

# Introduction to Panel 3

## Sustainable transport and land use

Panel leader: **Adriaan Perrels**  
Institute for Economic Research (VATT)

Panel leader: **Yoram Shiftan**  
Technion – Israel Institute of Technology

**TRANSPORTATION ENABLES PEOPLE TO INCREASE** their accessibility to a wider variety of products and services, work places, social and leisure activities.

Henceforth transportation is usually seen as a vital component for the generation of welfare. The political translation of this notion is that accessibility deserves to be enhanced wherever possible. However, nowadays, it is clear that transportation has to grow in a sustainable way to achieve the increased welfare, as otherwise increased air pollutions, congestion and other externalities will diminish these benefits.

The largely unchallenged position of accessibility in transport policy shows in two de facto postulates underlying transport policies of most countries:

- Everybody should have sufficient access to transport services, implying that it is both affordable and physically available (sufficiency of capacity);
- Any person or cargo is in principle entitled to access to any location it is destined to go to.

The first postulate has been – and in most countries still is – an obstacle to the internalisation of external cost (environmental damage, peak capacity/congestion, safety & security, land take). This postulate also provides a main argument for subsidising public transport and various forms of infrastructure. The bottom line is that in many areas transport performance is allowed to attain levels that are neither economically nor environmentally sustainable.

The second postulate relates to the conflicts of interest that arise from the attempts to physically enhance accessibility. In nature areas it may affect bio-diversity or appreciated landscapes, in built-up areas it has spill-over effects on the value and quality of neighbourhoods (both + and -). Var-

ious forms of advanced infrastructure often imply improvement of the accessibility for the users and worsening of the accessibility for non-users (i.e. those using other systems facing barriers created by the advanced systems). With expanding capacities the negative spill-over effects tend to grow faster than the positive ones, but the political incapacity to internalise the external effects (out of fear to deviate from the affordability postulate) heavily curtails the possibilities to correct the mismatch.

When considering energy use in transport and climate change policy, the above mentioned conflicts become apparent at a multitude of levels: local, national, and international as well as in the public and private sector. In the public sector the main problem is about how to steer. In the private sector it is about strategic choices in product development. Hickman and Bannister (3,293) provide a first taste of how such a complicated challenge could be approached in policy, by discussing a scenario of 60% reduction of greenhouse gases in 2030 for the UK transport sector. As elsewhere in climate policy it seems more sensible to produce long term (indicative) targets for transport, which have been explored on the basis of so-called 'back-casting'.

Goods transport is driven by economic growth, international trade, a move to more just in time operation, and redistribution of production locations. This means that volume growth in goods transport is driven by factors that lie outside the realm of transport policy. In the case of international cargo flows the number of currently applicable policy instruments in support of sustainable transport is even smaller, notably for sea and air transport. With steady growing international trade goods transport will get ever more a key position with respect to a radical reduction of the carbon intensity of transportation. Åhman (3,025) and Pastowski

(3,283) take up the matter of goods transport. Åhman shows how some degree of decoupling with respect of GDP has been achieved in Swedish goods transport. It should be noted however that the rearrangements in production (location) and logistics may have led to 'export' of transport emissions. Pastowski concentrates on the significant role of fossil fuel transport in total international transport. Since transport itself is the principal oil using system. The cycle seems to have self-perpetuating features, meaning that oil products are carried around the world because the transport sector needs so much of it, not the least for the purpose of carrying around oil products.

The interaction between transportation and spatial organisation, in this case especially at the level of urban regions, is discussed by three authors, albeit in rather different approaches. Schipper *et al* (3,079) introduce indicator approaches to be used for the development of sustainable transport policies in various South- and East-Asian mega cities, which experience large economic and demographic growth plus a quick proliferation of motorised vehicles. Pfaffenbichler and Emberger (3,006) present results of simulation experiments with an integrated land use and transport model for Vienna. An innovative approach to plan and offer parking space is compared with alternative measures aimed at reducing car traffic (such as cordon charges, and kilometre charges). The new parking system seems to be the only alternative that combines lasting substantially lower emissions with economic benefits. Perrels (3,109) analysed the impacts of various urban features on people's mobility in comparison to mobility in other types of municipalities in Finland. The – potentially – smaller distances and better supply of public transport and non-motorised infrastructure in larger urban centres is compensated by the counter-effect of higher mobility incitement of cities. The resulting per-capita emissions of city dwellers and others don't seem to differ much.

The above mentioned six contributions deal with prospective and retrospective scenario studies on the one hand and analysis of urban systems on the other hand. These are the themes of the first day of the transport panel. The second day of the transport panel concerns contributions, that deal with particular types of transport policy instruments (taxation, behavioural, facilitating, etc.) and which often include a discussion of observed effectiveness of these instruments.

Herry (3,106) discusses the details of mobility management including various measures to encourage employees to shift to environmentally friendly modes and spatial planning, showing the effects that the provision and stimulation of travel alternatives can have, provided there is a partnership between businesses and the authorities in getting incentives to develop mobility management schemes. Wilke and Bongardt (3,192) deal with car sharing, which is another element in the attempts to provide more choice in ways to organise one's travel needs. The authors are concerned about the extent car sharing organisations are struggling with the balance between an attractive business and the net ecological benefits of car sharing. De Boer's and van Goevenden's (3,276) paper demonstrates how policies outside the realm of transport (in this case secondary schooling efficiency) are affecting transport. Considering that teenagers form

a group that is starting to adopt travel patterns that are hard to change later on, the impacts of school concentration can be significant in the long run, next to the direct effect of longer trips.

Students play also a role in the next paper of Polain and Lannoy (3,061). In this case different groups of students, with and without free seasonal public transport cards, are assessed and compared to study the effect of transit fare on their travel behaviour and mode choice. The next two papers are even more explicitly focusing on the question whether particular types of policy instruments are effective. Wallis (3,284) discusses the several taxes related to car ownership and use. The comparison between EU member States makes one wonder how difficult it is to succeed in a policy mix in which – despite favourable income levels – car ownership is relatively low and fuel economy high. Finally, Anable *et al* (3,275) present an overview of so-called 'soft measures' (i.e. non-obligatory). Examples are work place travel plans, teleworking, car sharing, etc. The paper claims that for the UK these measures together could culminate in a reduction of at least 3% and at most 11% of current UK transport emissions.

The poster paper by Veitch (3,181) has features of both the first and second session day's themes. It presents various policy instruments within the framework of a market transformation approach, for which the prospective guidance is provided by longer term targets.

Overall, the collection of papers provides an analysis of how various measures can provide a more sustainable transportation system. If we believe the results presented in these papers, we can be optimistic about the possibility to design a set of policies to attain a more sustainable transportation system and the provision of good accessibility may not necessarily contradict sustainable growth. More research is needed to better quantify the effects of these various measures, to be able to analyze a combination of various policies, and to develop methods and tools to design the best package of policies for each situation to provide the necessary accessibility without harming sustainability. A significant hurdle not so much discussed in the collection of papers presented this time, is the socio-political acceptability of comprehensive and more far reaching measures. Rather often political decision makers are capitulating beforehand for perceived opposition or various interest groups manage to disable crucial aspects of a policy package (see also Himanen, Lee-Gosselin and Perrels, 2004). The breakthrough of a toll system in central London can be easily matched with counter evidence such as the failure of a similar proposal in Edinburgh and the stranded policy plan for road pricing in the Netherlands. So, research and development may enable us to reduce confusion, but that still leaves us with the consternation linked to either thorough policy revisions or grim business-as-usual scenarios.

## REFERENCE

- Himanen, V., M. Lee-Gosselin, A. Perrels (2004), Impacts of Transport on Sustainability: Towards an Integrated Transatlantic Evidence Base, Transport reviews, Volume 24, No.6, pp.691-705.