1.

The Challenges of Mobility

by Emin Tengström

1.1 The trends towards increased mobility

In all modern societies, people tend to increase their mobility for a number of reasons: they travel to their jobs, maybe they also travel in their jobs, and for different services: to visit supermarkets, hospitals, libraries, etc.. A substantial proportion of their mobility is, however, associated with their leisure: they visit friends, go to sport establishments and on holiday trips.

An increasing percentage of all these trips is carried out by means of a private car. The role of automobility (to use a term in American English) therefore becomes more and more important.

At the same time, increased commercial contacts lead to increasing volumes of transported goods, a substantial part of which are carried on the roads by a growing number of lorries.

1.2 The costs of increased mobility

The dramatic growth of transportation has its costs. In the first place, it is necessary to develop the infrastructure of transport: more and better roads, more efficient railway systems, seaports and airports etc. This costs a lot of money and substantially influences the use of land. In many cases, congestion both on land and in the air can no longer be compensated for by increasing investment in infrastructure. Today we can identify certain limits on the further expansion of transport infrastructure.

Secondly, the increased level of transport has led to a great number of victims, particularly on the roads. Since the invention of the motor car, 17 million human beings world-wide have been killed in road accidents. A number of costly measures has been introduced in many countries to reduce this problem but, still, the number of victims in road accidents is very high. On the roads of the present European Union (comprising 15 countries), about 50,000 people are killed every year and many more are seriously injured.

Thirdly, the present intense activity in transport requires an input of natural resources to construct vehicles and infrastructure and to drive the vehicles. The present consumption of natural resources in the transport sector is far from being sustainable in the long-term.

The most urgent problem today is not the use of different material for vehicles and infrastructure but pollution and the use of energy. Materials can be and often are recycled. The energy consumption of the transport sector is much more problematic. More than half of the world consumption of petroleum goes to the transport sector. In many motorized countries, this figure is much higher.

We know, by experience, that growing incomes mean increasing demands on mobility, not least on car-ownership. Being able to travel has gained a firm position in the hierarchy of needs and priorities of individuals, households and firms in most countries and cultures. (Chapter 2).

1.3 Globalization of a high level of mobility

Looked upon in a global perspective, these problems appear still more serious: many countries outside the OECD countries are today becoming motorized at a fast rate. It is reasonable to speak about a globalization of automobility. A dramatic increase in mobility is also characteristic of the fast motorization phase. This development will probably lead to a future crisis in the supply of energy for the transport sector. Certainly, the energy-use of motor vehicles can be made more efficient and new energy resources will be found. However, this will probably not be enough to create sustainable transport systems all over the world.

Other problems are due to the output of emissions from energy-use. Some of the emissions can be reduced or eliminated by "end-of-pipe" technology. The introduction of catalytic converters has, for instance, substantially reduced the emissions of NO_x (how much is often a matter of dispute). No such solutions are available in the case of carbon dioxide. Here, one

Transport energy amounts to some 20 per cent of total final energy- use in Europe. More than 90 per cent of this is based on petroleum fuels. Passenger transport accounts for about two-thirds of total transport energy. Energy-use in the transportation sector is a major source of air pollutants. These pollutants contribute to several local, regional and global environmental proble (Chapter 3).

At the same time, however, transportation contributes quite considerably to the gross national product (GNP) of a country. It is usually estimated that every tenth Swedish krona is spent on motorized transport (the car industry, car services, transport companies, public transport, etc.). In Germany, according to similar estimates, every seventh Deutschmark is spent on motorized transport. (Chapter 5)

is obliged to shift to fuels which are not based upon fossil energy. In California, the authorities have made it compulsory for the big car makers to produce and sell a certain number of "'zero-emission vehicles' (ZEVs). Today this means electric cars. It is still uncertain, however, to what extent consumers are going to buy these new vehicles.

The emission of carbon dioxide is a serious threat to the climate. This problem is continuously studied and evaluated by an International Panel on Climate Change (IPCC). The Panel is today convinced that there is an ongoing increase in the amount of carbon dioxide in the atmosphere and that this increase is man-made. The future effects of this increase are still very uncertain but the associated risks are substantial. A big switch from fossil energy to other more sustainable forms of energy will expose mankind to a difficult challenge.

Again, it is important to remember that the demand for energy will probably increase rapidly in the countries outside present OECD: eastern and central Europe, China, India, and the fast-growing economies in south east Asia and in Latin America. These countries are today defending their rights to use substantial percentages of the available 'ecospace' (to use a term common in OECD language) in the future, that is, the ability to emit various substances without threatening the long-term sustainability of society world-wide.

1.4 The challenge of sustainable mobility in the Baltic region

To make the mobility of people and goods sustainable is no easy matter. A sustainable society requires, however, long-term sustainable transport systems. We thus need to address these questions. In this booklet we are going to describe some current problems of the transport sector and the possibility of sustainable mobility in the Baltic region in the European context.

It is of primary importance to know about current mobility patterns in the different parts of the region and about the driving-forces behind the mobility trends. It is also important to learn about the current environmental impact of traffic in order to estimate to what extent existing transport systems are not sustainable. The situation in the post-communist countries in the region is also of special interest. To what extent is their situation unique? Passenger transport in Poland and its current transformation will be presented as an example.

The first part of this booklet - Chapters 2–4 – thus describes some aspects of the present transport situation in the Baltic region. In the second part – Chapters 5–9 – we will discuss the possibility of creating efficient and safe transport systems which are also sustainable in the middle and long term. This discussion is partly very general (as problems relating to the non-sustainability of transport are very similar in most countries) and partly focuses on the particular possibilities in the region. We do not try to present blueprints for the future but we try to emphasize the social and political processes in our discussion. The reason is that we believe that the outcome of the process of change is very much determined by complex social and political factors.

We describe however – Chapters 6–7 – some more or less efficient policy instruments which may be used in the future. At the same time, we stress the importance of life-style changes – Chapter 8 – as an element of the process of change. The problems of and possibilities for freight transport are dealt with in a particular chapter.

As already indicated at the beginning of this paragraph, it is no easy matter to make the mobility of people and goods sustainable. In the third and final part of the booklet – Chapter 10 – we will therefore discuss the barriers to the implementation of transport policies which aim at sustainability. We believe that it will be easier to overcome these barriers if we are aware of them from the very beginning. The booklet will end on an optimistic note.

The organisation of the booklet

PART I
The present situation in the Baltic region

Chapter 2 The development of mobility

Chapter 3 The cost of transportation – energy use and environmental impact

Chapter 4 Poland – the private car and public transport in conflict

PART II
The possibility of creating a sustainable transport system in the Baltic Region

Chapter 5 Approaches to sustainable mobility

Chapter 6 The technical solutions – improved transport technologies

Chapter 7 Economic policy instruments

Pages 31–32 Urban planning instruments

Chapter 8 Life-style and mobility

Chapter 9 Freight transport – how to make it sustainable

PART III
Barriers to the implementation of new transport policies

Chapter 10 Barriers to the realisation of a sustainable transport policy