Sustainable Urban Transportation: Learning From Success Stories of Europe

Sustainable Transportation in a Nutshell

Sustainable transportation, which is also often called sustainable mobility, is a term that became very popular in the last 10 years especially when many international institutions started to seriously combat climate change issues.

Sustainable transportation refers to a transport system that fulfils the three pillars of sustainability: People (social sustainability), Planet (ecological sustainability) and Profit (economic sustainability). The People dimension in the transportation framework put the wishes and needs of the stakeholders as a central point. It refers also to the quality, liveability and accessibility of the city. In this context, special attention must be paid to strengthen socially weak areas in the city.

Furthermore, transportation solutions must fulfil the demand of users, not only in the present but also in the future. The Planet dimension refers to, amongst others, the reduction of CO2 emission and other greenhouse gases. Noise, spatial use and quality are also important planet themes for the transportation sector. Profit, or economic dimension, refers to sustainable traffic and transport system with lower social costs such as less environmental impact, less accidents and less traffic delays. This dimension also includes the economic vitality of cities and city centres.

Three pillars of sustainability (source: www.nizo.com)

Sustainable transportation challenges in different continents

The concept of sustainable transportation has been globally spread and accepted because the transportation sector accounts for approximately 15% of global greenhouse gas emissions. However, it is interesting to see how different every country in the world is addressing this issue. When it comes to promoting sustainable transportation, public transport and non-motorised transport (i.e. cycling and walking) are mostly the prominent modes in the transport policy development as these modes emit less emission than cars and reduce social disparities.
Asian countries have specific challenges when it comes to promoting sustainable transportation; since much of the world’s population is concentrated in Asia. In Asian countries with megacities (cities with a total population in excess of ten million people) such as Indonesia and India, the transportation system is characterized by improper public transport services and absence of safe and continuous non-motorised transport (NMT) infrastructure. A mass transit system mostly exists, but the capacity cannot keep up with the demand. As a result, the number of cars and motorcycles in traffic increase significantly every year because people cannot rely on public transport and do not feel safe to walk or cycle.

African countries are generally characterized as developing countries where income disparities are very high. The rich performs their mobility with cars while the poor (which counts more) mostly walk to go to work. However, policy makers fail to see this high NMT demand as an opportunity to promote sustainable transport. Instead of constructing a safe and comprehensive NMT infrastructure, many roads in Africa are designed for cars. As a result, pedestrians and cyclists become the most vulnerable road users and account for a significant percentage of all road fatalities in Africa.

The sustainability concept in the Middle East was started to attract international attention when Masdar City was initiated to be the first zero carbon city in the world, characterized by a large scale zero emission transport system plan. In the last decade, the Middle East countries have also invested heavily in mega developments of mass transit systems. Think of for example the prestigious Dubai Metro and the coming Riyadh and Doha metros. In terms of NMT infrastructure, the Middle East has not achieved much yet as climate has been the main challenge to promote cycling and walking.

The Middle East countries have an advantage in comparison to European countries. In the Middle East, it takes much less time than in Europe to realise a transport project from initiative to construction phase. In Europe, lots of time must be invested to reach a consensus among different stakeholders. This advantage in the Middle East can be seen as an opportunity to realise many more sustainable transport projects in the near future.
Europe is mostly considered as the world’s best practice of sustainable transport as most European countries have high quality NMT infrastructures and a well developed public transport system (and currently at the stage of greening it). Despite this achievement, Europe is still struggling to reduce car traffic, which counts for almost 75% of European passenger transport modal split. But if we look at the modal split in European urban areas, the figures are completely different. In the city of Amsterdam for example, the mode share is 66% for NMT (which is the highest in the world), 11% for public transport and 23% for the rest of motorised modes. These figures change slightly when we look at the whole City Region of Amsterdam (which includes other areas around Amsterdam), i.e. 56%: 9%: 35% (1). This shows that public transport and NMT modes are undoubtedly working at their best in urban areas.

Mobility of today and tomorrow

The main reason of the success of Europe in increasing the mode share of sustainable transport modes is because the policy makers are successful in defining who the road users are, which are not only motorised mode users but also public transport passengers, cyclists and pedestrians. This is an essential base when they develop transport policies in which all road users have the same right to be able to safely perform their mobility. As a result, the city and its transport infrastructure are designed to accommodate the mobility needs of these road users. There is plenty space for car traffic, cycle paths, sidewalks and (occasionally) dedicated public transport infrastructure.

Moreover, countries that are successful in promoting sustainable mobility are those that are taking the following megatrends into account:

1. **Peak car.** Many experts believe that car use would saturate and then remain reason-ably constant or will fall in a sustained manner.

2. **Increasingly urban population.** By 2050, 70% of the world’s population is expected to live in urban areas from the current proportion of 55%.

3. **New lifestyle of youth generation.** The young generation prefers to live in the city and they are more interested in new gadgets and social media than having a car.
4. **Increase in environmental awareness.** People travel more than decades ago and this makes the transport sector more responsible for air emissions. Reducing emissions from the mobility sector will be a more and more important agenda of policy makers.

5. **Scarcity of fossil fuels.** Even though the current oil price is decreasing, fossil fuels are running out.

By taking these megatrends into account, policy makers are very much aware that the most important transport problems are often related to urban areas. They focus their sustainable transport investments in the urban areas rather than in the sub-urban. European cities that are developed from a policy that defines road users and addressing the social trends correctly have common characteristics: a strong Transit Oriented Development concept where activities are centred around the main public transport stations to promote the use of public transport, mixed spatial use (living, working and leisure area) in order to reduce mobility demand, high quality public transport in the city with an excellent travel information system, car free city centre in order to promote cycling and walking and to increase liveability of city centres, and strong parking regulations in the city to reduce car traffic.

6. **Flexibility of society.** The rapid development of information technology has created ‘a new way of working’ where people are more flexible (in time and place) in performing their activities.

7. **Population ageing.** Population ageing affects transport system in the sense that safety, reliability and accessibility criteria become more important.

---

Car free city centre in The Hague, the Netherlands

Sustainable transport integrates transport plans into overall urban planning, which not only results in a better transport system, but also a better city.