

TST Issue Brief: Sustainable Transport¹

Summary – key messages

While transport is central to development many people in rural and urban areas do not have access to affordable, safe and clean transport. Transport services and infrastructure will be required to enable the mobility of people and goods needed for inclusive economic and social development and improved quality of life. Transport is central in shifting to sustainable low carbon societies but needs to be decoupled from impacts like air pollution, congestion, road traffic injuries and climate change. Key sustainability issues are: Rural and urban transport, air quality, road safety, and energy and climate.

- *Urban transport systems can be improved through the development of well-designed mass transit systems linked with safe and attractive facilities for cycling and walking. An SDG target should be to double the number of people with access to affordable, quality mass transit.*
- *Rural transport services are critically important to development and agriculture. Halving the number of people without roads or adequate transport services has been proposed as a target. A target also needs to be developed for all-weather roads to serve the rural population.*
- *Urban air pollution is a major threat to global human health, especially small particulates. The transport sector can lead in implementing an SDG target to bring the air quality of 1.5 billion people within WHO guideline limits, which can be achieved with existing technologies and policies.*
- *Road Safety is deteriorating and has become one of the main killers of pedestrians, young and vulnerable people. Many cities and countries have shown that achieving an SDG target of halving road fatalities worldwide is achievable.*
- *And transport plays an important role in using energy more efficiently and reducing greenhouse gas emissions. The SDGs should include a target to double the efficiency of the global vehicle fleet. These targets can be achieved using existing cost effective policies and technologies - many cities and countries have already achieved them. They need to be scaled up through inclusion of transport targets in the SDGs.*

Introduction

Transport involves everyone, every day, whether it is through walking, cycling, using public transport, driving a car, or through air and sea travel. Transport is central in goods movement and crucial for development and economic growth. It provides access to work, education, health services, and other public services. It also provides access to markets and supply chains. International transport of goods between countries is important for development and lack of infrastructure can increase costs and externalities.

Current trends are still too focused on individual car use, exclude large groups in providing affordable quality mobility, are fossil fuels intensive, and have many negative effects such as road traffic injuries and climate change. Rio+20 recognised Sustainable Transport as an important area for follow-up and international support to developing countries. The High-Level Panel of Eminent Persons on the post-2015 Development Agenda included transport in two goals associated with energy and employment. Several Consultations have been undertaken on Sustainable Transport with many supporting the idea of “equitable access to goods and services through clean, safe, affordable, reliable transport and land use planning.”

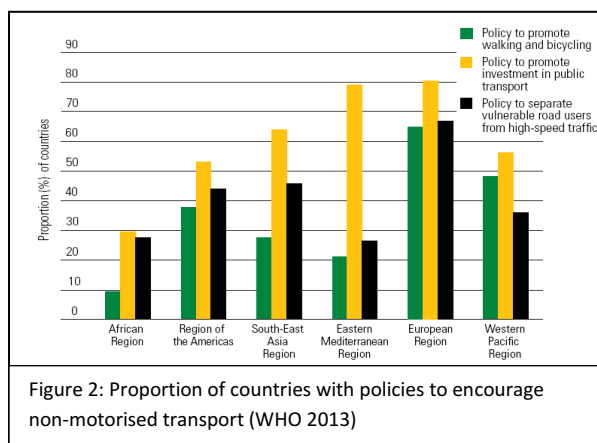
¹ The Technical Support Team (TST) is co-chaired by the Department of Economic and Social Affairs and the United Nations Development Programme. The preparation of this issues brief has been led by UNEP, with contributions from ECE, ESCAP, FAO, WFP, and WMO.

Taking Stock

Greenhouse gas emissions from the transport sector are growing faster than any other sector and are estimated to increase from one quarter today to one-third of all energy related CO₂ emissions by 2050 (IEA 2012). At the same time, over 1.2 million people were killed on roads in 2010 (WHO 2013) and small particulate outdoor air pollution is estimated to result in more than 3.2 million premature deaths annually (Lim, 2012). Many cities in all regions of the world have come to a complete gridlock due to congestion, having major impacts on economic development. Nonetheless a growing number of countries and cities spearhead innovative solutions and showcase how transport can be more sustainable.

Paragraph 133 of the Johannesburg Plan of Action calls for the development of “*sustainable transport systems, including energy efficient multi-modal transport systems, notably public mass transportation systems, clean fuels and vehicles, as well as improved transportation systems in rural areas*”. It also calls for support to developing countries to achieve this. However, as transport was not included in the MDGs and its targets, over the past decades the transport sector has not been given the attention it should and many transport related problems have increased. The development of a post 2015 framework provides an opportunity – a last chance that is - to integrate transport as a driver for sustainable low carbon societies.

Switching to a sustainable integrated transport approach needs special attention to related areas such as financing and infrastructure. Societies need to redirect investment in infrastructure that supports sustainable transport. So rather than investing (only) in highways - include dedicated bus lanes for bus rapid transit systems, and integrate safe walking and cycling facilities when building or upgrading urban roads. And invest in integrated goods transport – linking land (including rail) with sea transport. The resilience of transport infrastructure is also important in light of climate change adaptation. Transport infrastructure and systems should be adapted to extreme weather and global sea level rise – especially as transport infrastructure investments require a long time horizon. Proper adaptation is not only important for reliable transportation of people but also for the global delivery of goods, including energy and food.



Options - Making Transport Sustainable

The ultimate transport goal is to give citizens access to goods and services while minimizing negative external effects such as traffic injuries and emissions. This can be realized through an “Access-Shift-Improve” (ASI) approach: (i) provide equitable *Access* to jobs, goods and services while *avoiding* unnecessary motorised trips by smarter planning; (ii) *Shift* the transport of goods and persons to the most efficient mode, and; (iii) *Improve* the efficiency of transport by improved vehicle and fuel operations and technologies. Using and ASI approach can make transport sustainable in the following ways.

- *Transport is a key driver for poverty reduction and social inclusion.* Well-designed transport systems provide mobility for all groups in society. However, in many countries affordable mass transit systems do not exist, forcing people to pay a relative large share of their income on transport or restricting their access to workplaces, school and friends and family. Well designed , intermodal transport systems are essential for the provision of goods and services, including food. Doubling the number of people with access to mass transit or non-motorised transport within an average half hour daily commute has been proposed. Similarly access to transport by road or other means in rural areas within a half hour walk has also been proposed.

- *Cleaner transport systems can improve the health of billions of urban residents.* The transport sector is a major source of outdoor air pollution. In cities around the world, transport is often *the* main source of air pollution. Many different types of air pollutants have adverse health impacts, and especially small particulates, called PM 10 and PM2.5. PM pollution penetrates deep into the lungs and blood stream and is a major cause of heart and respiratory disease, and also a leading cause of cancer (IARC, 2012). According to the WHO PM pollution affects more people than any other pollutant (WHO 2011). Rio+20 called for the reduction of non-communicable respiratory diseases. Growing reliance on private vehicle travel is also a key driver of physical inactivity- increasing the risk to related to non-communicable diseases (NCDs).
- *Transport provides cost effective opportunities to reduce global greenhouse gas emissions.* Today the knowledge, policies and technologies are available to shift towards a more sustainable low carbon transport pathway. And we can do this while saving resources: mass transit can provide mobility for many, reducing the need to build additional roads; the efficiency of the global vehicle fleet can be doubled using existing policies and technologies saving billions of dollars in fuel; building walking and cycling paths in our cities only costs a few percentage points of road investment.

The future of the transport sector will see major changes. New models will be introduced that share vehicles and that will focus on inter-modal connectivity, new technologies will be low and no-carbon, and the use of IT will provide new opportunities. Only by providing an integrated approach to the transport sector, rather than focusing on different modes in isolation, can the sector contribute optimally to the recovery of economic development, greater productivity, a low carbon society and a healthier population. Trade, goods and services will benefit from better interconnected inter-modal and cross border transport especially for Land Locked Developing Countries (LLDCs) and Small Island Developing States (SIDS). Using inland and coastal waterways and modal shifts to rail, moving away from infrastructure attempting to support an unsustainable road focussed transport model, all provide clear climate, movement and cost benefits for the freight sector. And will provide sustainable solutions to rural access with local resources.

Way Forward - What Needs to be Done

There are several key areas where the transport sector is fundamental to achieving sustainable development:

1- Access to integrated urban transport systems and improved rural roads

By default or design, world-wide transport systems are still mainly based on private car use. A move from individual car use to public transport is needed, to address congestion, improve access and for environmental reasons. Integrated urban transport systems involve walking, cycling, cars, buses, and mass transit systems. Important is the feed-in of non motorised transport into mass transit systems. Mass transit systems should be affordable so that they provide maximum access –

especially to the poor and other groups like children and people with a disability. Moreover, the lack of safe and affordable transport restricts the mobility of women and prevents their full participation in the economy and other activities. Urban transport systems need to be designed based on participatory approaches to maximize usage. In Latin America major cities such as Bogota have showcased bus rapid transit systems – that are capable of quickly and safely transporting many people in and out of the city. In many regions, and especially in Asia, despite the introduction of mass transit systems more needs to be

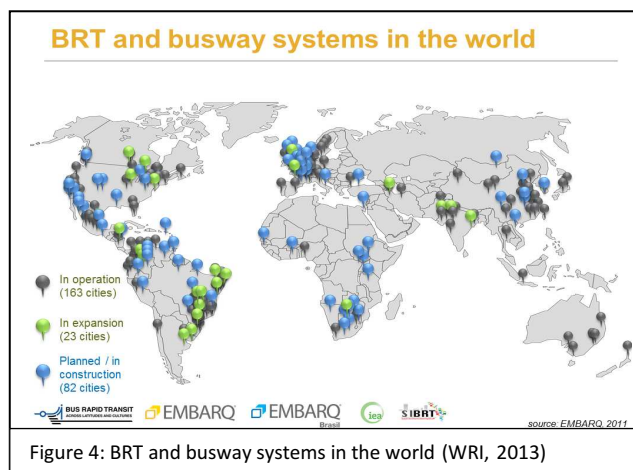


Figure 4: BRT and busway systems in the world (WRI, 2013)

years road deaths have increased in Sub Saharan Africa by over 80% (WHO, 2013). In Latin America, the majority of these deaths occurred among vulnerable road users, pedestrians accounting for almost one-third.

In 2011 the UN Decade of Action for Road safety was launched through a UN General Assembly resolution with the support of more than 100 governments. Its Global Plan promotes proven cost effective solutions such as better designed roads, with facilities for non-motorised transport users, application and enforcement of strict regulations such as on vehicles road worthiness and seat belts, and safer roads use, such as through speed reductions. More mass transit systems would also assist in reducing road traffic accidents.

Proposed health and road safety SDG target - to reduce road fatalities by half by 2030. This can be achieved if countries adopt a set of road safety measures outlined in the Global Plan of Action. Many organizations are working to implement the Decade of Action plan to achieve this.

4- Energy and Climate

Transport is a major consumer of fossil fuels. Today’s global vehicle fleet is estimated at around one billion vehicles, and is set to double or even triple in the coming decades, with 90% of this growth taking place in non-OECD countries (see figure 1). Improving the efficiency of vehicle fleets has many positive impacts – reduced greenhouse gas emissions, reduced energy dependence, reduced oil and fuel use, and cheaper and cleaner transport. There is a large group of countries, OECD and non-OECD, that have put in place measures to improve the fuel efficiency of their vehicle fleet. These countries are making major progress with reducing fuel consumption - currently at a rate of close to 7% improvement per year (GFEI/IEA 2012). However a similarly large group has not put in place measures and their average fuel economy is not improving at all. With the vehicle fleets expected to grow especially in these “stagnant” countries, the global fleet CO2 emissions are set to double or triple - while these could be halved if fuel economy policies would be introduced globally (see figure 5). The Sustainable Energy for All and the High Level Panel report both recommend improvement of fuel economy as a priority for better energy efficiency.

Proposed energy and climate SDG target - Double the efficiency of the global fleet, in 2030 for all new vehicles and by 2050 for the complete global fleet. This can be achieved through the global adoption of fuel economy policies. The UN is working with leading global transport partners in the Global Fuel Economy Initiative that is working towards this target at global and national level worldwide.

These four priority targets are by no means the only transport actions that need to be undertaken. Moving towards sustainable transport systems needs actions in many more areas. A post 2015 sustainable development framework should consider additional activities and targets in following areas:

- *The logistics and freight sector* combines land, air and maritime. Freight movement comprise of one third of transport energy use, three-quarter of this is land-based (IPCC 2007). Freight is a disproportionate high emitter of black carbon (because of its use of heavy duty diesel engines). However, there are excellent freight and logistics initiatives improving the efficiency and reducing harmful emissions.
- *Non-land based transport* – 90 percent of the global trade volume is carried by sea. Ships are closely linked to on-shore activities, especially ports and land freight

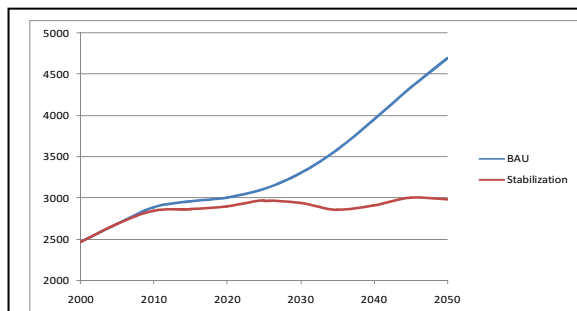


Figure 5: Predicted growth CO2 emissions of the global fleet (GFEI 2011)

transport systems. Targets should be set to continue reducing pollutant, building on existing agreements, with a special focus on PM and climate emissions – both CO₂ and black carbon. The aviation sector is fully dependent on fossil fuels and while long term strategies need to look at alternatives, at the short term much efficiency improvements can be made including in operations at airports and through clean technology and better planning. In Europe short-haul flights are being shifted to high speed rail with significant benefits.

- *Subsidies* - that promote the use of unsustainable transport modes – in particular fossil fuel subsidies – should be removed. Fossil fuel subsidies were estimated at more than USD 400 billion in 2010 and provide a major draw on public funds in many countries. Although intended to assist the poor, fossil fuel subsidies benefit more the wealthy.
- *Sustainable biofuels* – use of biofuels for transport is increasing, often due to government policies promoting their use. Threats are the displacement of food crops for fuel crops, the expansion of agricultural land into ecosystems rich in biodiversity or carbon, or displacement of small holder agriculture. Appropriate policies need to be put in place to avoid these externalities. Technologies focused on converting waste or sustainably harvested non-food crops are promising.

For all of these issues time is of the essence. There is only a small window of opportunity to introduce the necessary measures – it takes time for mass transit systems to be designed and build, it takes time to change urban planning paradigms and it takes time for new vehicles to replace old fleets.

For these actions to be successfully addressed *several conditions need to be met.*

- Transport needs to be given the *political priority* it deserves, as a social, economic and environmental issue and as an opportunity to contribute to sustainable development; with a paradigm shift from a focus on individual motor vehicle users to integrated multi modal transport approaches for people and goods.
- New approaches and technologies will need to be *fast tracked and shared among countries*. These include congestion charging, e-pricing, zoning, zero or low emissions vehicles, bike and car sharing programs, active (non motorised) travel mode schemes.
- Major investments are taking place in transport - in the next decades hundreds of trillion of dollars will be spent on building transport infrastructure and in fuels and vehicles. Switching to a sustainable low carbon and resilient transport sector needs the *existing investments to be redirected* and be more sustainable. Seed funding is needed to support countries develop new transport approaches and strategies and adjust their financial and investment policy climates to support sustainable transport. Multilateral Development Banks, bilateral agencies and the UN can be called upon to assist with this shift in investment patterns.
- *Governments need to work with the private sector and civil society* to switch to more sustainable transport models. Though innovative public –private partnerships and through taking leadership the private sector can become a driving force to make transport efficient, affordable and cleaner. NGOs and knowledge organizations have been taking the lead in promoting alternative models and scenarios. There is a wealth of knowledge and experience, at all levels, that can be used to achieve more sustainable transport systems.
- *Capacity building and exchange of knowledge and technologies* will be key pillars.
- And a move to a more sustainable transport sector will need *coordinated action at all levels*; at the city level - with introduction of integrated urban transport systems; at national level – setting cleaner fuels and vehicles standards; at regional level – for much needed harmonization; and at the global level - where knowledge and technology need to be shared and where UN agencies play a central role in promoting more sustainable transport systems.

The transport community is diverse; governments are cooperating with non governmental organisations, the private sector, knowledge institutions and international organisations to develop transport programs as outlined in this brief. A feature of some of the most successful programs is that they have involved all these groups in global and national activities. It is important, with such a diverse group of involved organisations, that coordination is effective. The transport community is now discussing, also on the basis of this brief, the development of a results framework that will provide clear targets and indicators for the role of transport in the post 2015 SDGs.

Recognizing the importance that the transport sector plays in achieving sustainable development, transport interventions as suggested in this brief should be combined into one dedicated SDG, as they are closely interlinked. However, most important is that the key areas and targets as listed in this paper are included in the SDG framework.

Transport can make key contributions to all three pillars of sustainable development – economic, social and environmental. To do so it needs to be part and parcel of the post 2015 framework. There is no second chance, once cities have planned and developed, roads have been built, vehicle fleets have grown, it will be too late and far more costly to develop retrofit solutions. There is a short window of opportunity to shift to sustainable transport systems and the development of the SDGs provides an ideal opportunity to do this.

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