and jobs</i>	<ul style="list-style-type: none"> Rural: secure universal access Urban: secure universal access National: facilitate national access and regional connectivity 	<ul style="list-style-type: none"> Sustainable transport is crucial for equitable growth and job creation. Rural, urban and national access and regional connectivity targets are directly relevant
<i>Natural resources, biodiversity</i>	<ul style="list-style-type: none"> Rural: secure universal access Urban: secure universal access Air pollution and human health: Increase share of urban population 	<ul style="list-style-type: none"> Sustainable transport reduces threats to biodiversity and unsustainable depletion of natural resources and it facilitates access to green spaces and national parks. The reduction of emissions from transport is

	<ul style="list-style-type: none"> with air quality within WHO limits Greenhouse Gas Emissions: Total world transport-related GHG emissions peak no later than 2020 etc. 	necessary to preserve biodiversity.
<i>Governance and institutions</i>	<ul style="list-style-type: none"> Rural: secure universal access Urban: secure universal access 	<ul style="list-style-type: none"> Sustainable transport can facilitate the organisation of and participation in democratic processes.
<i>Stability and peace</i>	<ul style="list-style-type: none"> Rural: secure universal access Urban: secure universal access 	<ul style="list-style-type: none"> Sustainable transport can facilitate stability and peace.
<i>Global enabling environment</i>	<ul style="list-style-type: none"> Rural: secure universal access Urban: secure universal access National: facilitate national access and regional connectivity Greenhouse Gas Emissions: Total world transport-related GHG emissions peak no later than 2020 etc. 	<ul style="list-style-type: none"> Sustainable transport is important in national and international trade and exchanges.
<i>Resilient cities</i>	<ul style="list-style-type: none"> Urban: secure universal access Rural: secure universal access National: facilitate national access and regional connectivity 	<ul style="list-style-type: none"> Sustainable transport is crucial for resilient cities and urban access targets are directly relevant. Due to reliance on rural linkages and connections to the nation so are rural and national access targets
<i>Curb climate change</i>	<ul style="list-style-type: none"> Greenhouse Gas Emissions: Total world transport-related GHG emissions peak no later than 2020 etc. Rural: secure universal access Urban: secure universal access National: Facilitate national access and regional connectivity 	<ul style="list-style-type: none"> Sustainable transport is crucial to reduce transport-related GHG. GHG target Rural, urban and national access and regional connectivity targets are also directly relevant

¹Based on initial suggestions for Sustainable Development Goals of the High Level Panel and the Sustainable Development Solutions Network

11. The benefits of sustainable transport go far beyond transport, and influence national and regional growth, poverty reduction and improvements in health care, education, agricultural production and the well-being of vulnerable groups. Sustainable transport can contribute directly to poverty reduction by providing low income people access to jobs and services and by enabling them to conduct their income-earning activities safely, affordably, equitably and conveniently. Transport facilitates equitable access and mobility so that people can access key services and exercise their democratic rights, promoting good governance and stability. Large and small enterprises benefit from enhanced accessibility through access to a wider pool of labour that can result in expanded production, new investment and creation of new jobs. Reduced road fatalities and serious injuries that lower the burdening on health systems and social support services will free up resources for other health-based priorities. Tackling air pollution and greenhouse gas emissions from transport that harms human health and contributes to climate change will assist in global efforts to facilitate sustainable development.

THE NEED FOR A COORDINATED APPROACH TO SUSTAINABLE TRANSPORT ACROSS SDGS

12. Sustainable Transport has been long been neglected as a sustainable development issue in part because the solutions are in one area (the transport sector) and the benefits are seen in many other sectors. While the benefits of improved road safety, for example, are in improved health and economic outcomes, the solutions lie in the provision of safe, sustainable and affordable transport options. This Results Framework addresses this concern by placing sustainable transport targets under different proposed SDGs.

13. There are risks, however, in dividing transport targets among other goals involving other sectors since these sectors cannot directly implement measures to enhance transport's positive impacts (e.g. improved access) and mitigate its negative impacts (emissions and serious injuries and fatalities). This

risk can be mitigated through institutional coordination and capacity building. It will also be helpful if there is coordinated monitoring of transport elements of the post-2015 development framework across the SDGs. This is one of the planned follow-up measures by the SLoCaT Partnership. A clear acknowledgement of the need of horizontal monitoring of crosscutting issues such as sustainable transport in the post-2015 framework will be helpful.

SIX TARGETS TO ENCOURAGE SUSTAINABLE TRANSPORT FIT FOR THE 21ST CENTURY

14. The SLoCaT partnership is proposing six main targets to realise the potential of others SDGs. The six targets represent collectively the economic, social and environmental dimensions of sustainable land transport. The targets acknowledge the need for development of additional transport infrastructure and services in areas (urban and rural) where access required for economic and social development has not been sufficiently developed. The targets aim to ensure that development of additional infrastructure and services is done in a more economically, socially and environmentally sustainable manner. At the same time the targets also aim to enhance the economic, social and environmental sustainability of existing transport infrastructure and services. If realised they would lead to a structural transformation of the land transport sector by 2030, resulting in greater sustainability of the transport sector and contribute to overall economic development, social equity and poverty reduction. It would make the land transport sector fit for the 21st Century.

15. The proposed targets are far-reaching and ambitious but grounded on the latest research and analysis by the leading organisations and initiatives working in relevant fields. Measurement and verification as discussed later in the document are feasible today, or will become so in the near future, especially if increased funding is available for regular and comprehensive reporting.

16. The proposed targets are:

- *Rural access*: Secure universal access by sustainable transport for rural populations by 2030.
- *Urban access*: Secure universal access by sustainable transport for urban populations by 2030.
- *National access and regional connectivity*: Facilitate national inclusion and regional connectivity by sustainable multi-modal freight and passenger services by 2030.
- *Road safety*: Halve the burden due to global road traffic crashes by halving the number of fatalities and serious injuries by 2030 compared to 2010.
- *Air Pollution and Human Health*: Increase share of urban population living in cities with air quality within WHO limits.
- *Greenhouse Gas Emissions*: Total world transport-related GHG emissions peak no later than 2020 then begin to decline at a 2% per year rate and at 2030 transport-related emissions are no higher than 2010 emissions

RESULTS FRAMEWORK

17. Rather than pursue sustainable transport as a standalone Sustainable Development Goal, it is more likely that featuring transport's key dimensions under other possible Sustainable Development Goals (SDGs) will generate the level of attention and allocation of resources required to accelerate the implementation of sustainable transport. The SLoCaT Partnership will adopt a flexible and pragmatic approach in reaching out to communities representing potential SDGs. In some cases it might be that one the proposed transport related targets could be incorporated (e.g. the proposed Road Safety target would fit well under a Health related SDG) while in others this would a process indicator (e.g. the proposed Fuel Economy process indicator from the proposed Climate Change target could well be used for an Energy related SDG).

18. The ambition levels for the six targets are supported by process indicators, which can also be used for measuring progress in the implementation of the targets. The process indicators that will be used to measure the progress towards realizing the proposed 2030 targets are chosen based on a combination of the following considerations: (a) they are a reflection of structural transformation aimed for by the targets; (b) they respond to the “leave no one behind” appeal of the High Level Panel of Eminent Persons on the Post-2015 Development Agenda; and (c) they are being measures already, or they are measurable making use of available, including emerging, technologies. Some of the proposed process indicators are relevant for multiple targets. For example a doubled global travel share for public transport, walking and cycling, used here to measure progress on the Air Pollution and Human Health Target is also relevant for the climate change target as well as the urban access target.

19. The development of the Results Framework, especially the wording of targets and process indicators is an iterative process. The final formulation of targets and indicators will be guided by the wider choices of possible SDGs and the willingness to integrate transport related targets and indicators. If a Sustainable Energy SDG were to be agreed upon, SLoCaT could for example fine-tune the proposed fuel economy process indicator in order to facilitate its integration.

20. The achievement of the targets requires the realisation of supporting implementation and enabling measures (See Box 2 for a definition of terms used in the Results Framework).

Box 2: Definition of Components of Results Framework on Sustainable Transport

- *Targets*: sub-goal or sub-impact using metrics that are as communicative as possible measurable with a time dimension over which improvements are (to be) achieved. They may be measured at intermediate time periods.
 - *Process indicators*: these measure progress towards achievement of the key dimensions of targets. They are measurable and have a time dimension and can be used to measure intermediate results.
 - *Implementation measures*: these focus on the actions/ implementation measures that are needed for implementation – typically the measures and policies needed to implement the components of a program. Compared to enabling measures they are more readily quantifiable and would have a time dimension. Implementation measures often contribute towards multiple targets.
 - *Enabling measures*: are ‘facilitators’ i.e. the standards, skills, regulatory and legal frameworks, institutional arrangements, and means of engaging stakeholders needed to support delivery of the above. Able to be measured qualitatively. Enabling measures often contribute towards multiple targets.
-

21. The Results Framework outlined in this section is comprehensive, but not exhaustive, in terms of targets, indicators, and measures. It represents a consensus in the sustainable transport community on key ingredients to change the growth trajectory of the transport sector towards a more sustainable future. It is not expected that all the supporting process indicators be reflected in the post-2015 development framework. Those that are recommended for inclusion are written in bold italics. They are summarised as well in the Executive Summary at the beginning of this document. They are chosen based on their importance for realising the SDG they support, the ease of measuring them and their communicative potential.

22. The SLoCaT Partnership has chosen to develop a more comprehensive Results Framework in addition to just the targets and process indicators to foster an internal consensus within the sustainable transport community on how to best realise the contribution of sustainable transport towards sustainable development. It would also provide a comprehensive monitoring framework.

RURAL ACCESS

23. Rural transport is vital for poverty reduction, equitable development and people’s access to services, including healthcare and education. Notwithstanding growing urbanisation, by 2030, three

billion people will be living in rural areas¹⁴. In many countries, rural communities are at risk of being 'left behind' due to their isolation and lack of universal access to transport, employment, markets, education, health facilities and information connectivity.

24. Rural roads connect villages with local towns, markets and services. Rural roads may be very small (perhaps single track). In both industrialised and developing countries, traffic levels on rural roads can be very low, sometimes below 50 vehicle movements a day. Rural roads tend to be the responsibility of decentralised local government authorities (e.g. district level). Inter-urban roads that travel through rural areas have much higher traffic volumes and are not 'rural roads': they tend to be the responsibility of national or provincial authorities (or agencies). While inter-urban roads are important for both rural and urban connectivity, these are mainly constructed for the benefit of the national economy rather than rural interests and they may have some negative impacts on rural communities. It is the lack of adequately maintained rural roads with appropriate transport services that prevent rural residents from accessing markets, jobs and services.

25. Rural roads may be seasonally disrupted, particularly in poorer countries, and transport services are often infrequent and expensive¹⁵. To overcome rural poverty, remote rural settlements need to be connected to local towns (with markets and services) by roads that are passable all the year. Improved access can be often achieved through better maintenance of existing roads. Where appropriate, this should be complemented by the environmentally-sensitive construction of new village access roads that should safeguard and benefit the local people (see Box 1). In the remoter areas, safe footpaths, footbridges and waterways may be required. Local priorities will determine which means of transport are promoted and some countries may include water-based transport. As many rural people depend on passenger and freight services, it is important that rural transport services are affordable, safe, accessible, convenient and appropriate.

26. Better rural road maintenance (and the construction of new roads, where appropriate) needs to be matched by ensuring adequate transport services to reach markets and essential services. Rural transport services are vital for rural economic growth, enhanced agricultural production and greater rural prosperity. In rural areas, travel patterns are often associated with periodic markets and the convenient transport of small quantities of freight is often crucial. Spoiled harvests due to poor access to urban markets discourage enhanced agricultural production. As many rural people depend on passenger and freight services, it is important that these are affordable, safe, accessible, convenient and appropriate.

27. Equitable rural access is a key gender issue. This is because of the crucial importance of women's access to maternal and peri-natal health care. Poor rural access also disproportionately limits girls' access to education and women's access to markets, employment and entrepreneurial opportunities (See Box 1). Improved rural transport services increase the access of women, people with disabilities and disadvantaged groups and enhance their contributions to equitable economic development.

28. Government departments responsible for planning and managing rural access tend to be under-resourced¹⁶ and international efforts to improve rural access remain fragmented. National and international organisations should champion the importance of rural access and work together to improve policy frameworks, knowledge management and data gathering.

¹⁴ UN-DESA estimates 60% of projected 8.3 billion world population will be urban in 2030 and the rural population will be about 3.3 billion then. Source: <http://esa.un.org/unup/CD-ROM/Urban-Rural-Population.htm>

¹⁵Rural transport services indicators: Final Report, August 2013. International Forum for Rural Transport and Development (IFRTD). Available at: http://www.ruraltransport.info/RTSi/resources/project_outputs.php

¹⁶Improving Rural Mobility. World Bank Technical Paper 525.

29. The results framework for rural access is shown in Table 3. Progress on the achievement of the rural access target will be measured by combining Geographic Information Systems (GIS) technologies and transport-related survey data. The existing Rural Access Index¹⁷ (proximity to roads with year-round access) will be complemented by assessments of transport services. Data from sample surveys will be disaggregated for income, gender and disadvantaged groups to monitor trends and ensure ‘no one is left behind’. As the Rural Access Index baseline is very variable (from less than 30% to about 100%), local achievement target levels will need to be set, based on guidelines and realistic investment prospects. The desired achievement will be 100% of these target level by 2030. All process indicators and implementation measures are quantifiable today, with further improved measurement techniques anticipated within three years.

Table 3: Results Framework on Rural Access

Target: Secure universal access by sustainable transport for rural populations by 2030.

Process Indicators (2030 compared to 2010 baseline):

- *Proportion of the rural population living within two kilometers of a road, motorable trail or other appropriate infrastructure providing all-year access (desired achievement:100% achievement of local access targets, monitoring the poorest and remotest quintiles).*
- *Proportion of rural population living within 30 minutes’ walk of appropriate transport services (desired achievement:100% achievement of local access targets, monitoring remotest quintile).*
- Travel time, including walking, from villages to local towns with markets and medical facilities for the poorest rural income quintile (desired achievement:100% achievement of local travel-time targets)

Implementation measures:

1. Ensure existing rural roads are maintained to all-season standards (desired achievement by 2030:100%)
2. Rehabilitate, upgrade or construct appropriate¹⁸infrastructure (rural roads, trails, bridges) to reach isolated communities(desired achievement by 2030:100% achievement of local rural access index targets).
3. Promote and regulate affordable, accessible, effective and appropriate public transport systems suitable for passengers and small freight (desired achievement by 2030:all nations).
4. Develop and implement integrated rural transport and development plans, incorporating pro-poor equitable access (appropriate infrastructure and services), enhanced agricultural marketing mechanisms, job creation and access to services and information (desired achievement by 2030: rural development plans in all nations).
5. Promote appropriate use of intermediate means of transport for short-distance passenger and small freight transport and ensure appropriate enabling infrastructure is available (desired achievement by 2030:all nations).
6. Ensure that all new transport infrastructure and transport services and prioritised ‘at risk’ existing facilities are climate resilient (desired achievement by 2030:100%).

Enabling Measures:

1. Develop national transport programs for sustainable rural transport, build related institutional capacity, and foster sound transport pricing and non-price demand management practices.
2. Build sound institutions, appropriately staffed and resourced with competence in all aspects of rural transport planning.
3. Ensure participatory processes for stakeholder involvement and consultations in the planning and maintenance of rural roads and the planning and regulation of rural transport services.
4. Combine transparent, regulatory planning with efficient service provision to meet realistic demand targets, supported by effective data collection and knowledge management

¹⁷ Rural access index: a key development indicator. <http://www.worldbank.org/transport/transportresults/headline/rural-access/tp-10-final.pdf>

¹⁸This specifically excludes inter-urban roads passing through rural areas

5. Commit appropriate funding (based on local situations) to rural road maintenance and construction.
6. Identify 'rural access' champion organisations to facilitate improved knowledge management and the development and deployment of national and international databases, and associated data gathering, relating to rural access parameters.

URBAN ACCESS

30. In urban areas, many people travel to work daily and require sustainable transport that is affordable and does not take too long, so allowing economic productivity and quality family life. To develop sustainable urban transport requires ensuring appropriate land-use planning, reducing travel requirements, guaranteeing reliable and affordable public transport and providing quality pedestrian infrastructure and dedicated cycle facilities. Poor people in urban areas are often further from services, employment and markets. Better access to jobs, education, and health care improves people's quality of life and helps lift them out of poverty.
31. Over one billion people live with disabilities¹⁹. Accessible urban transport systems that incorporate universal design not only benefit people with disabilities, they also make access in public transit and pedestrian areas easier and more convenient for all travellers.
32. Efficient, equitable and sustainable urban transport systems are diverse as are the travel needs of people. Different modes are promoted for their comparative advantages: walking and cycling for local trips, mass public transit for longer trips, particularly on major corridors, and motorcycles, automobiles and trucks being used when necessary. It is envisaged that the modal share of sustainable transport systems (public transport, cycling and walking) will double globally by 2030. This builds on mobility projections²⁰ by the International Energy Agency and the International Association for Public Transport, as part of the Grow Public Transport Campaign, which show that if we were to double the market share of public transport the number of trips would need to triple and car share would fall. However, the business as usual scenario shows more trips by private vehicles and less public transport. So to double the market share of public transport urban mobility patterns will need radical change.
33. As mentioned modal share has not been used as an indicator for urban access, it is included in this results framework as an indicator for climate change. However, cities may well use the share of sustainable transport modes as an indicator of their achievements in promoting sustainable transport as well as improving urban air quality.
34. Urban transport systems, especially in many cities in the global south will combine transport operating in the formal as well as the informal sector, with the latter continuing to serve as an important source of employment.
35. Urban roads should be designed within hierarchical road and street networks and managed to favour space-efficient modes, with adequate sidewalks, cycle lanes, bus lanes and truck lanes where appropriate, with the more resource-efficient modes and high value trips receiving priority over general automobile travel.
36. Sustainable urban transport (public transit, cycling and walking) requires spatial planning, inter-connected public transport and safe pedestrian infrastructure and cycle-ways allowing equitable access to economic opportunities, green areas and social necessities, with appropriate traffic management.

¹⁹ WHO 2011. World report on disability. World Health Organisation (WHO) and World Bank.
http://whqlibdoc.who.int/publications/2011/9789240685215_eng.pdf?ua=1

²⁰ See <http://growpublictransport.org/the-campaign/urban-mobility-scenarios-by-2025>

37. Improved pricing of transport is needed focusing on private vehicle users so that motorists perceive the full marginal social costs of the congestion and externalities they create. Awareness campaigns can promote appropriate behavioural changes among travellers to favour greater use of sustainable transport modes and active transport. Indiscriminate parking should be curbed recognising the value of street space that should first be allocated to loading zones, bus stops, pedestrian crossings. Awareness campaigns can promote appropriate behavioural changes among travellers to favour greater use of sustainable transport modes and active transport.

38. The results framework for urban access is shown in Table 4. Progress on achieving the urban access target will be measured by combining Geographic Information Systems (GIS) technologies and transport-related survey data. Data from sample surveys will be disaggregated for income, gender and disadvantaged groups to monitor trends and ensure 'no one is left behind'. All process indicators and implementation measures are quantifiable today, with further improved measurement techniques anticipated within three years.

Table 4: Results Framework on Urban Access

Target: Secure universal access by sustainable transport for urban populations by 2030.

Process Indicators (2030 compared to 2010 baseline):

- ***Mean daily travel time for individuals to reach employment, education, health and community services (desired achievement: less than 90 minutes per day for a return trip).***
- ***Proportion of income spent by urban families on transport to reach employment, education, health and community services (desired achievement: less than 20% of household income for poorest quintile).***
- Proportion of households within 500 metres of good quality affordable public transport accessible by dedicated walking and/or cycling facilities (desired achievement: 100%).

Implementation measures:

1. Develop integrated, equitable and accessible public transport systems complemented by 'active transport' facilities (walking and cycling) for all cities over 100,000 people by 2030.
2. Develop hierarchical road and street networks with inclusive 'complete' street design allowing their safe use by cars but also pedestrians, cyclists and public transport, while providing for efficient land use and access for all cities over 100,000 people by 2030.
3. Price transport so that travellers and firms perceive the full social costs of their travel (on average) and on a temporal and spatial basis by 2020, thus facilitating shifts to resource efficient modes such as public transport systems and 'active transport' for people and rail for freight.
4. Adopt Transit Oriented Development Standards to manage development within market area of high capacity public transportation in all cities over 100,000 people by 2020.
5. Implement non-price demand management measures comprehensive traffic and parking management in all cities over 100,000 people by 2020.
6. Ensure that all new transport infrastructure and transport services and prioritised 'at risk' existing facilities are climate resilient.

Enabling Measures:

1. Develop national transport programs for sustainable transport, build related institutional capacity, and foster sound transport pricing and non-price demand management practices, coordinated with land use.
2. Build sound institutions, appropriately staffed and resourced with competence in all aspects of sustainable transport planning, integration with land use, and for traffic management
3. Develop land-use plans integrated with transport facilities and other infrastructure that encourage efficient land utilisation and minimize the need for the movement of goods and persons by motorised transport.
4. Develop policies and standards to promote inclusion of cycle routes and pedestrian facilities as part of all major urban road and traffic management initiatives and new urban developments combined with policies and standards to ensure high quality public transport systems.

5. Ensure participatory processes for stakeholder involvement and consultations in the planning and regulation of integrated transport systems
6. Combine transparent, regulatory planning with efficient service provision to meet realistic demand targets, supported by effective data collection and knowledge management.

NATIONAL ACCESS AND REGIONAL CONNECTIVITY

39. Efficient freight logistics is necessary to support the transport of farm produce to markets as well as the distribution of manufactured goods and other essential supplies within nations. Efficient and sustainable passenger travel between towns and cities is also needed to support national integration. Enhanced cross-border freight logistics and passenger travel is also vital to support efforts on regional economic cooperation. In all cases care needs to be taken to ensure improve transport services are both responsive to market needs and sustainable. Traditionally national transport systems were oriented to internal needs and did not necessarily facilitate efficient cross-border, regional passenger and freight movements.

40. Many nations have historically advantaged road transport operations compared to other modes by subsidising diesel fuel and tolerating aged and polluting truck fleets. While the distortionary effects of these direct and indirect subsidies are well recognised, many governments find these policies difficult to abandon due to their appeal to vested interests. Approximately 40 countries, approximately 20% of all countries surveyed, were assessed by GIZ in 2010/ 2011 as having very high diesel fuel price subsidies²¹. Many billions of dollars are provided in subsidies thereby encouraging unsustainable energy consumption practices that have clear negative effects on national economic and spatial structures.

41. Passenger and freight railways are able to provide competitive services where the corridors are capable of generating sufficient demand and where the haul length tends to be over 300 to 500 km. At these distances, even moderate speed passenger railways travelling can be competitive with airline and road transport. Passenger railways are enjoying renewed interest in different parts of Europe and Asia. Very high-speed rail (VHS) has dramatically changed inter-modal competition, allowing rail to compete directly with air transport on medium distances (e.g. on the Madrid-Sevilla line, rail modal share grew from 19 to 53% after the opening of the VHS line). In many cases this also engenders a decrease in energy consumption, air pollution and CO₂ emissions. Furthermore, cost-efficient and safe quality bus services can deliver competitive connections and serve as backbone of national passenger transport in many countries worldwide. Bulk freight railways and waterways are being upgraded to serve resource industries in all continents.

42. Reliable logistics systems can address food security concerns and assisting in times of emergency relief. Long distance passenger transport services provided by train, buses and private car travel will also benefit from the investments in rail and roads and supporting intra-urban distribution systems.

43. Long distance carriage of containers from production zones to seaports by rail where infrastructure and services are efficient and appropriate can compete with road on price and time and with lower energy use, and fewer fatalities and injuries and emissions than road. Rail freight where possible should be separated from passenger rail traffic for mutual efficiency.

44. In East Asia over half of the logistics cost for goods bound for international markets are between port and hinterland in East Asia.²² A similar situation is likely to exist in other developing regions. Despite improvements in infrastructure, and cross-border procedures, the logistics performance of approximately one third of the countries surveyed by the World Bank's Logistics Performance Index

²¹ GIZ (2011), "International Fuel Prices 2010/ 2011." Seventh Edition. August. Page 64.

²² Asian Development Bank, Japan Bank for International Cooperation & the World Bank (2005) "Connecting East Asia: A New Framework for Infrastructure."

logistics declined from 2009 to 2012²³. Addressing the barriers that constrain efficient transport and trade facilitation, and improving a nation's international competitiveness, require a systematic approach that combines the provision of appropriate transport infrastructure and services with sorting out of unnecessary legal and administrative cross border procedures. Where countries are land-locked it is even more critical they have efficient transport to ensure their economies can enjoy the benefits of regional integration.

45. The results framework for national access and regional connectivity is shown in Table 5. The targets for logistics and for land passenger transport are measurable today as are process indicators and implementation measures.

Table 5: Results Framework on National Access and Regional Connectivity

Target: Facilitate national inclusion and regional connectivity by sustainable multi-modal freight and passenger services by 2030.

Process Indicators (2030 compared to 2010):

- **Logistics Performance Index for all countries at least 80% of countries to be a rating of 3.5²⁴**
- **Double national long distance passenger mode shares by public transport and ensure half of future growth in regional passenger travel is accommodated by public transport on a global basis by 2030.**
- Passenger-kilometre shares by public transport in major national and regional corridors (desired achievement: based on baseline forecasts to be developed, in specific corridors by nation and region).
- Reduce the cost of national and regional bulk freight per tonne-km (desired achievement: 80% of best international practice for relevant commodities, in specific corridors by nation and region).
- Reduce empty freight land transport distance travelled by 50% by 2030.

Implementation measures:

1. Develop high quality rail passenger and freight railways to meet market demands in priority national and regional corridors where the investments are economically justified and environmentally sustainable by 2030.
2. Develop high quality road infrastructure connecting to ports and international gateways to segregate truck traffic from intra-urban and rural arterial road networks where economically justified and environmentally sustainable by 2030.
3. Develop complementary shorter-distance passenger transport and goods distribution systems in urban areas, resource hinterland regions and economic zones by 2030 that reduce exposure of the population to air and noise pollution.
4. Harmonise cross-border customs, immigration, advance warning of shipment arrivals at borders, and sanitary and phytosanitary procedures by 2030.
5. Phase-out all motor vehicle fossil fuel subsidies by 2020.
6. Price transport so that travellers and firms perceive the full social costs of their travel (on average) and on a temporal and spatial basis by 2020, thus facilitating shifts to resource efficient modes.
7. Promote green freight initiatives to improve energy efficiency of supply chains in all nations by 2020 with implementation of best practice in 80% of nations by 2030.

Enabling measures:

1. Build capacity in government in national freight and passenger transport planning by 2020 and develop

²³ World Bank (2013) states "Logistics Performance Index overall score reflects perceptions of a country's logistics based on efficiency of customs clearance process, quality of trade- and transport-related infrastructure, ease of arranging competitively priced shipments, quality of logistics services, ability to track and trace consignments, and frequency with which shipments reach the consignee within the scheduled time". Refer [<http://data.worldbank.org/indicator/LP.LPI.OVRL.XQ>] accessed on 23 January 2014.

²⁴ Of the 156 countries surveyed in 2012, the LPI varied from a low of 1.61 to a high of 4.39. The bottom 100 performing countries had an LPI lower than 3 with an average of 2.5. Only 26 countries or 17% of the total surveyed had an LPI of more than 3.5 (<http://data.worldbank.org/indicator/LP.LPI.OVRL.XQ>)

national freight and passenger transport plans in all countries by 2030.

2. Build capacity for efficient cross border goods and passenger processing.
3. Remove regulatory barriers to entrant of new logistics firms including international firms.
4. Strengthen institutional capacity to monitor compliance of logistics firms and truck operators with operational, safety and environmental standards.
5. Combine transparent, regulatory planning with efficient service provision to meet realistic demand targets, supported by effective data collection and knowledge management.

ROAD SAFETY

46. Globally, the World Health Organisation (WHO) estimates that 1.24 million people died on roads in 2010.²⁵ Half of the traffic deaths occur among motorcyclists (23%), pedestrians (22%), and cyclists (5%), with 32% among car occupants and the remaining 19% among unspecified road users²⁶. Road traffic crashes are also a leading cause of non-fatal injury and disability and premature death predominately impacting the young. Up to 50 million people are injured each year, with permanent disability a frequent outcome. Road traffic crashes are estimated to be the ninth leading cause of death globally and are forecast to rise to become the seventh leading cause of death by 2030²⁷. Road traffic crashes inflict a similar burden of mortality to other communicable diseases, such as tuberculosis²⁸. In some countries, 75% of hospital capacity for treating head trauma is taken up by road crash victims²⁹. Males represent more than 50% of fatalities in all countries and regions in the world reflecting exposure and possibly risk taking.

47. Road crashes are estimated to cost more than US\$1,800 billion or 3% of Gross Domestic Product (GDP) globally with the economic losses in low- and middle-income countries equivalent to 5% of GDP or US\$1,000 billion per year³⁰. Road crash costs in these countries often well exceed the total development aid received, while also diverting valuable health and social support resources from other development priorities. In low- and middle-income countries in particular, the death or serious injury of a family member can lead to direct financial hardship for the family and exclusion from economic, social and education opportunities that counter poverty reduction efforts.

48. Traffic-related fatalities and serious injuries are rising in urban areas due to growth in cities and their vehicle fleet. Research by EMBARQ, a program of the World Resources Institute in Washington, D.C. USA, indicates that globally 40-50% of traffic fatalities occur in urban areas. In the USA up to 73% of fatalities occur in cities. Traffic fatalities in cities in low income nations are typically five times that in cities in high income nations³¹. In many cities the inadequate provision of a safe walking, cycling and driving environment and poor quality public transport exacerbates the risk of being injured or killed. Improvements in road and street design to include adequate footpaths and street crossings as well as good quality public transport can reduce the crash risk by reducing traffic activity and directly reducing crash exposure.

49. The UN Secretary General, Ban Ki-moon, highlighted the need for global action on an unprecedented scale when recommending the need to “reduce the burden of ...road accidents” in his

²⁵WHO (2013) “Global Status Report on Road Safety 2013 – Supporting a Decade of Action,” page 4

²⁶WHO (2013), op. cit. pages 4-6.

²⁷http://www.who.int/healthinfo/global_burden_disease/projections/en/index.html&http://www.who.int/healthinfo/global_burden_disease/en/ accessed 19/12/2013

²⁸Institute for Health Metrics and Evaluation (2013), “The Global Burden of Disease: generating evidence, guiding policy.” Seattle, WA, USA, page 12.

²⁹RAC Foundation (2011) “Saving Lives, Saving Money: The costs and benefits of achieving safe roads” London, UK

³⁰iRAP (2013) “The business case for investment in road safety” London, UK

³¹Holger Dalkmann (2014), “Is Your City Safer by Design.” Presentation made at Transforming Transportation, Washington, January 17.

post 2015 UN General Assembly report³² “A life of dignity for all”. The United Nations earlier launched the Decade of Action for Road Safety (2011-2020) supported by the Global Plan³³ promoting proven cost effective solutions for making roads safer through: (i) road safety management; (ii) safer roads and mobility; (iii) safer vehicles; (iv) safer road users; and (v) improved post-crash response and hospital care.

50. Successful achievement of the SDG target for road safety will save an estimated 100 million fatalities and serious injuries and more than US\$10,000 billion in economic costs between 2010 and 2030³⁴. Secure funding at the required scale is needed to implement the proven road safety actions on a sustained basis to 2030. Building on the ‘Decade of Action for Road Safety’ a results framework for road safety is provided in Table 6. The target, process indicators and implementation measures can all be measured and verified by established methods on a two to three year cycle as currently done for reporting on implementation on the Decade of Action for Road Safety (2011-2020).

Table 6: Results Framework on Road Safety

Target: Halve the burden due to global road traffic crashes by halving the number of fatalities and serious injuries by 2030 compared to 2010.

Process Indicators (2030 compared to 2010 baseline):

- **Fatalities due to road crashes (desired achievement: by 2030, reduce by half the number of fatalities due to road crashes compared with 2010 baseline of 1.24 million per year).**
- **Serious injuries due to road crashes (desired achievement: by 2030, reduce by half the number of serious injuries due to road crashes compared with 2010 baseline of 12.4 million per year).**
- Economic impact due to road crashes (desired achievement: by 2030, reduce by half the economic impact of road crashes compared with 2010 baseline of 3% of GDP per year).

Desired achievement levels by 2030 by country income cluster are:

- **Fatality rates**
 - < 4 per 100,000 population in high-income countries (baseline of 8.7 in 2010)
 - < 7 per 100,000 population in middle-income countries (baseline of 20.1 in 2010)
 - < 12 per 100,000 population in low-income countries (baseline of 18.3 in 2010)
- **Serious injury rates:**
 - < 40 per 100,000 population in high-income countries (baseline of 87 in 2010)
 - < 70 per 100,000 population in middle-income countries (baseline of 201 in 2010)
 - < 120 per 100,000 population in low-income countries (baseline of 183 in 2010)
- **Economic cost of crashes:**
 - < 1% of GDP per year in high-income countries (baseline of 2% in 2010)
 - < 2.5% of GDP per year in middle-income countries (baseline of 5% in 2010)

Implementation measures:

1. Increase the safety of road infrastructure around the world by eliminating 1 and 2 star rated unsafe roads by 2030 as defined by International Road Assessment Program for all road users.
2. Ensure all transport infrastructure designs include non-motorised transport statements explaining how the needs of pedestrians and cyclists have been incorporated into the designs, including the adequacy of road ‘hard shoulders’ and inclusion of sidewalks and cycle lanes where warranted.
3. Build all roads funded by multi-lateral development banks to a minimum 3-star safety levels for all road users, with highway authorities worldwide encouraged to adopt the same minimum safety standards.
4. Increase the proportion of vehicles manufactured each year that meet the minimum safety standards set by the United Nations to 100% from the 2010 figure of approximately two-thirds.

³² United Nations (2013) “A life of dignity for all: accelerating progress towards the Millennium Development Goals and advancing the United Nations development agenda beyond 2015” A/68/202

³³ WHO (2011) “Global Plan for the Decade of Action of Road Safety” Geneva, Switzerland

³⁴ iRAP (2013) “The business case for investment in road safety” London, UK

5. Increase the proportion of countries with comprehensive legislation on 5 key risk factors (speed, distracted driving, drink-driving, the use of motorcycle helmets, seat-belts and child restraints) to 80% by 2030.
6. Increase global front and rear seat-belt wearing rates to over 80% in all countries by 2030 (baseline of 65%).
7. Increase global motorcycle rider and passenger helmet wearing rates to over 80% in all countries by 2030 (baseline of 57%).
8. Develop integrated, equitable and accessible public transport systems complemented by 'active transport' facilities (walking and cycling) for all cities over 100,000 people by 2030.
9. Develop hierarchical road and street networks with inclusive 'complete' street design enhancing conditions for pedestrians, cyclists and public transport, while providing for efficient land use utilisation and access for all cities over 100,000 people by 2030.

Enabling measures:

1. Develop institutional capacity and mechanisms to support and finance the establishment of lead agencies and national road safety strategies including the implementation of the associated action plans.
2. Benchmark the safety of infrastructure and invest >0.1% of GDP in targeted road infrastructure improvements that maximise the return on investment through deaths and serious injuries saved.
3. Create the consumer and industry demand for safer vehicles through the promotion and dissemination of national and/or regional New Car Assessment Programme (NCAP) star ratings for vehicles or equivalent
4. Set best practice road safety legislation and provide sufficient resources for effective enforcement.
5. Increase responsiveness to post-crash emergencies and improve the ability of health and other systems to provide appropriate emergency treatment and longer term rehabilitation for victims.
6. Establish effective crash data systems and analyses along with monitoring and evaluation mechanisms to inform policy and measure progress.
7. Ensure participatory processes for stakeholder involvement and consultations in the planning and regulation of safe roads and associated pedestrian and cycles infrastructure.

ENVIRONMENT AND HUMAN HEALTH

AIR POLLUTION AND HUMAN HEALTH

51. WHO has identified ambient (outdoor) air pollution as one of the top global risk factors for premature death, responsible for more than 3.2 million early deaths in 2010³⁵. Worldwide, urban air pollution is estimated to cause about 9% of the lung cancer deaths, 5% of cardiopulmonary deaths and about 1% of respiratory infection deaths.³⁶ Air pollution is an environmental health problem that affects people worldwide. Transport related air pollution, often representing from 20% to 50% of outdoor air pollution, is often expressed through particulate matter pollution. Middle-income countries disproportionately experience this burden because of their rapid motorisation and their generally less demanding vehicle emissions and fuel quality standards.

52. Air pollution is estimated to have economic losses equivalent to about 2% of GDP³⁷. Health damage may contribute up to 70% of these economic losses³⁸. Other adverse impacts include reduced visibility, material damage, crop losses and soiling. Because the extent and severity of health damage caused by air pollution depends on the extent of human exposure, transport related air pollution is

³⁵Lim, S et al. (2010). A Comparative Risk Assessment of Burden of Disease and Injury Attributable to 67 Risk Factors and Risk Factor Clusters in 21 Regions, 1990–2010: A Systematic Analysis for the Global Burden of Disease Study 2010." *The Lancet* 380, no. 9859 (December 15): pages 2224–60.

³⁶WHO (2013), "Mortality and Burden of Disease of Outdoor Air Pollution." Refer web site [http://www.who.int/gho/phe/outdoor_air_pollution/burden_text/en/index.html] accessed 15 November.

³⁷World Bank (2006), "Vulnerability to Air Pollution in Latin America and the Caribbean Region," Sustainable Development Working Paper No. 28, the World Bank Latin America and the Caribbean Region Environmentally and Socially Sustainable Development Department. Page vii.

³⁸Ibid. Page vii.

primarily an urban issue. Key transport related air pollutant is Particulate Matter (PM); the finer the diameter of the particles the more harmful is the impact on human health. Currently many countries are measuring and regulating PM₁₀ (less than 10 micrometers in diameter) but increasingly this is shifting towards PM_{2.5} (less than 2.5 micrometers in diameter).³⁹ This is why a process indicator is proposed which can measure PM₁₀, PM_{2.5}, or both.

53. Advances in vehicle emission controls can cut air pollution from light and heavy-duty vehicles by almost 70% by 2030 compared to 2010. To realize these technological improvements in vehicle emission levels it is key to reduce sulphur levels in fuel to 50ppm and preferably go to less than 10ppm.

54. In countries with growing affluence the incidence of obesity and heart disease is rising. Providing safe public transport, and making it more attractive for people to walk and cycle leads to increased levels of physical activity and reduced private vehicle use, thereby boosting physical fitness and cutting obesity, both of which are becoming increasingly a problem as motorisation rates are increasing.

55. The proposed results framework for air pollution and human health is provided in Table 7. It is important to address the overall public health performance of a transport system or investment, including levels of air pollution and noise, and promotion of physical activity. The impact of road crashes listed as a separate target is directly linked as well. All these health risks associated with transport, cause a high burden of disease and influence livelihoods, estimates external costs as well as sustainability. This target is proposed to be measured by the number of additional urban residents with air quality within World Health Organisation (WHO) guidelines, the target will soon become measurable by WHO using on ground measurements coupled with satellite imagery to provide baseline measurements and monitor achievement for air pollution and exposed populations⁴⁰.

Table 7: Results Framework – Air Pollution and Human Health

Target: Increase urban population with air quality within WHO limits by an additional 1.5 billion persons by 2030

Process Indicators (2030 compared to 2010):

- ***PM₁₀ and/or PM_{2.5} air pollution from passenger and freight vehicles by 2030 (desired achievement: 70% reduction compared to 2010).***
- ***Phase-out all motor vehicle fossil fuel subsidies by 2020***
- Proportion of urban dwellers engaging in adequate outdoor physical exercise according to WHO

Implementation measures:

1. Implement Euro vehicle emission standards in all countries by 2030 reaching Euro 5 or equivalent vehicle emission standards in the Middle East and Africa and Euro 6 or equivalent in the rest of the world (desired achievement: 100%).
2. Increase the proportion of transportation fuel (gasoline and diesel) that is ultra-low sulphur (50ppm with an ultimate goal of 10ppm or less) by 2030 (desired achievement: 90%).
3. Price transport so that travellers and firms perceive the full social costs of their travel (on average) and on a temporal and spatial basis by 2020, thus facilitating shifts to resource efficient modes.
4. Implement non-price demand management measures, including comprehensive traffic and parking management in all cities over 100,000 people by 2030.
5. Develop integrated, equitable and accessible public transport systems complemented by 'active transport' facilities (walking and cycling) for all cities over 100,000 people by 2030.

³⁹See <http://airnow.gov/index.cfm?action=aqibasics.particle>

⁴⁰ This target is for air pollution as a whole irrespective of the source, which is appropriate for a target under another goal such as public health. The process indicators, implementation and enabling measures set out are specific to transport. These would have to be complemented by process indicators, implementation and enabling measures for stationary and area sources of pollution.

6. Promote the benefits of adequate physical exercise for health and as a mode of transport in all cities (desired achievement: 100% of cities).
7. Increase the proportion of in-use passenger and commercial and freight vehicles are covered by regular Inspection and Maintenance Programs and renewable motor vehicle registration requirements by 2030 (desired achievement: 80% passenger vehicles; 100% commercial and freight vehicles).

Enabling measures:

1. Build sound institutions, appropriately staffed and resourced with competence in all aspects of sustainable transport planning, integration with land use, public transport system planning and operations, urban traffic management, bicycle and pedestrian planning, and minimisation of air quality impacts of transport
2. Develop land-use plans integrated with transport facilities and other infrastructure that encourage efficient land utilisation and minimise the need for the movement of goods and persons by motorised transport.
3. Build technical capacity in air quality management, vehicle inspection, motor vehicle registration systems.
4. Develop comprehensive data bases on in-use vehicles, their age and technology levels, and their emissions characteristics
5. Conduct awareness programs on the benefits of physical exercise
6. Ensure participatory processes for stakeholder involvement and consultations in the regulation and monitoring of air quality.

GREENHOUSE GAS EMISSIONS

56. Transport contributed about one quarter of energy-related global GHG emissions and about one fifth of energy use in 2009.⁴¹ Land transport represents 70% of transport related energy use and GHG emissions. Under a 'Business as Usual' scenario, energy use and GHG emissions are projected to rise by nearly 50% by 2030 and by more than 80% by 2050. Responsible for this rapid growth in transport related GHGs is the projected doubling or even tripling of the current global stock of one billion vehicles by 2050.⁴²

57. While transport activity will need to increase in support of economic and social development it is important to avoid unnecessary movement of goods and persons by motorised transport through better land use planning and logistics planning as well as the use of appropriate Information and Communication Technologies. Travel demand management can also reduce the need for motorised transport. It is important to shift the movement of goods and persons to the most energy efficient mode, which in the case of passenger transport is usually public transport, walking and cycling and in the case of freight transport rail or inland waterways.

58. Energy saving fuel economy improvements that make use of proven existing technologies can provide nearly half of the reduction in transport related GHG emissions needed by 2050⁴³ to contain warming to a maximum 2° rise with the other half coming from 'avoid' or 'shift' related measures. Fuel economy improvements are assessed as being able to achieve a 50% reduction in fuel use per kilometre for new cars by 2030 in line with targets of the Global Fuel Economy Initiative (GFEI) and projections of the International Energy Agency.

⁴¹ International Energy Agency (2011), "Energy Technology Perspectives". Page 423.

⁴² International Energy Agency (2009), "Transport, Energy and CO2: Moving toward Sustainability." Page 451.

⁴³ These energy efficiency measures go beyond the 30% improvement in efficiency of new vehicles in the baseline.

59. Shifts to non-petroleum fuels would also play an important role, particularly after 2030. To spur the introduction of Zero Emission Vehicles (ZEVs), and increase their market share to half of sales of light duty vehicles, requires aggressive policies to introduce them on a wide scale. The focus should be on light weight low speed 2- and 4-wheel vehicles for urban use. Although ZEVs would draw their power from normal electricity production GHG emissions per unit of electricity generated are expected to steadily decline from now until 2050. ZEVs would also contribute to a cut in urban air pollution.

60. In developing a results framework for GHG emissions from transport it is important to realise that there is also a need for the transport sector to adapt to climate change by strengthening the climate resilience of transport infrastructure and services provided to improve urban and rural access.

61. The proposed results framework for GHG emissions from transport is provided in Table 8. By calling out the voluntary emission reduction potential of the transport sector rather than focusing on a cross-sectoral emission reduction target, it seeks to contribute to and inspire the on-going negotiations on a global climate change agreement, not prejudging the outcome of these talks.

62. The aim is for countries and other sector stakeholders to voluntarily manage transport-related emissions so they peak by 2020 and thereafter begin to decline at approximately 2% per annum. By 2050, transport-related emissions⁴⁴ could be approximately 50% below 2010 levels and consistent with a maximum 2° Celsius rise in global temperature by that time. This projection is broadly in line with modelling by the International Energy Agency that indicates compliance with a maximum 2° Celsius rise in temperature requires global transport emissions by 2050 to be at or below 2000 levels. Achievement of such reductions in transport-related emissions would use least-cost strategies aligned with sustainable development.

63. GHGs from transport are monitored and modelled on an on-going basis by the International Energy Agency and others. The process indicators and implementation measures are all measurable today.

Table8: Results Framework Greenhouse Gas Emissions

Target: Total world transport-related GHG emissions peak no later than 2020 then begin to decline at a 2% per year rate and at 2030 transport-related emissions are no higher than 2010 emissions

Process Indicators:

- ***Double fuel economy in all new Light Duty Vehicles by 2030, and in all Light Duty Vehicles by 2050 from a base year of 2005.***
- ***Travel share of public transport, cycling and walking (desired achievement: double the global share by 2030).***
- ***Black carbon emissions from transport by 2030(desired achievement: 60% reduction).***
- **Zero Emission Vehicle share of light-duty 4-wheel and motorised 2-wheel vehicle sales worldwide by 2030 (desired achievement: 20%).**

Implementation measures:

1. Develop integrated, equitable and accessible public transport systems complemented by ‘active transport’ facilities (walking and cycling) for all cities over 100,000 people by 2030.
 2. Price transport so that travellers and firms perceive the full social costs of their travel (on average) and on a temporal and spatial basis by 2020, thus facilitating shifts to resource efficient modes.
 3. Adopt fuel economy policies in all countries by 2020 with increase in new fleet fuel economy of 50% by 2030 compared to 2010.
-

⁴⁴ Emissions from land transport are targeted here but it is clear that aviation and shipping sub-sectors must also reduce emissions.

4. Implement non-price demand management measures, including comprehensive traffic and parking management in all cities over 100,000 people by 2030.
5. Adopt Transit Oriented Development Standards to manage development within market area of high capacity public transportation in all cities over 100,000 people by 2020.
6. Promote green freight initiatives to improve energy efficiency of supply chains in all nations by 2020 with implementation of best practice in 80% of nations by 2030.
7. Ensure participatory processes for stakeholder involvement and consultations in the planning, regulation and monitoring of emissions from transport systems.

Enabling measures:

1. Build Institutional capacity in transport-related climate change mitigation and adaptation linked to urban and regional economic and development planning.
2. Monitor passenger and freight travel activity by mode, trip and user type, including time and cost attributes, service levels and attributes, and traveller demand patterns, to support policy making in all cities and countries, employing emerging information, communication, and mapping technologies.
3. Develop transport specific climate change adaptation action plans at city and national level or ensure that transport is well integrated in economy wide climate change action plans.
4. Remove barriers to introduction and dissemination of new low carbon technologies for vehicles with aim of lowering costs to users.
5. Develop comprehensive data bases on in-use vehicles, their age and technology levels, and their emissions characteristics

TARGET DIFFERENTIATION, MEASUREMENT AND VERIFICATION

TARGET DIFFERENTIATION

64. Differentiation of the global targets will need to be done to ensure their proposer implementation. This can be on the basis of geographic region, or by individual country circumstance, if necessary. It is proposed that the system of classification follow the existing system of country income and geographic clusters adopted for other SDGs that would likely be based on that defined by United Nations' World Development Indicators.

MEASUREMENT AND VERIFICATION

65. All six targets are either measurable and verifiable today or will be in the near future using: (i) existing data collation and estimation efforts that are comprehensive; (ii) existing proven data collection methods but data sets are not available for all locations and countries but with effort could be made more comprehensive; and (iii) using existing methods enhanced by new technologies such as satellite imaging which is done routinely for specific purposes and could be scaled-up quickly. Challenges do exist in scaling-up measurement to be regular and comprehensive but these are financial, institutional or skill related and not technical.

66. It is important to consider differentiation in target accomplishment within countries. In line with the 'no one is left behind' notion it is especially important to assess whether the lowest quintile by income and persons with disabilities are part of progress made in target accomplishment.

67. *Urban and rural access.* Geographical Information System (GIS) techniques that are relatively inexpensive are used increasingly in transport planning and monitoring. Cell phones and GPS monitors provide an increasingly available means of observing travel activity and transport service patterns at a low cost. GIS databases of populations, transport infrastructure and transport movements will be used in the baselines and achievement measurements for both urban and rural access. Household surveys can

be disaggregated for gender and disadvantaged groups and provide a richer source of information on actual travel time, costs and trip behaviour. They tend to be more costly than using GIS alone. There is scope for devising a hybrid approach using both GIS and sample surveys that focus on transport issues.

68. Improved, standardised and more regular surveys implemented by national transport programs should provide more accurate and disaggregated data, to help measure achievements. This will allow the monitoring of the lowest population quintiles by income and remoteness and persons with disabilities to ensure 'no one is left behind'. A useful model is the system of road injury data compilation, standardisation and interpretation coordinated by WHO in support of the United Nations' Decade of Action on Road Safety (as described below). With vigorous effort, representative baseline measurements could be established within three years.

69. Comprehensive measurement of access across all global human settlements will require new approaches combining Meta Data with traditional data sources. A layered approach is envisaged where the marriage of mobile phone data to geo-spatial information would be the minimum basis for acquired information for all human settlements to which other data sources could be joined. The joining up of Meta Data initiatives across sectors is essential and would show the high dependence on health, education and other sectors on transport.

70. The thresholds for rural access and the standards of transport services will be defined at local and national levels to take account of transport demand, the degree of remoteness, and transport types. In many countries intermediate means of transport (e.g., motorcycles and three-wheelers) and water transport should be included in transport assessments, along with para-transit systems, as these can provide vital, appropriate, and sustainable mobility services. The local measurements of access will incorporate common principles, but reflect different local needs and priorities.

71. *National access and regional connectivity.* The targets for logistics and for land passenger transport are measurable today. World Bank's Logistics Performance Index is updated annually and average speeds of cross border passenger services can be monitored from timetables or simple surveys. Process indicators can be measured based on the results of country and transport corridor specific studies taking into account baseline performance and realistic forecasts of what can be desirably be achieved in terms of performance improvement. In many important transport corridors such studies are carried out periodically. Implementation measures are easily monitored.

72. *Road safety.* WHO developed and applies a standardised methodology for systematically collecting road-related injury data in each country, coordinated by a National Data Coordinator. At the country level, knowledgeable experts were sourced each of whom completed a self-administered questionnaire with information on key variables, from which they were required to come to a consensus. Point estimates were made for total fatalities (and the 95% confidence interval estimated) and the distribution of fatalities enumerated for drivers/ passengers of 4-wheeled vehicles; drivers/ passengers of motorised 2 and 3-wheeled vehicles; motorcyclists, pedestrians, cyclists; and other or unspecified road users. This work is supported by a systematic country profiling of related statistics on relevant laws, regulations, vehicle fleets and other key variables. To date, the survey has been undertaken in 2009 and 2011 (for 2010 estimation) and will be progressively carried out every two to three years if funding is available.

73. *Air Pollution and Human Health.* The target metric of urban population living in cities with air quality within WHO guidelines can be measured using on ground measurements coupled with satellite imagery by the World Health Organisation will soon be in a position to provide baseline measurements and monitor achievement for air pollution and exposed populations. Appropriate funding support would be needed. Air pollution from motor vehicles at regional and global level is modelled by the International Energy Agency (IEA), the International Council on Clean Transportation (ICCT) and others using analytical models that include historical and projected data on land transport vehicle fleets, and their fuel, technology and emission characteristics, plus rail, aviation and shipping. The process indicators and implementation measures are all measurable today.

74. *Greenhouse Gas Emissions*. IEA's Statistics Department produces regular data on transport related energy use and GHG emissions for 18 countries and regions, with projections to 2050⁴⁵. This information is based on reported consumption of liquid and other energy sources for transport and other sectors. It is understood that similar data are available for many more individual countries than reported. Modelling of future transport and GHG scenarios is carried out with their Mobility Model.

PROVIDING THE MEANS FOR IMPLEMENTATION

75. The targets proposed in this Results Framework, are ambitious out of necessity. They will require large resources to be implemented successfully by 2030, but a major share of these globally will involve a reallocation of current and planned funding for the development of transport infrastructure and services by local and national governments as well as by international organizations supporting transport in developing countries. These changes have started but will need to be accelerated to realize the ambitious targets proposed. Reallocation of subsidies and more realistic pricing of transport and its impacts, and the manner, in which costs and benefits of transport are evaluated, will help to realize the proposed targets.

76. Such policy changes will help to ensure that currently available and tested sustainable, low carbon transport technologies and policies are adopted. This can result in cost savings of \$50 trillion related to infrastructure, vehicles, and fuel by 2050 based on a recent International Energy Agency study.

77. The SLoCaT Partnership, which represents a broad array of organisations, offers to play a major role in creating the Means of Implementation for the proposed Results Framework on Sustainable Transport. It is launching a special new two-year campaign "TRANSPORT DELIVERS"⁴⁶ to communicate the proposed Results Framework and to mobilise financial resources and institutional capacity to implement the Results Framework.

78. The SLoCaT Partnership took a lead role in the development of voluntary commitments on sustainable transport at the Rio+20 Conference on Sustainable Development in June 2012 including the unprecedented US\$175 billion Voluntary Commitment for more sustainable transport by the world's eight larger Multilateral Development Banks. According to Secretary General Ban Ki-moon this Voluntary Commitment "has helped to make sustainable transport a significant feature of discussions on the post-2015 development agenda". The effectiveness of the SLoCaT Partnership in mobilising change for sustainable development was also highlighted in the recent Stakeholder Forum and Natural Resources Defence Council's first year review of the Rio+20 Voluntary Commitments: "The SLoCaT network is a model for other action networks because of its strategic vision and leadership that resulted in the major commitments on sustainable transportation at Rio+20".

79. The TRANSPORT DELIVERS campaign bundles the existing Voluntary Commitments on sustainable transport made in 2012 and those made on the first anniversary of the Rio+20 conference in June 2013 with a number of new Voluntary Commitments to be announced before or at the SG Climate Summit in September 2014. Together the voluntary commitments represent the collective resolve of the transport sector for concrete action.

80. The combined existing and new additional Voluntary Commitments will further accelerate the implementation of sustainable, low carbon transport. As part of the new Voluntary Commitments a

⁴⁵Divided by OECD and non OECD members and groups: (i) OECD members: Americas with United States also separately reported; Europe; Asia Oceania, Japan; and (ii) Non-OECD: Eastern Europe/ Eurasia; with Russia also separately reported; Asia with China and India separately reported; Middle East; Africa, Latin America with Brazil which is also separately reported.

⁴⁶See <http://www.slocat.net/transport-delivers-campaign>

project preparatory facility of at least US\$100 million for the period 2014-2016 is proposed by the SLoCaT Partnership to be created to ensure that enough good quality projects will be available for financing by the MDB US\$175 billion Voluntary Commitment.

81. By proposing such a large financial package for preparation and implementation of sustainable transport programs it is intended to mobilise diverse stakeholders. These include especially national and local governments, but also bilateral development organisations and non-traditional sources including sovereign wealth and pension funds, and national development banks. Linkages with climate funding will also be explored.

82. The development by national governments of national-level sustainable transport financing facilities, modelled on existing schemes in Brazil, Colombia, India, Mexico, or various OECD countries, could provide co-financing for cities wanting to implement sustainable transport infrastructure or services. Such financing facilities could potentially leverage funding from the MDB US\$ 175 billion Voluntary Commitment as well as from climate finance or from non-traditional funding sources. This supports the original intention of the MDB US\$175 billion Voluntary Commitment; leveraging additional funding was one of the key envisaged impacts in the Joint Statement that launched the MDB Voluntary Commitment in 2012.

83. To ensure that the implementation of sustainable transport can go ahead at the required scale, the TRANSPORT DELIVERS campaign intends to ensure the training of 1 million persons in sustainable transport in the next 10 years. This is a step change in capacity building on sustainable transport and one that will require the active collaboration of the academic sector, transport operators, governments and the private sector. To ensure that predictable financing is available for key parts of the capacity building program, the eight MDBs that are part of the US\$175 billion Voluntary Commitment for more sustainable transport might consider to make 0.25% of their annual lending and non-lending assistance for transport available for capacity building activities.

84. These financial and capacity building voluntary commitments have in common that they are made on behalf of organisations working on sustainable transport in developing and emerging economies. They do not yet include voluntary commitments by countries or cities in the global South. Under the TRANSPORT DELIVERS campaign countries and cities will be invited to commit to more sustainable transport policies by selecting one or more policy actions from a menu of policy options on sustainable transport covering the three main target areas of the SLoCaT Results Framework on Sustainable Transport: improved access; road safety; and environmental performance of transport.

APPENDIX 1: ORGANISATIONS CONSULTED

The preparation of the proposal for a sustainable development goal for transport and draft results framework has involved extensive consultation with the leading groups that have a stake in the dimensions of transport covered by each target as shown in the table below. In the case of road safety, air pollution and health, and GHG emissions, where the leading global stakeholders already had on going programs and coordination mechanisms these were enlisted to actively shape the goal statement and results framework.

Target	Stakeholder
Access (Urban/Rural)	African Association of Public Transport (UATP); Asian Development Bank; Centre for Poverty Analysis, Sri Lanka; Department for International Development (DFID); Despacio, Colombia; Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ); European Institute for Sustainable Transport (EURIST); Institute for Transportation and Development Policy (ITDP); The International Association of Public Transport (UITP); International Forum for Rural Transport and Development (IFRTD); Overseas Development Institute (ODI); Stockholm Environment Institute; Sub-Saharan Africa Transport Policy Program (SSATP); Transport Research Laboratory; UN-Habitat; Victoria Transport Policy Institute (VTPI); the World Bank
National Access and Regional Connectivity	Asian Development Bank, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)
Road Safety	FIA Foundation; International Road Assessment Programme (iRAP); Alan Ross, road safety specialist; the World Bank; World Health Organisation;
Environment and Human Health	FIA Foundation; Clean Air Asia; Partnership on Clean Fuels, Health Effects Institute; International Council on Clean Transportation; International Energy Agency; World Health Organisation; Institute for Transportation and Development Policy (ITDP); Institute of Transportation Studies at UC Davis (ITS-Davis).

APPENDIX 2: SLOCAT MEMBERS SUPPORTING THE RESULTS FRAMEWORK

1. African Development Bank
2. African Transport Policy Program
3. Alliance to Save Energy
4. Asian Development Bank
5. Believe Sustainability
6. CorporaciónAndina de Fomento
7. Cambridge Systematics
8. Center for Clean Air Policy
9. Centre for Environment Planning & Technology
Ahmedabad
10. Center for Science and Environment
11. Center for Sustainable Transport Mexico
12. Center for Transportation and Logistics Studies,
GadjahMada University
13. China Urban Transport Research Centre
14. Civic Exchange
15. Clean Air Asia
16. Clean Air Institute
17. Climate Focus
18. CODATU
19. Despacio
20. Deutsche
GesellschaftfürInternationaleZusammenarbeit (GIZ)
21. Dutch Cycling Embassy
22. Ecofys
23. EMBARQ, The WRI Center for Sustainable Transport
24. Energy Research Center Netherlands
25. European Bank for Reconstruction and Development
26. European Institute for Sustainable Transport
27. European Cyclists' Federation
28. Fia Foundation
29. First African Bicycle Information Organization
30. Fraunhofer- Institute for Systems and Innovation
Research
31. Global Environmental Facility
32. Global Transport Knowledge Partnership
33. Global Urban Development
34. HealthBridge
35. Hong Kong Shanghai Bank
36. Innovation Center for Energy and Transportation
37. Institute for Global Environmental Strategies
38. Institute for Transport Studies
39. Institute for Transport Studies, University of Leeds, UK
40. Institute for Transportation and Development Policy
41. Institute for Urban Transport India
42. Inter-American Development Bank
43. International Association for Public Transport
44. International Council of Local Environmental Initiatives
45. International Energy Agency
46. International Road Assessment Program
47. International Road Federation
48. International Transport Forum
49. International Union for the Conservation of Nature
50. International Union of Railways
51. Korean Transport Institute
52. Ministry of Land Infrastructure Transport and
Tourism, Japan
53. Mobility Magazine
54. National Center for Transportation Studies,
Philippines
55. Nordic Development Fund
56. Renewable Energy and Energy Efficiency Partnership
57. Rockefeller Foundation
58. Society of Indian Automotive Manufacturers
59. Stockholm Environment Institute
60. Sustainable Transport Africa
61. Tehran Urban and Suburban Railway operation
Company
62. The Energy and Resources Institute
63. The European Rail Industry
64. Transport and Environment
65. Transport Research Laboratory
66. Uganda Road Sector Support Initiative
67. United Nations Development Program
68. United Nations Center for Regional Development
69. United Nations Department for Economic and Social
Affairs
70. United Nations Economic Commission for Europe
71. United Nations Economic and Social Commission for
Asia and the Pacific
72. United Nations Economic Commission on Latin
America and the Caribbean
73. United Nations Human Settlements Program
74. University College of London, Department of Civil,
Environmental and Geomatic Engineering
75. University of California, Davis, Institute of Transport
Studies
76. University of Transport and Communication Hanoi
77. University of Twente-ITC
78. VEOLIA Transport/Transdev
79. Victoria Transport Policy Institute
80. Volvo Research and Education Foundations
81. Walk 21
82. World Bank
83. World Business Council for Sustainable Development
84. World Health Organization
85. World Streets
86. Wuppertal Institute for Climate, Environment and
Energy
87. WWF International