Jürgen Perschon

Sustainable Mobility

Recommendations for Future-Proof Transport Strategies
Almost 80 years have passed since the Charter of Athens was adopted at the IV International Congress for Modern Architecture in 1933, laying the foundations for the system of urban planning and design which has resulted in today’s car-based, gridlocked societies. By proposing the separation of residential from industrial areas and recreational amenities, urban planners and architects were encouraged to break apart the small-scale holistic structures that had hitherto characterised functioning urban spaces. This approach, pursued over subsequent decades, has not only desolated many inner-city areas; above all, it has led to a dramatic increase in traffic. This trend is reinforced by the continued reliance on road transport among transport planners and policy-makers in North and South alike, apparently based on the entrenched belief that traffic growth and individual mobility promote greater prosperity.

In development cooperation, too, the massive expansion of road infrastructure is seen as the key to prosperity and economic growth – putting it at the top of the current political agenda in many developing countries and emerging economies. This over-prioritisation of road-building has been driven by low transport costs and assumptions about the unlimited availability of fossil fuels. In the affluent countries of the Northern hemisphere, the outcomes of this approach are mass motorisation and the individualisation of mobility. The Western lifestyle and model of consumption and mobility are seen by the aspirational societies of the Global South as a symbol of freedom, wealth and success – and hence a universally desirable goal. As a result, mobility has gradually become an end in itself, with transport planning no longer based solely on the need to facilitate access to the workplace, schools, shops or health facilities, but also intended to maximise individual mobility with more roads and vehicles. Many politicians and planners still work on the premise that in seeking to satisfy the growing demand for transport services, car use should be regarded as the norm; their answer to the growing problem of urban space is to build wider roads and more flyovers and underground car parks. This “business as usual” approach is based on an entrenched culture of individual mobility that relies on intensive consumption of energy.

But mass motorisation and road-building as the basis for development create numerous problems. Traffic growth is supposed to promote economic growth, but in reality, more traffic means less development. Every day, millions of new vehicles are registered in São Paulo, Beijing, Delhi, Johannesburg and elsewhere. However, all these moving vehicles soon become stationary vehicles as traffic grinds to a halt. “Gridlock” has tangible economic impacts: if employees are late for work or goods cannot be despatched on time, this not only harms the company concerned; it ultimately has a macroeconomic cost as well.

In order to achieve an equitable and sustainable model of mobility for the future, a paradigm shift in transport policy is essential. As part of this process, more critical reflection on the impacts of our present mobility patterns is required. This Policy Paper therefore starts by considering the negative effects of today’s culture of mobility and defines criteria for sustainability in the transport sector – currently the subject of debate at the global level. It then considers the specific mobility challenges facing the emerging economies and developing countries. It also examines the role of technological innovation in the transport sector and considers how mindsets and mobility behaviour can be changed. Examples of best practice from around the world are presented, pointing the way towards successful transformation of mobility culture. And finally, the role of global governance in promoting sustainable mobility is analysed in more detail.
What’s more, these mobility structures cause major health problems. In the countries of the Global South, more than three-quarters of air pollution comes from the transport sector. Depending on the substance and concentration, traffic emissions – mainly soot particles, sulphur dioxide and nitrogen oxide – can harm human health, causing respiratory and cardiovascular diseases. These emissions are responsible for two million deaths annually from respiratory diseases worldwide. Soot particles are particularly hazardous, causing 600,000 deaths per year.

The road safety figures are even more alarming. Worldwide, there are more than 1.2 million road traffic fatalities every year, 80 per cent of them in the countries of the Global South. According to projections by the World Health Organization (WHO), from 2020, road traffic accidents will be the main cause of death among children in the 5-15 age group in southern Africa; the WHO describes this as a “hidden epidemic”. The deaths which occur on our roads every day are ignored by the media and are accepted by society as the price we have to pay for mobility. Most of the fatalities are pedestrians, cyclists and motorbike riders, as well as minibus passengers. In other words, the majority of casualties come from poorer social groups. Studies in Asia have shown that the loss of the main breadwinner in an accident generally results in the impoverishment of the surviving family.

This highlights another problem associated with car and road-based development: extreme social inequality in access to effective mobility options, coupled with inequitable distribution of investment and its follow-up costs. Poorer social groups in rural or peri-urban areas cannot afford a car or, indeed, bus or subway travel. Instead, they walk or cycle and are therefore particularly exposed to the hazards of road traffic described above. They also generally lack access to key services such as schools and hospitals. To make matters worse, most public investment is channelled into road construction, mainly benefiting motorists, who make up a mere 10 per cent of the urban population. This 10 per cent takes up 90 per cent of the road area, forcing pedestrians and cyclists to compete for the remaining space.

The transport sector’s negative impacts on the environment are also becoming increasingly apparent. In the OECD countries, this sector now accounts for almost a quarter (24 per cent) of greenhouse gas emissions. Together with the energy industry and agriculture, transport is one of the three sectors inflicting the greatest damage on the climate. Within this sector, road traffic produces the highest percentage of harmful emissions (around 80 per cent in industrialised countries). The 500 million cars on the world’s roads emit four billion tonnes of carbon dioxide (CO2) a year. If the emissions from road-building, car manufacturing and refineries are factored in, transport accounts for almost one-third of CO2 emissions.

What’s more, the transport sector remains heavily dependent on oil, which fuels 95 per cent of transport worldwide. Every day, more than 80 million barrels of oil are consumed – most of it by the transport sector, which accounts for a full 60 per cent of the world’s oil consumption. Population growth and economic development are likely to cause a further dramatic rise in oil consumption, which has doubled in the US and quadrupled in Europe since 1960.
II. The Global Challenge: Reaching a Consensus on Criteria for Sustainable Mobility

In order to mitigate its negative impacts, experts have been attempting for some years to develop proposals for a globally viable consensus on sustainability for the transport sector, including criteria for sustainable mobility. This is particularly significant because transport policy objectives and mobility programmes are often of limited duration, rarely extending beyond a single electoral or legislative term. In order to create structures which safeguard mobility for present and future generations, there must be a much greater focus on sustainability. Thirty years have now passed since the concept of sustainable development moved to the forefront of the international debate. The World Commission on Environment and Development (Brundtland Commission) established by the United Nations in 1983 provided the following intergenerational definition of sustainability:

“Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

In relation to transport, this means a concept of mobility which, in terms of its social dimension, safeguards the fulfilment of people’s needs on an intra- and intergenerational basis, with fair and equitable access to markets, health services, education and jobs, and participation in cultural and political processes. In relation to its economic dimension, sustainable mobility should provide effective options for the movement of passengers and goods, and safeguard and facilitate regionally balanced development, taking account of financial capacities and the ensuing burdens for present and future generations. And in terms of its ecological dimension, it should reduce emissions of air pollution,

<table>
<thead>
<tr>
<th>Dimension/Indicator</th>
<th>Underlying sustainability goal</th>
<th>Indicator type</th>
<th>Current availability of data</th>
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<tbody>
<tr>
<td>Environment</td>
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<tr>
<td>Land consumption by transport infrastructure (as % of total surface)</td>
<td>Avoid sprawl and destruction of the environment by transport infrastructure</td>
<td>Effect/impact</td>
<td>Low</td>
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<td>Pro-Kopf Treibhausgasemission des Transsportsektors</td>
<td>Verringerung der Auswirkungen des Transsportsektors auf den Klimawandel</td>
<td>Effect/impact</td>
<td>Medium</td>
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<td>Percentage of population affected by local air pollutants (e.g. concentration of particulate matter smaller than about 10 micrometers [PM10], Non-Methane Hydrocarbons [NMHC] emissions, …)</td>
<td>Reduce detrimental effects on human health and the environment</td>
<td>Effect/impact</td>
<td>Medium</td>
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<td>Equity/Social</td>
<td></td>
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<tr>
<td>Road fatalities</td>
<td>Reduce the number of people killed or injured in road traffic accidents</td>
<td>Effect/impact</td>
<td>High</td>
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<tr>
<td>Modal share of public transport/ non-motorised transport</td>
<td>Foster transport modes that are both accessible for a large part of the population and environmentally sound</td>
<td>Outcome</td>
<td>Medium</td>
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<td>Share of transport cost from total household expenditure</td>
<td>Provide affordable transportation for all members of the society</td>
<td>Outcome</td>
<td>Medium</td>
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<td>Economy</td>
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<tr>
<td>Minimum taxation on fuel</td>
<td>Consider the external costs caused by transportation based on fossil fuels (especially road traffic)</td>
<td>Performance</td>
<td>High</td>
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<tr>
<td>Transport investments by mode</td>
<td>Prefer transport modes that are accessible and environmentally sound</td>
<td>Performance</td>
<td>High</td>
</tr>
<tr>
<td>Passenger kilometre/ tonne kilometre per unit GDP</td>
<td>Decouple economic growth from transport demand</td>
<td>Effect/impact</td>
<td>Medium</td>
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<td>Governance</td>
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<tr>
<td>Participatory transport planning</td>
<td>Involve the public in the decision process for transport policies and projects</td>
<td>Performance</td>
<td>Low</td>
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</table>

Table 1: Ten indicators for sustainable transport

greenhouse gases and noise and minimise land consumption by transport infrastructure.

Nonetheless, a widely accepted definition of the concept of “sustainable mobility” is still lacking at the local and global level. Various institutions and expert organisations such as the Institute for Transportation and Development Policy, the World Research Institutes, GIZ, the European Institute for Sustainable Transport and the Partnership on Sustainable Low Carbon Transport (SLoCaT) have therefore produced a set of indicators for sustainable transportation and underlying goals as a basis for discussion (see Table 1). Broadly speaking, the indicators are based on the three dimensions of sustainable development outlined above (economic prosperity, environmental quality and social equity). Environmental indicators measure transport greenhouse gas emissions per capita (carbon footprint), land consumption by transport infrastructure, and the percentage of the population affected by local air pollutants. Social and economic indicators measure, inter alia, the number of road fatalities, the share of transport costs from total household expenditure, and sustainable transport investments at the national and local level. Good governance is the fourth dimension: it measures the level of stakeholder involvement in the planning and decision process for transport policies and projects.

The use of these key criteria and indicators of sustainable mobility can provide reliable comparative data as a basis on which to identify interdependencies and evaluate performance and the extent to which targets are being achieved. They also give donor organisations a transparent and valid benchmark to plan, measure and compare projects.

In order to implement these criteria successfully, a coherent set of measures is required. This should comprise, firstly, regulatory and economic measures, known as “push measures”, based on disincentives in order to discourage less sustainable patterns of behaviour. Such measures can include access restrictions to limit the use of private cars in city centres (e.g. environmental zones, city tolls), significant lowering of speed limits on many roads, strict parking policies, and high taxation of gas-guzzling vehicles. The main aim is to reduce the use of private vehicles. Regulatory and fiscal measures to limit heavy goods traffic, and taxes on air travel, are other effective mechanisms to encourage a shift to more efficient and sustainable modes of transport.

Secondly, incentive measures (“pull” measures) should be introduced on a broad basis with the aim of making sustainable modes of transport more attractive. An extensive urban network of safe, convenient and segregated cycle paths, guarded cycle parking facilities, an integrated, high-quality, efficient and affordable local public transport system, the creation of shared space – where walking, cycling, shopping and driving cars become integrated activities – in residential areas and the introduction of bike- and car-sharing schemes can encourage this shift.

Mobility policies in urban areas should clearly prioritise pedestrians, cyclists and local public transport over private cars – in urban planning, infrastructural development and traffic management. This can only be achieved, however, if land use and urban planning are geared towards mixed use, compact and polycentric cities, and short distances.

**Recommendation**

A global consensus on criteria and indicators of sustainable mobility is urgently needed as the basis for obtaining reliable comparative data and identifying shared goals for successful implementation and evaluation of transport-related measures. When designing sustainable transport strategies, policymakers should focus on creating a coherent set of “push” and “pull” measures.
III. Emerging and Developing Countries: The Context

Urban mobility

Emerging economies and developing countries face a multitude of mobility challenges, with different scenarios in urban and rural areas. In urban areas with a high population density and businesses concentrated in a relatively confined space, traffic congestion is generally the main problem. Combined with inefficient infrastructure, this causes time and productivity losses and is already having a severely detrimental effect on economic development. In Bangkok, for example, the losses caused by traffic congestion are estimated at nearly 10 per cent of the city’s potential GDP. In some countries, notably in Latin America and Africa, the public transport system is dominated by the private sector. In the growing conurbations, minibuses and motorcycle taxis – as well as cars – hog the narrow and overcrowded streets and squares, with cyclists, three-wheel cargo vehicles and public transport having to compete for a rapidly diminishing share of the remaining space. Cyclists are pushed to the road margins, where they find themselves in conflict with pedestrians and street vendors over every square metre of space.

Faced with these challenges, local decision-makers are often hopelessly out of their depth. Bent on pursuing the car-centric models of development copied from the Northern countries, they have no strategies to deal with their cities’ burgeoning mobility problems. Transport planning tends to be dominated by engineers and planners whose training – such as it is – focuses on technical aspects, e.g. infrastructural development, improving traffic flows, and congestion management. A holistic approach to urban and transport planning with a focus on alternative transport modes and innovative settlement patterns is often conspicuous by its absence. Besides the lack of integrated strategies and solutions, there is generally also a shortage of reliable data and survey techniques as a basis for solving problems – such as road safety – on a qualitative and quantitative basis. Planners also lack the evaluation skills needed to assess whether measures adopted have been successful and learn lessons, theoretical and practical, from mistakes and failures. As a consequence, many cities are trapped in a vicious circle. They steadily expand their infrastructure, sacrificing more and more valuable urban space and producing even higher levels of congestion, noise and emissions, which they then try to combat using the same methods as before.

Rural mobility

In rural Africa, 90 per cent of transport is non-motorised: most journeys are made on foot. A similar picture emerges in Asia and Latin America. While cities in developing countries have too much traffic, resulting in congestion, rural areas have the opposite problem: here, there is too little transportation infrastructure and few affordable mobility options. The lack of local public transport and poor access to markets can have fatal consequences: in remote areas of Africa, South America and Asia, maternal and infant mortality rates have stabilised at a high level or, in some cases, are still rising, mainly due to difficulties in reaching medical facilities. The food supply in these regions is unstable and breaks down when challenged by even minor droughts, poor harvests or flooding. Many rural communities also lack adequate access to education. In Africa, for example, children often have to walk for hours to reach their primary school and by the time they arrive, they are often too exhausted to learn. Studies show that distance to school is a determinant of learning achievement. Secondary schools are even more thinly dispersed in developing countries’ rural regions and can only be accessed with great difficulty, often at great expense. In short, rural poverty reduction is directly dependent on people’s ease of access to their own fields, a safe and reliable water supply, and markets, schools and health facilities. Conversely, the lack of efficient mobility structures dramatically worsens rural poverty.

Recommendation

Transport planners in developing countries and emerging economies should adopt a differentiated approach to the diverse mobility challenges facing urban and rural areas respectively. In urban areas, forward-looking and efficient urban and transport planning is key. In rural areas, communities’ access to an efficient transportation system must be improved through targeted expansion of infrastructure.
IV. New Approaches to Sustainable Mobility

How can we avoid unnecessary traffic and shorten journeys? How can we ensure that bus and rail travel and cycling become competitive alternatives to the private car? And how can we reduce the overall volume of traffic, both passenger and freight (= tonne-kilometres)? The answer is to create multi-functional compact cities with short distances, integrated transport systems in urban and rural areas, and optimised policies on the siting of industry. This type of strategy will safeguard the supply of goods, facilitate equitable access to markets, jobs and cultural amenities, and boost political participation. This should be combined with a visionary approach to urban design which puts people first and helps to re-establish urban spaces as meeting points and hubs for recreation, social interaction and exchange.

This radical new approach not only involves the transport sector: it must encompass the related areas of urban and spatial planning, architecture, and economic policy. The transport sector must support this transformation with appropriate policy strategies. A significant role, in this context, is played by the Avoid-Shift-Improve (A-S-I) strategy recognised by the international community (see Figure 1).

![Potential strategy responses - reducing GHG emissions](image)

<table>
<thead>
<tr>
<th>Avoid</th>
<th>Shift</th>
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<td>P</td>
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Decision to travel or not to travel and by which mode affects fuel consumption, and therefore carbon emissions:
- Number of vehicles, level of congestion, driver behaviour, vehicle condition, fuel type

![Available instruments](image)

| Planning Instruments (P) | Regulatory Instruments (R) | Economic Instruments (E) | Information instruments (I) | Technological Instruments (T) |

Figure 1: Avoid-Shift-Improve

Source: GIZ, Transport and Climate Change, Modul Se, Sustainable Transport: A Sourcebook for Policy-makers in Developing Cities, Eschborn 2007, p7 (revised by the author)
AVOID

This starts by considering the linkages between mobility and settlement patterns. An area’s settlement density determines the relative attractiveness of the various modes of transport. For example, the significance of the car is inversely proportional to settlement density. An “avoid” strategy should therefore develop compact communities with a mix of functions: housing, recreation, work and supply infrastructures. Whereas suburbanisation is a problem in relation to settlement patterns in industrialised countries, rapid urbanisation is the main problem in emerging economies and developing countries. Accordingly, different instruments must be applied in response to these two scenarios. In the industrialised countries, the landscape is increasingly under threat from urban sprawl, requiring effective countermeasures. One response is to offer (price) incentives to reduce inter- and intra-city journeys and encourage people to opt for car-free mobility. In the developing countries and emerging economies, creating more sub-centres could be part of the solution. Given that in 2050, around 70 per cent of the world’s population will live in cities, the “avoid” element of the strategy merits particular attention from a sustainability perspective.

A highly specific situation exists in the growing number of cities with more than 10 million inhabitants, known as megacities. There are currently at least 30 megacities worldwide, accounting for 10 per cent of the world’s population. They pose immense challenges for the planning and financing of transport and settlement policy, as they require highly efficient and complex transportation systems. What’s more, these systems will have to be developed and implemented while the cities are still expanding.

SHIFT

As discussed in more detail below, the public debate tends to focus heavily on technological solutions such as improving vehicle efficiency and the use of alternative fuels. Demand-side, non-technological measures are often overlooked or regarded as ineffective, even though such measures have a high potential to reduce greenhouse gas emissions through reduced travel distances, number of trips and mode shift to more sustainable, “greener” modes such as local public transport, cycling, walking or car-sharing. A shift to green transport options offers major benefits, however. For example, it reduces the number of road accidents and, in the case of cycling and walking, increases physical activity, with associated benefits for health. Travel Demand Management (TDM) has a key role to play in this context. TDM refers to the packages of urban policies designed to promote a shift to environmentally and socially sustainable modes, through a combination of “push” and “pull” measures. The former include measures such as speed management and a reduction in the supply of parking, while the latter provide service quality incentives for the use of alternative modes.

IMPROVE

Technological innovations – especially fuel-efficient engines, fuel economy standards and alternative fuels – are one way of reducing emissions in the transport sector. However, they pose a number of problems and cannot promote the shift to sustainable forms of mobility unless they are combined with other measures. Low-carbon electric cars, for example, are widely regarded as an alternative to conventional vehicles but raise various issues which are still unresolved, such as their limited range and, above all, how the electricity to power them will be generated. It is doubtful whether megacities such as Lagos, Mexico City or São Paulo will be able to create the requisite infrastructure and generate sufficient electricity from sustainable non-fossil sources. It must also be assumed that the efficiency gains from improved engine technologies will be cancelled out by the increase in the number of motor vehicles and the growth in freight worldwide. What’s more, efficiency gains are often offset by an increase in the number of kilometres travelled. The contribution of more energy-efficient cars to sustainable mobility is therefore limited.

An approach which is based on reducing the transport sector’s dependence on oil by increasing the use of biofuels is also beset with risks. The expansion of biofuel feedstock cultivation worldwide is leading to a massive land-use conflict between food and energy crops (“food vs. fuel”). The resulting land and price speculation is dramatically worsening famines and poverty in developing countries.

No matter how well-crafted, an Avoid-Shift-Improve (A-S-I) strategy can only be successful if it takes account of transport users’ behaviour. The reality is that little thought is given to the negative impacts of today’s forms of mobility. Cars are integral to our present lifestyles and are deeply rooted in our popular culture. For many people, they are also a status symbol. This means that opting to use sustainable forms of mobility instead of the car entails a learning process and a change of mindset. A transformation of our mobility practices can only be achieved if “pull” strategies are put in place.
A number of cities in developing countries and emerging economies are already in the process of transforming their culture of mobility. Examples are Guangzhou in China and Medellín in Colombia. Although transport systems in these countries are under great pressure and institutional options are limited, these cities have made remarkable progress towards the progressive transformation of their mobility culture in recent years. This is widely recognised at international level with prizes such as the Sustainable Transport Award. In all these cities – which also include Seoul, Bogotá and Curitiba, as well as Copenhagen, Amsterdam, Paris, Melbourne and New York in the industrialised countries – the strong political commitment and leadership of mayors such as Jaime Lerner (Curitiba), Michael Bloomberg (New York) and Enrique Peñalosa (Bogotá) have played a key role. All have pursued a visionary goal: to rethink cities as livable and ecomobile communities and people-centred meeting points, with cars merely having “guest” status. 

These political visionaries attach great importance to involving citizens in the decision-making process. They have initiated a public debate about the type of city their citizens want, resulting in a paradigm shift towards sustainable long-term urban planning. This breaks with capital- and infrastructure-intensive urban development in favour of an energy-efficient city which puts local citizens and their needs at the heart of urban development and makes people the benchmark for measuring performance. The outcome is a high quality of urban life. For decades, Bogotá’s residents regarded their city as unattractive and dangerous, but now, they have begun to identify with their neighbourhoods once more. “Design cities for people, not cars”: Enrique Peñalosa’s watchword has transformed Bogotá. The introduction of a bus rapid transit system (BRT), known as TransMilenio, has ushered in a new era of public transport worldwide. More and more cities are also investing in cycling as a convenient form of every-day transport, with young people in particular seeing it as a “cool” way of getting around. New urban cycling cultures are emerging in many cities, with the previously dominant car culture taking second place.

An equally positive development can be observed in Guangzhou, where a bus rapid transit system was opened in February 2010. With around one million passengers daily, Guangzhou’s BRT has significantly higher passenger flows than most of China’s metro systems. It is also the first BRT worldwide to directly connect to a metro system, with integration planned from the outset. Guangzhou has also launched a bike-sharing system with 15,000 bikes at almost 200 stations. Unlike many other cities in China, Guangzhou has begun to re-introduce bike lanes on major roadways, and has opened 5,500 high-quality bike parking positions at BRT stations. In September 2010, the city also opened the Donghaochong Greenway – a spectacular network of green spaces, parks and play areas stretching for many miles through the city and including extensive cycle paths.

V. A New Culture of Urban Mobility: Examples of Best Practice

Recommendation

The extent to which technological innovations in the transport sector can solve current mobility problems is limited. Instead, innovative strategies must be developed which give priority to changing transport user behaviour. Transport and urban planners should focus to a greater extent on the Avoid-Shift-Improve (A-S-I) strategy. The acceptance of sustainable modes of transport requires a collective learning process and a change of mindset. Targeted information and advertising campaigns should encourage a modal shift to attractive, low-carbon transport services, which must be widely available.
Shared goals and strategies

As the recent discussions in the UN Commission on Sustainable Development (CSD) in New York showed, reaching a global consensus on goals and strategies for mobility and transport is not an easy task. Developing countries, and emerging economies in particular, are concerned that reducing emissions will result in high costs and adversely affect their economic growth. They repeatedly emphasise that the main responsibility lies with the industrialised nations, which consume the major share of global resources and produce the highest levels of greenhouse gas emissions.

Nonetheless, the adoption of numerous international declarations recognising the significant link between transport and sustainable development, such as the Bangkok 2020 Declaration and the Bogotá Declaration, are a positive sign. The Partnership on Sustainable Low Carbon Transport (SLoCaT) goes a step further with its call to the UN and national governments to give greater recognition to the contribution that sustainable transport policies can make to the achievement of the Millennium Development Goals. SLoCaT is calling for a sustainability goal to be recognised in relation to transport in order to safeguard universal and equitable access to safe, clean and affordable mobility. On this basis, it is calling for a consensus on indicators and benchmarks to measure progress on sustainable transport policy, mainly based on data relating to transport-sector air pollution and greenhouse gases. The SLoCaT initiative also aims to improve the institutional framework at UN level with the establishment of a global coordinating body responsible for capacity building, data collection, monitoring and regional development. This coordinating body would facilitate a consensus on targets, criteria and indicators, promote knowledge and technology transfer, and oversee linkages with other sectors such as settlement development, energy and health. Development banks and development agencies also have a role to play by adopting the agreed targets and indicators as a basis for evaluating their own policies and programmes.

There have been some positive developments in relation to road safety as well. The United Nations Decade of Action for Road Safety 2011-2020 aims to halve the number of traffic-related deaths by 2025. The measures adopted are intended to improve the management of road safety by establishing specialised agencies, which in many countries do not exist or are poorly resourced. As around 80 per cent of road accidents are caused by human error, traffic behaviour and road safety training are priorities. Other key measures include improving vehicle safety and providing care and support for victims of road traffic accidents.

Financing sustainable mobility

Implementation of transport policy measures depends on the available financial resources and the spending structures in place. Decisions on investment in the transport sector are generally taken at the national level, where much of the funding is spent on road construction and maintenance and on port and airport infrastructure.

Recommendation

Thanks to outstanding political leadership, numerous cities in developing countries and emerging economies have succeeded in reducing private car use and have achieved a significant modal shift to more sustainable forms of transport. More intensive transfer of knowledge and experience at the international level is essential so that other cities and regions can benefit from the lessons learned.

VI. The Role of Global Governance
A change of priorities is therefore crucial in order to increase the sustainability of transport sector investment. Funding for road safety, local public transport and the promotion of non-motorised modes of transport can be generated through taxation or user charges, with systems being operated by the public or private sector or by public-private partnerships. In the developing countries, transport demand is steadily increasing, but additional funding is often unavailable. International donor organisations therefore have a key role to play in financing sustainable forms of mobility in line with targeted criteria. However, transport sector financing has long been neglected by these institutions; like the national governments, they have, for decades, given priority to funding road infrastructure instead. Adequate financing is therefore a prerequisite for sustainable transport sector development in future. The multilateral development banks are likely to become more important stakeholders here: they have already committed to a stronger focus on transport investment in line with sustainability criteria and have announced a 100 billion dollar initiative to fund sustainable transportation projects.

**Recommendation**

The future development and implementation of transport policy and mobility planning in the countries of the Global South largely depend on the action taken by the governments of developing countries and emerging economies, as well as by donor organisations. Both sets of stakeholders should make the provision of investment funding and loans for transport projects conditional on compliance with the sustainability criteria outlined above. Multilateral development banks can also play an important role by charting the appropriate policy course.

### VII. Conclusion

It has been apparent for some time that our modern culture of mobility is unsustainable. It has detrimental effects on the climate and human health, consumes global resources, and is characterised by extreme inequality between richer and poorer social groups, car owners and non-car owners, and industrialised and developing countries.

Relying solely on technical innovations, alternative fuels or specific modes of transport will not solve the problems described. The only solution which offers a genuine prospect of success is an integrated package of measures aimed at avoiding unnecessary travel, reducing distances, providing the most sustainable forms of passenger and goods transport, and maximising the efficiency of transport systems with technological innovations and alternative technologies. Strategies to change public attitudes and encourage acceptance of sustainable forms of mobility have a key role to play. Without a radical change in people’s behaviour, sustainable, future-proof mobility cannot be achieved.

In the developing countries, additional infrastructure will continue to be required in order to promote rural development and improve urban mobility. In the industrialised countries, however, the fossil fuel dependency of transportation systems must be radically reduced in the years to come. The transfer of knowledge, experience and lessons learned must be stepped up, with better resourcing and networking of local and national institutions. Strong political leadership is needed for the transport sector to utilise its full potential to support the attainment of the Millennium Development Goals. National, bilateral and multilateral donors must substantially increase their investments in sustainable transport projects, taking full account of the specific mobility challenges facing the developing countries and emerging economies.

The United Nations has a key role to play in defining shared goals and strategies. The support of key stakeholders – policy-makers and civil society alike – is essential to translate policy recommendations into action. Sustainable, future-proof and equitable mobility can only become a reality if it is based on a broad consensus and is backed by effective social and political coalitions.
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