



DRAFT Sustainable Development Goal for Sustainable Transport and Associated Results Framework¹

1. With the global population set to increase by one quarter by 2030, and increasing urbanisation,² sustainable transport is essential to securing the “The Future We Want” that aims to eradicate absolute poverty, enable economic transformation and lift people out of poverty, advance social justice and protect the environment³. Transport touches every person’s daily life. Without a vigorous effort to advance sustainable transport a significant portion of the urban and rural poor will be excluded from access to good jobs and a safe and clean environment to the detriment of achieving “The Future We Want”.

2. 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 trauma through loss of life and injuries incurred in road crashes, air pollution that harms human health, noise and greenhouse gas emissions that contribute to global warming.

1. The Cost of inaction

3. Based on analysis⁴ carried out in support of the development of this Results Framework it has become apparent that if no action is taken on transport it is likely that in the next 15 years:

- At least 15 million people will die in traffic accidents and between 300 and 750 million people will be seriously injured;
- 50 million people will die prematurely due to exposure to ambient air pollution;
- Transport will be the largest contributing sector to climate change through the greenhouse gases and black carbon it emits, making it unlikely that overall GHG emissions will be in line in 2030 with the 2° Celsius scenario recommended by the Intergovernmental Panel on Climate Change to avert dangerous climate change;
- At least 50 trillion dollars, or about 5% of global GDP for the period 2015 - 2030 will be lost because of the 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.

¹ This report was prepared by Phil Sayeg, Paul Starkey and Cornie Huizenga. Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH and UN-Habitat (with funding provided by the Department for International Development, UK) are supporting the development of the SLoCaT Results Framework on Sustainable Transport.

²Urbanisation is expected to increase from 50% today to 60% by 2030 with 90% of future urban expansion taking place in the developing world. Refer “Facts and Figures” on [<http://www.un.org/en/sustainablefuture/cities.shtml#facts>] accessed 22 December 2013 and United Nations (2011), “Population Facts 2011/2.” Prepared by Department of Economic and Social Affairs Population Division.

³ Agreed at the United Nations Conference on Sustainable Development, held in Rio de Janeiro, Brazil in June 2012.

⁴ See the introductory sections of the respective Results Frameworks on Access, Safety and Environmental Performance of Transport.

4. At the same time if the current transport paradigm continues to guide transport policies and investment, hundreds of millions of people, both in urban and rural areas, will continue to lack proper access to goods, services and markets.
5. Sustainable Transport has been neglected as a sustainable development issue in part because the solutions are in one area and the beneficiaries are in another. 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.

2. Advocating the goal for transport to secure The Future We Want

6. The High Level Panel of Eminent Persons on the Post-2015 Development Agenda emphasises 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.”⁵ Transport is one of these building blocks as confirmed by the “The Future We Want”, which states that transport is “central to sustainable development”.⁶

7. Through efficient, safe and affordable transport services, transport contributes directly to poverty reduction by assisting low income people in the world’s fast growing regions to access jobs and services and conduct their income-earning activities safely, affordably and conveniently. Enhanced accessibility of people to jobs, education and health services in urban and rural areas is facilitated by transport efficiency improvements that reduce travel time and the cost of travel. Large and small enterprises also benefit from enhanced accessibility through improved productivity and access to a wider pool of labour that can result in expanded production, new investment and creation of new jobs

8. Reduced road fatalities and serious injuries that avoid burdening health systems, social support services, rehabilitation programs, emergency response and legal systems will free up those 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.

9. A dedicated transport Sustainable Development Goal (SDG) is more likely to marshal appropriate finance and resources required to accelerate the introduction of more sustainable transport infrastructure and services in rural and urban areas. 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”.

10. The Partnership on Sustainable Low Carbon Transport (SLoCaT⁷) advocates the following Sustainable Development Goal (SDG) for transport: ***Provide sustainable transport.***

11. Having a dedicated SDG would generate co-benefits for other targets greater than could be achieved by treating transport as part of those targets. Transport has many dimensions and the policies, strategies, and measures needed to address these dimensions sit mainly in the transport sector. Transport agencies plan and provide transport infrastructure and provide or facilitate and regulate

⁵ “A New Global Partnership: Eradicate Poverty and Transform Economies Through Sustainable Development”, <http://www.post2015hlp.org>. Accessed 23 December 2013

⁶ “The Future We Want”, paragraph 132.

⁷ The Partnership on Sustainable Low Carbon Transport (SLoCaT) is a multi-stakeholder partnership of over 80 organizations including UN organizations, multilateral and bilateral development organizations, 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].

passenger and freight services. They contribute to the setting of new vehicle standards, licence vehicles and drivers, regulate safety and emissions of in-use vehicles and implement remedial measures to improve transport safety and security. Dividing transport amongst other targets involving other sectors risks insufficient and incomplete action on transport 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).

3. Five Targets to Encourage Action on Sustainable Transport

12. The SLoCaT partnership is proposing five main targets to realise the proposed sustainable transport SDG:

- *Urban access*: Secure universal access by sustainable transport for urban populations by 2030.
- *Rural access*: Secure universal access by sustainable transport for rural populations by 2030.
- *Road safety*: Halve the burden of global road traffic crashes by 2030 compared to 2010.
- *Air Pollution and Human Health*: Halve years lost due to premature death and years lived with disability from transport-related air pollution by 2030 compared to 2010.
- *Greenhouse Gas Emissions*: Realise at least 1.6 to 2.5 GtCO₂e reductions by 2020.

13. These five targets represent collectively the economic, social and environmental dimensions of sustainable land transport and if comprehensively addressed will realise structural transformation of the land transport sector by 2030. The proposed targets and associated results frameworks described in Section 4 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 in Section 5 is feasible today, or will be come so in the near future, although increased levels of funding would be needed to ensure regular and comprehensive reporting.

4. Results Framework

14. The five targets are complemented by indicators for measuring progress and supporting implementation and enabling measures (See box 1 for a definition of terms used in the Results Framework). With strong synergies between targets and associated implementation measures, the Results Framework is comprehensive and implementable.

Box 1: Definition 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 outcomes (say of a GHG reduction program e.g. through vehicle fuel economy that contributes to the GHG target). 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 needed to implement the components of a program. Distinction with enabling measures is they are quantifiable and would have a time dimension.

Enabling measures: are “inputs” i.e. the policies, standards, skills, institutional arrangements needed to deliver the above. Able to be measured qualitatively.

4.1 Access – urban and rural

15. The High Level Panel of Eminent Persons on the Post-2015 Development Agenda noted that transport was crucial for job creation, sustainable livelihoods and economic growth⁸. Poor people, in urban and rural areas are generally 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. Sustainable transport should be affordable, convenient and safe with minimal air pollution, noise and greenhouse gas emissions.

16. Sustainable urban transport (public transit, cycling and walking) requires spatial planning, interconnected public transit and safe pedestrian infrastructure and cycle-ways. More sustainable transport can reduce urban congestion, saving time, energy and money. It improves access to all, bringing economic, health and social benefits to millions of urban people, particularly disadvantaged groups.

17. Rural transport is vital for enhanced agricultural production and people's access to services, including healthcare and education. Notwithstanding growing urbanization, by 2030, three billion people will be living in rural areas⁹. At present, many of the people who endure absolute poverty live in rural areas and they may be several hours' walk from any road. Rural roads may be seasonally disrupted, particularly in poorer countries, and transport services are often infrequent and expensive¹⁰. Government departments responsible for planning and managing rural access tend to be under-resourced¹¹ and international efforts to improve rural access remain fragmented.

18. While both urban and rural people require universal access to sustainable transport, the means to enable, implement and measure this are not identical and may involve different agencies.

19. 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 ensure sustainable urban transport requires ensuring appropriate land-use planning reducing travel requirements, provision of reliable and affordable public transport, quality pedestrian infrastructure and dedicated cycle facilities.

20. In rural areas, travel patterns are often associated with periodic markets and the convenient transport of small quantities of freight is often crucial. Remote rural settlements need to be connected to provincial centres and local markets with roads that are passable all the year achieved through better maintenance of existing roads and construction of new rural access roads where appropriate. As many rural people depend on passenger and freight services, it is important that these are affordable, safe, convenient and appropriate. Local priorities will determine which means of transport are promoted and some countries may include water-based transport. The suggested emphasis on better maintenance or the construction of new roads, where appropriate, needs to be matched by ensuring adequate transport services to reach markets and essential services.

21. Progress on measuring the urban and rural access targets of the proportion of relevant households with universal access by sustainable transport 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'. Rural access will be measured using the existing Rural Access Index¹² (proximity to roads with year-round access) together with a complementary assessment of transport services. All process

⁸ High Level Panel of Eminent Persons on the Post-2015 Development Agenda (2013), A New Global Partnership: Eradicate Poverty and Transform Economies Through Sustainable Development.

⁹ 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>

¹⁰ Rural 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

¹¹ Improving Rural Mobility. World Bank Technical Paper 525.

¹² Rural access index: a key development indicator. <http://www.worldbank.org/transport/transportresults/headline/rural-access/tp-10-final.pdf>

indicators and implementation measures are quantifiable today, with further improved measurement techniques anticipated within three years.

Table 1: Results Framework - Urban Access

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

Process Indicators (2030 compared to 2010 baseline):

- Travel share of sustainable transport modes (public transport, cycling and walking) (desired achievement: double the 2010 share).
- Proportion of households within 500 metres of good quality public transport, walking and cycling facilities (desired achievement: 100%).
- Mean daily travel time for individuals to reach employment, education, health and community services (desired achievement: less than 90 minutes).
- Proportion of family income spent by urban families on transport to reach employment, education, health and community services (desired achievement: less than 20% of household income).

Implementation measures:

- Increase number of cities that have adopted sustainable land-use planning linked to prioritised public transport systems and functional hierarchical networks of roads, cycle-ways and pedestrian facilities (desired achievement by 2030: 100%).
- Increase the number of cities of over 100,000 inhabitants that have integrated, affordable and effective public transport systems (desired achievement by 2030: 100%).
- Increase the number of countries with national sustainable transport policies and programs to fund sustainable urban transport development and build related institutional capacity (desired achievement: 30 countries by 2020 and 90 countries by 2030).
- 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:

- 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 motorized transport.
- Develop policies and standards to promote inclusion of cycle routes and pedestrian facilities as part of all major urban road and infrastructure initiatives and new urban developments.
- Build sound institutions, appropriately staffed and resourced with competence in all aspects of sustainable transport planning and integration with land use.

Table 2: Results Framework - 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 providing all-year access (desired achievement: 100%).
- Proportion of rural population living within 30 minutes’ walk of appropriate transport services (desired achievement: 100%).

Implementation measures:

- Ensure existing roads are maintained to all-season standards (desired achievement by 2030: 100%)
- Construct, rehabilitate or upgrade appropriate infrastructure (roads, trails, bridges) to reach isolated communities (desired achievement by 2030: 100%).
- Build capacity building in rural transport planning and participatory processes within national and local agencies responsible for planning and regulating transport services (desired achievement: 40 countries by 2020, 100 countries by 2025)
- 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:

- Commit appropriate funding (based on local situations) to rural road maintenance and construction.
- Remove impediments to efficient and effective rural passenger and freight services by developing institutional capacity, increasing participatory planning, removing 'over-regulation' and facilitating strategic investments.
- Identify 'rural access' champion organizations to facilitate improved knowledge management and the development and deployment of national and international databases, and associated data gathering, relating to rural access parameters.

4.2 Road Safety

22. Globally, the World Health Organisation (WHO) estimates that 1.24 million people died on roads in 2010¹³. 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 2030¹⁴. Road traffic crashes inflict a similar burden of mortality to other communicable diseases, such as tuberculosis¹⁵. In some countries, 75% of hospital capacity for treating head trauma is taken up by road crash victims¹⁶.

23. Road crashes are estimated to cost more than US\$1,800 billion or 3% of GDP globally with the economic losses in low- and middle-income countries equivalent to 5% of GDP or US\$1,000 billion per year¹⁷. Road crash costs in these countries often well exceed the total development aid received, whilst 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.

24. 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 post 2015 UN General Assembly report¹⁸ "A life of dignity for all". The United Nations launched the Decade of Action for Road Safety (2011-2020) supported by the Global Plan¹⁹ 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.

25. Successful achievement of the SDG target for road safety will save an estimated 100,000,000 fatalities and serious injuries and more than US\$10,000 billion in economic costs between 2010 and 2030²⁰. 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

¹³ WHO (2013) "Global Status Report on Road Safety 2013 – Supporting a Decade of Action," page 4

¹⁴http://www.who.int/healthinfo/global_burden_disease/projections/en/index.html &
http://www.who.int/healthinfo/global_burden_disease/en/ accessed 19/12/2013

¹⁵ Institute for Health Metrics and Evaluation (2013), "The Global Burden of Disease: generating evidence, guiding policy." Seattle, WA, USA, page 12.

¹⁶ RAC Foundation (2011) "Saving Lives, Saving Money: The costs and benefits of achieving safe roads" London, UK

¹⁷ iRAP (2013) "The business case for investment in road safety" London, UK

¹⁸ 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

¹⁹ WHO (2011) "Global Plan for the Decade of Action of Road Safety" Geneva, Switzerland

²⁰ iRAP (2013) "The business case for investment in road safety" London, UK

safety is provided in Table 3. The target, process indicators and implementation measures are all able to be quantitatively 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 3: Results Framework – Road Safety

Target: Halve the burden of global road traffic crashes by 2030 compared to 2010.

Process Indicators (2030 compared to 2010 baseline):

- **Fatalities:** Number of people killed on the world's roads (desired achievement: less than 620,000 per year at 2030 from the 2010 baseline of 1.24 million per year).
- **Serious Injuries:** Number of people seriously injured on the world's roads (desired achievement: less than 6.2 million per year at 2030 from the 2010 baseline of 12.4 million per year).
- **Economic Impact:** Proportion of GDP represented by road crashes (desired achievement: less than 1.5% of GDP at 2030 from the 2010 figure of 3% of GDP).

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:

- 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
- 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
- Increase the proportion of vehicles manufactured each year that meet the safety standards set by the United Nations to 100% from the 2010 figure of approximately two-thirds
- Increase the proportion of countries with comprehensive legislation on 5 key risk factors (speed, drink-driving, the use of motorcycle helmets, seat-belts and child restraints) to 80% by 2030
- Increase global front and rear seat-belt wearing rates to over 80% in all countries by 2030 (baseline of 65%)
- Increase global motorcycle rider and passenger helmet wearing rates to over 80% in all countries by 2030 (baseline of 57%)

Enabling measures:

- 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
- 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
- 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
- Set best practice road safety legislation and provide sufficient resources for effective enforcement
- 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
- Establish effective crash data systems and analyses along with monitoring and evaluation mechanisms to inform policy and measure progress.

4.3 Environment and Human Health

4.3.1 Air Pollution and Human Health

26. 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 2010²¹. 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.²² Transport related air pollution is often expressed through particulate matter pollution, an environmental health problem that affects people worldwide, but middle-income countries disproportionately experience this burden because of their rapid motorization.

27. Air pollution is estimated to have economic losses equivalent to about 2% of GDP²³. Health damage may contribute up to 70% of these economic losses²⁴. Other adverse impacts included 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 primarily an urban issue. Advances in vehicle emission controls can cut air pollution from light and heavy-duty vehicles by almost 70% by 2030 compared to 2010. The proposed results framework for air pollution and human health is provided in Table 4.

28. Proposed to be measured in disability-adjusted life years, the target is already periodically estimated among other major health risk factors by burden of disease studies for the world and country clusters. The methods could be scaled up for more regular and detailed reporting. The process indicators and implementation measures are all measurable today.

Table 4: Results Framework – Air Pollution and Human Health

Target: Halve years lost due to premature death and years lived with disability from transport-related air pollution by 2030 compared to 2010.

Process Indicators (2030 compared to 2010):

- Urban population within WHO limits by 2030 (desired achievement: an additional 1.5 billion urban residents compared to 2010).
- PM2.5 air pollution from passenger and freight vehicles by 2030 (desired achievement: 70% reduction compared to 2010).

Implementation measures:

- Implement Euro standards in all countries by 2030 reaching:
 - Euro 6 or equivalent vehicle emission standards by 2030 in China, India, Latin America, non-EU Europe, Russia, and the Asia-Pacific (desired achievement: 100%); and
 - Euro 5 or equivalent vehicle emission standards in the Middle East and Africa (desired achievement: 100%).
- Increase the proportion of transportation fuel (gasoline and diesel) that is ultra-low sulphur (10ppm or less) by 2030 (desired achievement: 90%).
- Increase the number of cities with more than 1M persons that have air quality meeting WHO guidelines by 2030 for PM2.5 (desired achievement: 100%).

²¹ Lim, 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.

²²WHO (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.

²³ World 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.

²⁴ Ibid. Page vii.

- Increase the proportion of in-use passenger and commercial and freight vehicles are covered by regular Inspection and Maintenance Programs by 2030 (desired achievement: 80% passenger vehicle; 100% commercial and freight vehicles).

Enabling measures:

- Build Institutional capacity in air quality management, vehicle inspection and urban planning
- Build capacity vehicle maintenance and emissions compliance testing

4.3.2 Greenhouse Gas Emissions

29. Transport contributed about one quarter of energy-related global GHG emissions and about one fifth of energy use in 2009²⁵. Land transport represents 70% of transport related energy use and GHG emissions. These 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 2050.²⁶

30. 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 motorized 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 motorized 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. 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 2050²⁷ 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.

31. In developing a results framework for GHG emissions from transport it is important to realize 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.

32. The proposed results framework for GHG emissions from transport is provided in Table 5. It targets the emission reduction potential of the transport sector rather proposing a sector wide emission reduction target in order to inspire the on-going negotiations on a global climate change agreement rather than to prejudge their outcome. For that reason the proposed time frame for this specific target currently only extends to 2020, although process indicators as well as implementation measures and enabling measures are proposed for a 2030 time frame. A 2030 target can be formulated once more clarity exists on a new post 2020 global climate change agreement. Setting of a possible 2030 target should take into consideration modeling by the International Energy Agency that indicates compliance with a maximum 2° rise in temperature requires global transport emissions by 2050 to be at, or below, 2000 levels.

33. The proposed 2020 target of 1.6 – 2.5 target metric GtCO₂e is based on the UNEP Emissions Gap analysis²⁸, which annually assesses emission reduction potentials using least-cost instruments consistent with a 2-degree warming scenario and this compared to a BAU of 6-degree warming scenario.

²⁵ International Energy Agency (2011), “Energy Technology Perspectives”. Page 423.

²⁶ International Energy Agency (2009), “Transport, Energy and CO₂: Moving toward Sustainability.” Page 451.

²⁷ These energy efficiency measures go beyond the 30% improvement in efficiency of new vehicles in the baseline.

²⁸ The Emissions Gap Report 2013, A UNEP Synthesis Report.
http://www.unep.org/pdf/UNEP_Emissions_Gap_Report_2013.pdf. Accessed 23 December 2013.

34. 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.

Table 5: Results Framework – Greenhouse Gas Emissions

Target: Realise at least 1.6 to 2.5 GtCO₂e reductions by 2020.

Process Indicators (2030 compared to 2010)

- GHG emissions from the global vehicle fleet, in 2030 for all new vehicles compared to 2010 and by 2050 for the complete global fleet compared to 2010 (desired achievement both sub-indicators: 50%)
- Transport sector fossil fuel consumption/unit GDP by 2030 (desired achievement: 60% reduction)
- Black carbon emissions from transport by 2030 (desired achievement: 60% reduction)
- Public transport ridership, walking and cycling trips doubled globally by 2030 compared to 2010 (100% increase)

Implementation measures:

- Adopt fuel economy policies in all countries by 2020 with increase in new fleet fuel economy of 50% by 2030 compared to 2010
- Reduce empty freight land transport distance travelled by 50% compared to 2010
- Phase-out all motor vehicle fossil fuel subsidies by 2020 and institute motor vehicle fuel taxes in 90% of countries by 2030
- Price transport so that travellers perceive the full social costs of their travel (on average), and implement other travel demand control measures in all cities with a population of 1M or more
- Develop integrated and affordable public transport systems in all cities of over 1M people
- Develop national transport programs for sustainable transport, build related institutional capacity, and foster sound transport pricing and demand management coordinated with land use are adopted by 30 countries by 2020 and by 90 countries by 2030
- Adopt Transit Oriented Development Standards to manage development within market area of high capacity public transportation in all cities over 1 M by 2030.

Enabling measures:

- Monitor passenger and freight travel activity by mode, trip and user type, including time and cost attributes to support policy making in all cities and countries.
- 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.
- Remove barriers to introduction and dissemination of new low carbon technologies for vehicles with aim of lowering costs to users.

5. Target Differentiation, Measurement and Verification

5.1 Target Differentiation

35. 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.

5.2 Measurement and Verification

36. All five targets are considered measurable and verifiable since they either 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.

37. 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 is part of progress made in target accomplishment.

38. Urban and rural access. GIS techniques that are relatively inexpensive are used increasingly in transport planning and monitoring. 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. 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 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.

39. 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 some countries intermediate means of transport (e.g., motorcycles and three-wheelers) and water transport may be included in transport assessments. In some mid-level income countries, the role of para-transit systems operating for people without personal means of transport may be highlighted. The local measurements of access will incorporate common principles, but different local needs and priorities.

40. 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.

41. Air Pollution and Human Health. The target metric is periodically estimated among major health risk factors by burden of disease studies. The methods could be scaled up for more regular and detailed reporting. The process indicators and implementation measures are all measurable today. Using on ground measurements coupled with satellite imagery and standardised source apportionment methods, 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.

42. 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 2050²⁹. 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.

6. Mobilising resources for implementation

43. 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 as well as international organizations supporting transport in developing countries. These changes have started but will need to be accelerated to realize the ambitious targets proposed. More realistic pricing of transport and its impacts, and the manner, in which costs and benefits of transport are evaluated, can also help to realize the proposed targets.

44. 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 by 2050 based on a recent International Energy Agency study.

45. The SLoCaT Partnership, which represents a broad array of organizations, 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.

46. 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 largest 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 mobilizing change for sustainable development was also highlighted in the recent Stakeholder Forum and NRDC 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".

47. 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.

48. 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 Support a 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.

²⁹ Divided 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.

49. By proposing such a large financial package for preparation and implementation of sustainable transport programs it is intended to mobilize other key stakeholders especially national and local governments but also other stakeholders like bilateral development organizations as well as from non-traditional sources including sovereign wealth and pension funds, national development banks. Linkages with climate funding will also be explored.

50. The development of national governments national level sustainable transport financing facilities, which modelled on existing schemes in Brazil, Colombia, India or Mexico 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.

51. 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, the transport operators in government 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 are invited to make 0.25% of their annual lending and non-lending assistance for transport available for capacity building activities.

52. These financial and capacity building voluntary commitments have in common that they are made on behalf of organizations 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: Organizations 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 ongoing 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); 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; United Nations Environment Program (UNEP); UN-Habitat; Victoria Transport Policy Institute (VTPI); the World Bank
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, UNEP; Health Effects Institute; International Council on Clean Transportation; International Energy Agency; World Health Organisation; Institute for Transportation and Development Policy; Institute of Transportation Studies at UC Davis (ITS-Davis).

Appendix 2: Members SLoCaT Partnership

1. African Development Bank
2. African Transport Policy Program
3. Alliance to Save Energy
4. Asian Development Bank
5. Believe Sustainability
6. Corporación Andina 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, Gadjah Mada 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 Gesellschaft für Internationale Zusammenarbeit (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 Environment Program
74. United Nations Human Settlements Program
75. University College of London, Department of Civil, Environmental and Geomatic Engineering
76. University of California, Davis, Institute of Transport Studies
77. University of Transport and Communication Hanoi
78. University of Twente-ITC
79. VEOLIA Transport/Transdev
80. Victoria Transport Policy Institute
81. Volvo Research and Education Foundations
82. Walk 21
83. World Bank
84. World Business Council on Sustainable Development
85. World Health Organization
86. World Streets
87. Wuppertal Institute for Climate, Environment and Energy
88. WWF International