

Social, economic and environmental effects of Dutch cycling policies

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The Netherlands, cycling country

The Netherlands is the number one cycling country in Europe. Even so, on national, provincial and municipal levels policies are put in place to make cycling even a more important part of our mobility. The social, economic and environmental advantages are strong motives for these policies, but it is important to realise that over more than a century the Dutch have gained a leading position as a cycling nation, even before such pressing advantages were evident. Cycling is strongly integrated in the Dutch culture.

Geographic and demographic circumstances may have played a role in the prominent position of the bicycle in Dutch culture. Most parts of The Netherlands are flat which makes cycling easy, although the introduction of e-bikes have made this geographical advantage less important. The country is small and densely populated, so distances are relatively short. And long before social, economic and environmental advantages became a factor of consideration, even more than a century ago, the Dutch cyclist infrastructure got serious attention. Even at the beginning of the twentieth century separate cycle tracks were constructed and road signs indicating cyclist routes were erected.

Illustrative of the strong cyclist culture, the roots of the Dutch pendant to the British Automobile Association (AA) or the French Automobile Club Association lie not with the automobile, but with the bicycle. The Royal Dutch Tourist service ANWB (www.anwb.nl) is a Dutch association for traffic and tourism, founded in 1883 as the Dutch Cyclist Association. This organisation has from the beginning stimulated the realisation of separate cyclist tracks and routes. With more than 4 million members it is the largest association in The Netherlands and a powerful lobbyist, although some critics might argue that nowadays ANWB as the main supplier of breakdown service (since 1946) has become more a car lobbyist than a bicycle lobbyist.

As a result of more than a century bicycle friendly policies The Netherlands have a favourable infrastructure for cyclists. There are more than 35,000 kilometres of cycle paths (CBS, 2015). Train stations have guarded bicycle parking's. At Utrecht central station from spring 2019 the world's largest

bicycle parking will receive up to 12,500 bicycles¹. Throughout the Netherlands special signposts (red on white) indicate the best route for bicycles.



The Dutch have more bicycles than people. On a population of over 17 million there are 24 million bicycles of which 2 million e-bikes. More than one-quarter of all trips (27%) made by Dutch residents are travelled by bicycle (For comparison, number two is Denmark with 18%. France 3%. UK 2%). That means a yearly total of 4.5 billion bicycle trips, spanning a distance of 15.5 billion bicycle kilometres. In urban areas cycling is even the most important home-work way of transport, although there are important differences in the figures per city² (Harms & Kansen, 2018).

The cultural aspect may be reflected in the difference in bicycle use between the Dutch and non-western immigrants who make significantly less use of the bicycle. Nonetheless with 21% of made trips by bicycle even these newcomers in The Netherlands use the bicycle significantly more than residents of most European countries.

The advantages of cycling

The advantages of cycling are numerous and have been thoroughly researched. We can discern environmental, spatial, social, health and economic advantages.

In an age where climate and environment are growing concerns the bicycle offers an environmental friendly alternative means of transportation. Each 7 kilometre by bicycle rather than by car saves an emission of 1 kilogram of CO₂, 1,5 gram of nitrogen oxides and 7 milligram of particulate matter. Replacing all these short car trips by cycling would save roughly 2.0 megatons of CO₂, 2.6 kilotons of nitrogen oxides and 0.13 kilotons of particulate matter yearly. As for reduction of traffic noise, halving of motorised traffic means 3 dB noise abatement (Harms & Kansen, 2018; Hendriksen & Van Gijlswijk, 2010).

In urban areas where space is scarce the spatial advantages are evident. A moving car takes 28 times the space of a bicycle. A parked car takes 10 times the space of a bicycle (Van Liere, Beens & Knol, 2017). Moreover, in urban areas, parking a bicycle in the vicinity of one's destination is far easier than parking a car and when traveling by bicycle a time of arrival can be estimated more accurately (Harms et al., 2017).

The earlier mentioned environmental advantages also have a positive effect on health (De Hartog, J., et al. 2010; Nijland, 2017). In combination with other health factors, such as the healthy daily exercise posed by cycling, the health effects of cycling are important. Regular cycling improves the feeling of well-being, both physically as mentally (Singleton, 2018). Moreover it encourages social interaction, which not only gives a health advantage, but also contributes to social cohesion (Te Brömmelstroet et

¹ <https://www.utrecht.nl/wonen-en-leven/verkeer/fiets/fiets-stallen/fietsenstalling-stationsplein/>

² For instance Zwolle 49%, Utrecht 40%, Amsterdam 35%, Rotterdam 22%.

al., 2017). Daily use of the bicycle going to work or education reduces the risk of premature death by 41%. The measurable effect applies in different degrees to different diseases cancer, heart failure, diabetes, depression and others.

Economically cycling is also a sound concept. The bicycle offers an easy, cheap and flexible means of transportation that is available at any given time (Harms et al., 2017). Costs of cycling are much lower per kilometre than others forms of transportation. The annual costs of cycling range from 175 to 300 euros. By comparison: the costs involved in driving a car range from 2500 to 8500 euros a year, based on an average annual mileage (Hendriksen & Van Gijlswijk, 2010). In urban areas a kilometre by bike yields 0.65 euro social benefit whereas cars cost 0.37 a kilometre and a bus costs 0.29 euro a kilometre (Decisio, 2017; Harms & Kansen, 2018). Infrastructure cost per traveller kilometre is 0.03 for bicycle, 0.10 for cars, 0.14 for buses and 0.18 for trains (Harms & Kansen, 2018).

Developments and underlying policies

Technical advancement, especially the development of the e-bike, brings new possibilities and the results are already visible. The use of the e-bike for recreational purposes is growing rapidly among the over sixties. At the same time there is a rise in longer distance commuting to work by e-bike particular among cyclists in their forties and fifties and a growing use of the e-bike for home-school purposes among the under thirties (Harms & Kansen, 2018).

Public transport policies have broadened from single type to chain or system approach. This means for instance investments in bicycle parking facilities at train and bus station. Also combined subscriptions are offered, where the commuter coming from home by bike, can park the bicycle at the station, travel by train and/or bus and subsequently use a public bicycle form the station to work or study.³ In 2015 there were already 277 stations with public bicycles, 177,000 subscriptions and 1,9 million rides.⁴



Separate bicycle lanes in urban areas and bicycle paths alongside provincial routes are normal in The Netherlands. The infrastructure however is modernised, for example with bicycle friendly roundabouts (Van der Wijk, 2012). Relatively new is the development of bicycle fast tracks. The aim is to have 675 kilometers of fast tracks in 2025 (Ter Avest & Coffeng, 2015).

³ <https://www.ns.nl/deur-tot-deur/ov-fiets>

⁴ <https://www.crow.nl/mobiliteit-en-gedrag/weblog/november-2016/het-geheim-van-de-ov-fiets>



The national administration, the association of provinces (IPO), the association of municipalities (VNG), the union of water-authorities, the transport regions, several market parties, several knowledge institutes and several bicycle partnerships have joined forces under the name “Tour de force 2020”.⁵ They have agreed on a program to stimulate cycling (Tour de force 2020, 2015). Main objective in this program is to increase the number of bicycle kilometres in the period 2017-2020 with 20%.

In 2017 the national government has reserved 100 million euro for co-financing provincial and municipal bicycle infrastructure (VVD, CDA, D66 en ChristenUnie, 2017). It is provinces and municipalities that have the initiative to realise the necessary infrastructure. For example the city of Amsterdam has developed a bicycle masterplan for 2017 – 2022 with a budget of 351 million euro (Gemeente Amsterdam, 2017). This is more or less the same figure that the Macron administration wants to spend in that period on stimulating cycling for the whole of France (République Française, 2018).⁶

How can other countries benefit from the Dutch example?

The advantages of cycling shown in the Dutch case can be copied to other countries. Setting the right conditions will take effort and investments on national, regional and local levels. In regard of the economic advantages demonstrated in the Dutch case it would be a sound policy to invest in cycling infrastructure. Public transportation could play an important role offering smart combinations of bicycle and public transport. Flanking policies such as tax advantages when commuting by bicycle could offer further stimulus.

There is however more than a technical and financial challenge. The use of the bicycle as an obvious and natural option for commuting to work or study is also a question of behavioural patterns, in other words culture. The Dutch have a strong cycling culture build up over more than a century. Changing the behaviour of people will take time and effort. The advantages of cycling should be clearly and repeatedly communicated.

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⁵ <http://tourdeforce2020.nl/>

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