KfW Development Bank

»» Perspectives on Development Finance

No. 3, 05. August 2019

Urban mobility at a crossroads

Putting the brakes on private transport, accelerating the pace of public transport

Authors: Stephanie Sophie Pons, Jan-Hendrik Müller
Editors: Friederike Bauer, Susanne Brösamle

Cities are facing the enormous challenge of making transport sustainable (socially, economically and environmentally). Buses, trams, bicycles and walking all play a central role. To date, however, motorised private transport has been given priority in the planning of infrastructure and the organisation of public space, putting the environment and the climate under enormous pressure. Sustainability Goal (SDG) 11 "Sustainable cities and communities" aims to counteract this trend. Establishing a transport system that is reliable and accessible to everyone at the same time is an essential part of this process. KfW Development Bank actively contributes to SDG 11 with its projects. To this end, it adopts the "avoid – shift – improve" approach, i.e. avoid unnecessary transport, shift to more sustainable modes and improve technologies.

Today's transport problems

In recent years, motorised private

Transport in India

transport has increased rapidly in emerging economies: China, India and Brazil, for example, are among the countries with the highest numbers of newly registered cars. This is due, on the one hand, to rising incomes and, on the other, to the car's power as a status symbol. This trend also benefits from urban planning that largely revolves around cars. The increase in the number of vehicles is one of the main problems facing cities. In many metropolises, traffic jams, which are associated with heavy air and noise pollution, are already part of everyday life and can dramatically increase travel and transport times. This not only results in considerable local and global environmental pollution, but also in high economic costs. The costs of traffic congestion (losses in productivity, health care costs and fuel consumption), for example, are around 3% of local GDP in Buenos Aires, Mexico City and Dakar.

If, as forecast, the number of private vehicles doubles from 1 billion to 2 billion by 2030, the already immense resources and space used by cars will continue to increase. Carbon emissions will also continue to rise. The growing demand for SUVs exac-

erbates the problem even further: the number of SUVs sold in 2017 rose by 37% in Brazil, 32% in India and a good 13% in China. On average, SUVs today produce 132.5 g of carbon emissions per kilometre and off-road vehicles as much as 162.8 g. By way of comparison, a newly registered vehicle emits an average of 118.5 g/km of carbon.

However, the 724 largest cities in the world, including many in emerging economies, could work to counter the increasing carbon emissions. By making transport more sustainable and attractive, global greenhouse gas emissions could be reduced by up to 1.5 billion tonnes of CO_2eq a year. By comparison, Germany emits about 900 million tonnes of CO_2eq per year.

Getting on the Right Track

In December 2018 KfW Development Bank organised a Development Finance Forum entitled “Getting on the Right Track – the Future of Urban Mobility” to look at how cities, especially in emerging economies, can tackle this change. All experts agreed that successful transport reforms require a shift away from motorised private transport and from the concept of the car-friendly city. In this paper we want to investigate how the proportion of non-motorised and public transport can be increased through appropriate incentives and restrictions on motorised private transport. The push and pull principle is used for a systematic analysis. “Pull” stands for needs-driven mobility services and “push” for the restrictive regulation of motorised private transport.

Pull – making public transport more attractive

A key aspect at the beginning of every journey is actual access to transport services. In terms of public transport, this means: how far is the next stop on foot? And is it easily accessible along barrier-free routes for various user groups, including older users with limited mobility, people with disabilities or women with children? This includes appropriate signs, lifts, ramps or handrails.

The regular travel density is also important when establishing the context. Continuous additional service during base and peak times within a clearly structured route network make public transport more attractive. Meeting the demand for multi-modality, however, requires frequent service and secure connections. A transport network with standard ticketing is recommended here. Measures like these significantly increase use.

Information on departure and arrival times, delays and cancellations displayed at stops and inside the respective vehicles can also make public transport more attractive. This is supported by what are known as “universal mobility apps”. Many existing apps let users select the desired route based on certain criteria such as speed or cost.

Equally important is the feeling of safety, which can be enhanced by good lighting at stops, subways and suburban trains with one continuous car or video surveillance. Here, too, digitalisation is helping to make public space a bit more accessible. The SafetiPin app, for example, was developed to help women in particular feel safer by tracking individual routes and identifying dangers. This concept has won an award and been supported by the Transformative Urban Mobility Initiative (TUMI).

The interior design of transport vehicles is also important. It was found, for example, that the greater the resemblance to the car, the greater the willingness to use public transport. A guaranteed seat and air-conditioning are further incentives.

In addition to improved public transport services, the aim is also to improve eco-mobility as a whole. This includes extending and improving cycle paths and walkways. The goal is to integrate a largely continuous network with reliable signage into urban transportation. Simple structural measures such as a bike lane demarcation contribute to greater safety. Parking for bicycles at the start and destination points are also important. If there are not enough open spaces at ground level, bicycle parking garages are an option. It is essential that cycling and other sustainable forms of mobility such as car sharing, e-scooter rental and public transport are more closely interlinked. Gaps in the transport network can be eliminated with a strategic environmental network. Public mobility services can thus be improved, which gives marginalised sections of the population access to educational and medical facilities, workplaces, etc.

“VLT Carioca” in Rio de Janeiro

»»

Ecocabs in India

After being increasingly replaced by private transport in Indian cities, bicycle rickshaws have been able to re-establish themselves as an important component of urban mobility. Also in the city of Fazilka. Ecocabs Fazilka has not only improved the quality of its vehicles and the safety of each trip, but also accessibility. Rickshaws can be ordered by phone and an Internet-based map service can be used to find the next station, thereby making this mode of transport more attractive.

Push – setting limits for private transport

An attractive public transport system is often not enough to persuade car drivers to switch to buses, trains or bicycles. This is why it is worth considering imposing restrictions on private transport. There are various approaches including

- parking management
- a city toll
- zones restricted to 30 km/h
- limiting registration to cars that meet a minimum standard
- economic incentives (taxes, fees)
- imposing licence fees on car sales

Other measures include increasing fuel prices, introducing a carbon tax and promoting green technology, such as the current support for the purchase of modern e-cars. More regulation and methods designed to change behaviour could reduce car use by up to 30%.

The aim must therefore be to promote non-motorised private transport and public transport, and at the same time to further restrict motorised private transport. This can also be accomplished with smart traffic management, which gives priority to public transport at traffic lights. Or by converting car lanes into bus and bicycle lanes. In addition, converting or continuously demolishing roads and car parks can help to reduce car traffic.

The establishment of car-free zones also reduces traffic and, at the same time, the space available for vehicles. Over 300 cities, including Kigali, have introduced car-free zones.

›››

Car-free zones in Kigali

Kigali's central business district was declared a car-free zone in 2015. This is intended to create public spaces and reduce carbon emissions and air pollution. These measures were implemented because the population of Kigali doubled within a decade, and the urban transport system increasingly came under pressure. The number of car owners also increased from 550 in 2009 to 80,642 in 2011. Kigali has responded to the increased congestion and air pollution by creating car-free zones and expanding local transport. At the same time, car-free Sundays were introduced, allowing the urban population to freely use public space temporarily.

With mobility pricing, users pay their own mobility fees for transporting passengers and goods (effects of mobility pricing 2009). Mobility can be paid for at both regional and national level through:

- taxes/charges
- usage fees
- route charges
- (parking) fees
- commuter flat rates
- weekend tickets

These measures are intended to conserve natural resources, reduce environmental pollution, shift transport and divide it more appropriately between different modes of transport.

›››

Congestion charge in Stockholm

In 2007, the Swedish capital introduced a "congestion charging scheme" for vehicles driving in downtown Stockholm. This congestion charge reduced traffic and pollution because, among other things, more people use public transport.

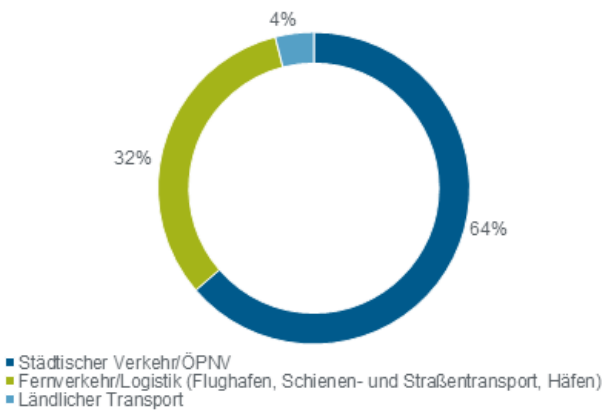
Parking management can also contribute to reducing motorised private transport in cities. Adequate parking motivates people to buy a car and produces traffic. Fewer parking spaces reduce car traffic. The city of Vienna redirected 25% of visitors from cars to public transport with a restrictive parking policy.

Structural measures to reduce car traffic, such as the demolition of roads or increasing prices for parking, require sufficient acceptance by the population, but should not be discouraged due to this initial hurdle.

KfW's role in transforming the transport sector

KfW can give its partners targeted support in establishing sustainable mobility infrastructure and integrating the various modes of transport. Emerging economies can avoid the mistakes made by industrialised countries by leapfrogging (transit-oriented development; pro-poor transport policies). KfW committed a total of EUR 2.9 billion for mobility projects from 2013 to 2018. It takes into account the specific context of each country during implementation. In Colombian cities, for example, KfW supports efforts to consolidate neighbourhoods based on the transit-oriented development strategy to reduce the volume of traffic. The aim is for jobs, shops and leisure activities to be accessible to residents on foot or by bicycle. Another goal is to ensure access to pub-

KfW commitments for transport 2013 – 2018
Total: EUR 2.9 billion



Source: KfW Group

lic transport for longer distances. KfW is financing an intelligent, technology-based transport system in the medium-sized Chinese city of Huainan, which will better regulate the flow of traffic and improve energy efficiency. KfW is supporting the Rwandan capital of Kigali in planning and building a green urban district, which includes environmentally friendly mobility services. Electromobility plays an important role in this project.

Strengthening transport reform on several levels

International goals such as the Paris Agreement, but also (supra-)national goals like the Smart City Mission in India are systematically strengthening the mobility sector. The latter works towards transforming cities into sustainable spaces that serve the needs of their residents. The mobility sector plays a central role in this process. This is also the case in Bhubaneswar, where the Indian government is currently supporting 500 e-rickshaws and the accompanying infrastructure. The goal of strengthening climate change mitigation activities is also pursued at regional level, including by the Rhineland local public transport association, which operates the local public transport network in the German Rhineland region. It introduced a strategic climate change mitigation management system to support municipalities and districts in planning transport and mobility and applying for subsidies.

Conclusion

In order to make urban mobility sustainable in developing countries and emerging economies, it is important to curb motorised private transport and avoid the construction of more roads and car parks. On the other hand, local people need alternatives that replicate the usability and comfort of the car as best as possible. Against this background, the environmental network with sustainable mobility services in particular should be strengthened.

KfW is an important partner in shaping urban transport. It can draw on a large number of examples from Germany and its partner countries. In the past, it relied heavily on providing transport infrastructure. In future, the shift away from motorised private transport will play a greater role in KfW's commitment. Emerging economies need accessible, reasonably priced and environmentally friendly mobility solutions for their growing cities – not more cars on the roads.

Literature

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (2018): Klimaschutz in Zahlen.

Swiss Federal Department of Environment, Transport, Energy and Communications (publisher) (2007): Mobility Pricing Synthesebericht.

Eliasson et al. (2013): Accuracy of congestion pricing forecasts.

Gärling et al. (publisher) (2014): Handbook of Sustainable Travel.

JATO (2018): The global domination of SUVs continues in 2017.

New Climate Economy (2014): BETTER GROWTH, BETTER CLIMATE.

Pitsiava-Latonopoulou et al. 2012: Parking Policies for Supporting Sustainable Mobility.

Statista (2019): The world's largest automobile markets.

United Nations Environment Programme (2013): UNEP Annual Report 2012

ZEIT ONLINE (2017): CO2-Ausstoß: SUV-Boom verschlechtert Umweltbilanz

Photos

KfW Group: p. 1: photo: Florian Kopp.

KfW Group: p. 1: photo: Florian Lang.

KfW Group: p. 2: photo: Kurt Rieckhoff.

Contact

KfW Group
KfW Development Bank
Palmengartenstrasse 5–9
D-60325 Frankfurt am Main
Phone: +49 69 7431 0
Fax: +49 69 7431 -2944
info@kfw-entwicklungsbank.de
www.kfw.de