THE PEP Partnership on Cycling

Pan-European Master Plan for Cycling Promotion

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1 VISION AND OBJECTIVES

Our vision is promoting and making cycling to contribute to sustainable livelihoods, better environment, health, safety, social inclusion and economic prosperity and overall to improve the quality of life of our citizens. To this end we are acknowledging cycling as an equal mode of transport and having developed the pan-European Master Plan for Cycling Promotion.

By promoting cycling the pan-European Master Plan for Cycling Promotion will contribute to

- sustainable economic development and stimulate job creation (THE PEP Priority Goal 1) - cycling has a high economic potential in particular, the cycling industry and cycling tourism. In the pan-European region the number potential jobs connected to cycling was estimated to 750,000.
- managing sustainable mobility and promoting a more efficient transport system (THE PEP Priority Goal 2) - already approximately 42 billion passenger-km have been replaced by cycling in the pan-European region.
- Promoting quality of life through physical activity reducing emissions of transport-related greenhouse gases, air pollutants and noise (THE PEP Priority Goal 3) - it is estimated that doubling the share of cycling will reduce GHG emissions by 8 Million summing up to 1.1 Bill €. indirect economic benefits per year in the pan-European region.
- promoting policies and actions conducive to healthy and safe modes of transport (THE PEP Priority Goal 4) underlined by the estimation that doubling the current status of cycling would prevent 30,000 premature deaths and a related annual benefit societal value of 78 Billion Euros resulting from indirect economic costs.
- integrating transport, health and environmental objectives into urban and spatial planning policies (THE PEP Priority Goal 5) - the incorporation of the needs of cyclists, especially providing cycling infrastructure and enabling connectivity, accessibility and multimodality when integrating transport, health and environmental objectives into urban and spatial planning policies.

To achieve our vision, we have defined the following objectives to implement by 2030 for the pan-European region:

- Increasing cycling in every country and double cycling
- Developing and implementing national cycling policies in the member States of UNECE and WHO supported by National Cycling Plans
- Increasing safety of cyclists’ in the member States of UNECE and WHO by halving the number of fatalities (and serious injuries) of cyclists per 1000 kilometre cycled in a year
- Integrating cycling in health policies
- Integrating cycling into land use, urban and regional planning incl. infrastructure

To monitor the progress in achieving these objectives we will develop, improve and follow these indicators:

- Modal share of cycling
- Number of passenger kilometres cycled (per capita)/per year
- Number of national cycling plans (status: developed, adopted or implemented)
- Number of fatalities (and serious injuries) of cyclists per 1000 kilometre cycled in a year
- Number of countries applying the HEAT Tool
- Km of cycle infrastructure
- Number of bicycles per 1,000 inhabitants/per household
- Number of bicycle sales

We will consider 2020 as baseline for our objectives and we will collect the necessary data (see recommendation 8.1).

**Our political mandate**

Our vision is based on the decision of the ministers for transport, health and environment in their 4th high level meeting on Transport Health Environment in Paris 2014 to initiate the development of a pan-European Master Plan for Cycling Promotion, supported by guidelines and tools to assist in the development of cycling promotion policies at the national level.

The elaboration of the master plan has been undertaken within the framework of the Transport, Health and Environment Pan-European Programme (THE PEP) Partnership on Cycling jointly initiated by the Austrian Federal Ministry of Sustainability and Tourism and the French Ministry for an Ecological and Solidary Transition. In the Partnership 25 countries of the United Nations Economic Commission for Europe (UNECE) and WHO Regional Office for Europe (WHO/Europe) region are working together to take their share in the promotion of cycling.

Supported by the secretariats of the UNECE Sustainable Transport and Environment Divisions and the WHO/Europe, THE PEP is a unique policy platform that brings together the ministries of transport, health and environment. Doing that, THE PEP acknowledges the importance of linking these different sectors.

With its objectives and recommendations, the pan-European Master Plan for Cycling Promotion will support the implementation of the five THE PEP Priority Goals. Their achievement needs setting action. In order to support member States of UNECE and WHO/Europe in cycling promotion, the pan-European Master Plan is providing recommendations which are based on available state-of-the-art evidence and good practices from all over the UNECE Eurasian landmass.

**The recommendations**

The recommendations given in this document are meant as a catalogue of actions for cycling promotion. Member States can identify which ones to apply to their needs and requirements depending on the administrative system (responsibilities for cycling, where defined, may be split across different government sectors and between different administrative levels, not only at the national level, but also at the regional and local ones), the geographical conditions (climate, etc.) and other country specific framework conditions. Thus, it is up to each country to choose the most relevant and suitable actions to achieve its own objectives with respect to cycling.

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1 Armenia, Austria, Belgium, Bosnia and Herzegovina, Czech Republic, Denmark, Finland, France, Georgia, Germany, Hungary, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Poland, Romania, Russian Federation, Serbia, Slovak Republic, Slovenia, Sweden, Switzerland + European Cyclists’ Federation ECF, UNECE, WHO
Our target audience

In numerous cases, also because in many countries the responsibility for cycling is devolved at subnational levels, these regional and local authorities have done and are still doing a great job being the catalysts and engines of cycling promotion throughout the pan-European region. However, to continue performing this function, and possibly further enhancing it, local and regional levels of government need as much support (financial, legislative, political, etc.) as possible from the national level. Having that in mind and despite all differences in competences throughout the whole region, the main target group of the masterplan are the national authorities. As cycling promotion cannot be done by just one ministry, it needs the cooperation between (or inter-agency agreements) different ministries dealing or being touched by cycling (most frequently, this would include national ministries of health, environment and transport, and in some cases also ministries of infrastructure, interiors – e.g. in relation to injury prevention, road safety, tourism). The masterplan addresses national authorities in their role as coordinators of countrywide activities, involving all other relevant authorities and stakeholders, as applicable.

With that cycling fits perfectly in the field of action of THE PEP acting as a unique policy platform that seeks to encourage transport policymakers and urban planners to consider the health and environmental impacts of transport and address them through integrated policy approaches at national level.

However, the masterplan also meets the level of international policy as some recommendations within this document indirectly address international inter-governmental bodies, such as the European Union, WHO, UNECE and International Financing Institutions. These bodies are asked to support national authorities to advocate at international level for change. As countries are members of these international organisations and institutions they have a powerful voice in the decision-making process and can thus influence activities in favour of cycling at international level, too.

The above-mentioned authorities, institutions and organisations are not only target groups but also (besides the International Financing Institutions) direct beneficiaries of the activities set by the masterplan. Ultimately, civil society (including the private sector including the bicycle economy) is the final beneficiary.

Acknowledgements

The master plan has been developed cooperatively among the members of THE PEP Partnership on cycling coordinated by the Austrian Federal Ministry of Sustainability and Tourism and the French Ministry for an Ecological and Solidary Transition. Individual partners have taken over the responsibilities to elaborate the different topics and chapters to be covered by the masterplan. Main content related input was given by:

- Austrian Federal Ministry of Sustainability and Tourism supported by the Environment Agency Austria
- Belgian Federal Ministry of Transport
- German Ministry of Transport and Digital Infrastructure supported by TÜV Rheinland Consulting Ltd.
- French Ministry for an Ecological and Solidary Transition
- Hungarian Ministry of Development
- European Cyclists’ Federation
Several meetings of THE PEP Partnership on cycling were organised during the elaboration of the master-plan to incorporate the feedback of national cycling coordinators/officers from 25 countries. Representatives of the other target groups were invited to the meetings to discuss the recommendations and to provide inputs.

Furthermore, feedback of the national ministries of transport, health and environment was given during the annual meetings of THE PEP Steering Committee.
2 CYCLING IN THE PAN-EUROPEAN REGION

Cycling is a success story! The bicycle was invented two centuries ago. Its current worldwide renaissance started more than a decade ago. Today, the number of bicycles sold in Europe, outnumber the newly registered passenger cars. Public bike-share systems have been implemented in more than 800 cities on four continents, sustainably meeting the needs for transport and access to services, jobs, education, amenities and leisure to an increasing number of citizens'.

However, the conditions for cycling in the pan-European region differ a lot. Some countries already have a long cycling tradition with a high share of its population cycling, whereas in other countries the importance of cycling for transport, health, environment and/or the economy is barely recognised so far.

In spite of significant challenges in the statistics related to cycling, it is estimated that cycling accounts for a modal share ranging from 27% to almost 0 % in the different countries in the pan-European region, with the Netherlands and Denmark being the countries with the highest levels of cycling.

Figure 1: Share of bicycle use as a percentage of total number of trips in several countries

Exemplary approaches in cycling-oriented countries show that cycling needs should be promoted as equal component of an integrated transport and mobility policy. This requires a powerful political support at all levels in order to develop a so-called “cycling culture” in a country. According to recent European Cyclists’ Federation’s (ECF) research on national cycling policies/cycling plans and based on a continuous update of this information by the actively involved member states of THE PEP Partnership 16 countries already have national cycling plans (NCP) in place. These are: Austria, Belgium (resp. Flanders/Wallonia/Brussels), Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Luxembourg, Netherlands, Norway, Slovak Republic, Sweden, Switzerland and United Kingdom (England/Scotland/Wales/Northern Ireland). The Russian Federation and Slovenia are currently working on a new national cycling plan.

Statistics show that countries having a national cycling plan in place show a higher share of people using the bicycle as preferred transport mode.
Factbox: Status of cycling

Touristic cycling holds great potential especially for peripheral regions and implies great development potential for new touristic regions. People make over 2.2 billion cycle tourism trips and 20 million over-night cycle trips every year in Europe. That makes cycling tourism an important factor for regional economic development.

Figure 2: Cycling Tourism

In 2014, 20 million bicycles were sold in the EU with an estimated turnover from bicycle sales of more than 4.6 billion Euros in 2013.

Figure 3: Bicycle sales

Due to the lack of internationally comparable statistics the graphs in the factbox focus on the EU member states.
3  BENEFITS OF CYCLING

Of the vast number of benefits one gets by cycling regularly, in the following the benefits on transport, the environment and health, the economy and job market have been assessed in more detail. Benefits are calculated applying state of the art instruments (e.g. HEAT-Tool) as well as results of studies, assuming that the objective of doubling cycling across the pan-European region will be achieved. References to the THE PEP Priority Goals are provided.

In order to be able to calculate the benefits of cycling not only for the countries where data on the kilometres cycled are available\textsuperscript{vi} the members of the partnership came up with expert estimations for the missing countries. The assessment has been carried out for 54 countries in the pan-European region\textsuperscript{vii}.

CONTRIBUTION TO SUSTAINABLE ECONOMIC DEVELOPMENT AND JOB CREATION

The economic benefits of cycling are diverse. Depending on the purpose of cycling (leisure or transport), the direct economic benefits can be measured e.g. in tax revenues, products produced, sales, jobs or income. Indirect economic benefits are e.g. saved GHG-emissions, reduced air pollution, positive health and safety effects, saved costs due to substitutional effects (e.g. using a bike instead of a car when travelling to work) or saved congestion costs.

\textbf{Cycling creates jobs!} Currently approximately 750,000 jobs\textsuperscript{viii} are connected to cycling in the pan-European region with rising tendency over the past years, up to 80\% in bicycle tourism. Other economic sectors include the construction and maintenance of cycling infrastructure, the bicycle-racing industry and cycling related research. Finally, service such as bicycle repair, bicycle hiring schemes or bicycle courier services need to be mentioned. Calculations based on the report \textit{Cycling Works – Jobs and Job-Creation in the Cycling Economy}\textsuperscript{ix} come to the conclusion that doubling the cycling modal share in the EU27 (currently 8\%) would create additional 400,000 jobs and additional 3.5 Billion Euro turnover in bicycle retail.

\textbf{Cycling backs the rural and local economy} According to a study conducted in the United Kingdom, cyclists, who are physically exercising and feeling the right to reward themselves, spend on average 3 to 4 times more money in the visited place compared to a car-borne visitor\textsuperscript{x}. As regards daily routine cycling, cyclists ride shorter distances than they would drive by car and hence prefer e.g. local shops to shopping malls outside of the town or city. Thus cycling promotes local supply and a carefully devised mixture of residential areas and the accompanying infrastructure as basis for a sustainable form of living.

SUPPORT SUSTAINABLE MOBILITY

European cities are challenged with the trend of urbanisation and growing population, whilst public space is more or less limited. The evolved city structure generally allows no significant additional construction of motorised traffic areas. The space provided for car traffic is already stretched to the limit. On April 25 in 2007, the European Economic and Social Committee declared that “important as cars are in modern society, car-oriented cities are neither possible nor desirable. Instead, public transport and environmentally friendly private transport (e.g. cycling or walking) should be the mainstays of modern urban transport planning.”\textsuperscript{x}i
Cycling is one of the most space efficient modes of transport. A parked car needs more than 8 times the space as a bicycle. As a result of decades of car-oriented planning in cities like Berlin the traffic area reserved for cars outnumbers the area for cyclists 19 to one\textsuperscript{iii}. By doubling cycling, an increasing share of public space will be available for people, instead of cars.

A substantial part of the every day’s car-trips could be substituted by cycling as more than 50% of all trips are shorter than 5 km\textsuperscript{iv}. Given proper infrastructure, cycling is the fastest and the most efficient mode to get ‘from kitchen table to office desk’ on distances of up to five kilometres. Compared to the car, a cyclist can usually follow a more direct route through cities/to the destination. Therefore, it is within short distances (up to about five km) the fastest mode of transport, enabling a higher average speed. Already approx. 42 billion passenger-km have been replaced by cycling in the pan-European region. By doubling cycling, approx. 84 billion passenger car-km can be replaced per year\textsuperscript{xiv}. New inventions, such as the electric bicycles, even compete favourably with cars for trips of up to 10 kilometres\textsuperscript{xv}. Compared to walking, cycling extends the catchment area from 1-2 km to 3-6km with the same energy input\textsuperscript{xvi}.

The space efficiency of cycling helps preventing congestions and converting areas formerly dominated by motorised traffic into leisure areas, providing high-quality living environments for people. Cycling is independent in terms of time (no timetables to be minded) and external energy. Reducing congestion will add up in indirect economic benefits when doubling the current cycling status to 4.9 Bill €\textsuperscript{xvii}.

Furthermore, replacing car trips with cycling trips helps to save money for municipalities by reducing road construction and maintenance costs. Based on OECD data on infrastructure investment\textsuperscript{xviii} and infrastructure maintenance\textsuperscript{xix}, road infrastructure investment costs avoided by doubling the current cycling status in the countries included in the estimates add up to 0.7 Bill €, respectively road infrastructure maintenance costs avoided to 0.4 Bill €.

Cycling is, next to walking, the cheapest mode of transport. The bicycle is more affordable and more democratic than the car. Far more people can afford a bicycle than a car: cycling has thus direct social benefits, democratizing mobility and achieving greater users’ autonomy, contributing to SDG 10 “To reduce inequality within and among countries”.

**REDUCED EMISSIONS AND ENERGY SAVINGS**

The Paris agreement within the United Nations Framework Convention on Climate Change (UNFCCC), provides a pathway forward to limit temperature rise to well below 2°C (or even 1.5°C as an ambitious goal). This means that until 2050, the GHG emissions have to be reduced by 80% to 95% to limit global warming at a maximum of 2°C\textsuperscript{xvi}. The transport sector is one of the main GHG emitters and the only subsector scoring an increase in emissions by 11.6 per cent.\textsuperscript{xx} Replacing passenger car kilometres directly leads to a reduction of fuel consumption, a reduction of greenhouse gases emissions (GHG), air pollutants and noise. According to the European Cyclists’ Federation, a cyclist pollutes 16 grams CO\textsubscript{2}/km, whereas the passenger car emits about 271 g CO\textsubscript{2}/km. Doubling the share of cycling will reduce GHG emissions by 8 Mio. t summing up to 1.1 Bill € indirect economic benefits\textsuperscript{xxi} per year.

Air pollutants, such as Nitrogen oxides (NOx) and particulate matter (PM), are caused to a high extent by motorised traffic. NOx is mainly emitted by Diesel vehicles and exceeds the health compatible limits in several cities. As a consequence, the number of low-emission zones is increasing. As regards PM, the WHO...
estimates that almost 83% of the population of cities, for which PM data exist, are exposed to PM$_{10}$-levels exceeding the WHO air quality guidelines$^{xxiii}$. Cycling does neither emit NOx nor PM and therefore strongly contributes to improving air quality, especially where it is most needed – in cities.

**The indirect economic benefits of reducing air pollution by doubling the share of cycling will add up to 0.4 Bill € per year.** Assuming that there are 41% diesel cars and 54% petrol cars in the fleet$^{xxiv}$ and the share of the car fleet according to the emission standards$^{xxv}$ is given, the costs of air pollution can be estimated with the 2014 handbook on external costs in transport$^{xxvi}$.

**The indirect economic benefits of reduced noise pollution of doubling the current cycling status will add up to 0.4 Bill € per year.** The European Environment Agency (EEA) states that “traffic is the most dominant source of environmental noise$^{xxvii}$ with an estimated 125 million people in the EU affected by noise levels greater than 55 decibels (dB) Lden (day evening night level).” As cycling is noiseless a higher modal share of cycling especially in cities where the population density is high and the distances between homes and transport routs are low will contribute essentially to reducing the noise pollution and increase the quality of life$^{xxviii}$.

Riding a bicycle needs no fossil fuels$^{xxix}$. **The indirect economic benefits of saved fuel by doubling the current cycling status sum up to 2.6 Bill € per year.** Replacing passenger car kilometres directly leads to a reduction of fuel consumption. For the calculation of the indirect economic benefits a fuel price of 0.08 €/km based on a fuel price per litre of 1.32 € (average of diesel and petrol, 2014, Eurostat) and an average consumption of 6.1 l/100km (UNECE) has been used. Cycling thus contributes to the decarbonisation of the economy.

**HEALTHIER AND SAFER SOCIETY**

Physical activity has multiplicative health, social, environmental, cultural and economic benefits to communities and nations. Regular physical activity is a well-established factor for the protection and prevention of the leading noncommunicable diseases (NCD), particularly heart disease, stroke, diabetes, breast, colon cancer and others. It also contributes to the prevention of other important NCD risk factors such as hypertension, overweight and obesity, and is associated with improved mental health, delay in the onset of dementia and improved quality of life and well-being.

According to the WHO, worldwide, levels of insufficient physical activity are high, including 23% of adults and 81% of adolescents (aged 11–17 years) do not meet the global recommendations for physical activity which is 150 minutes of moderate-intensity activity per week. Globally, physical inactivity is estimated to cost $54 billion in direct health care, of which 57% is incurred by the public sector and an additional $14 billion is attributable to lost productivity.

Cycling can significantly contribute to the reduction of physical inactivity. Regular cycling in adults, e.g. as part of daily commuting to work, has been found to reduce the risk of total mortality by ca. 10%$^{xxx}$ Even though there are certain health risks, such as the increased risk of traffic injuries and an increased inhalation rate of air pollution that active travellers need to consider, studies concluded that the health benefits of physical activity outweigh associated risks or costs, irrespective of geographical context or baseline setting, with a median of 20:1. $^{xxxi}$ (OECD$^{xxviii}$)

Reduced absenteeism at work resulting from doubling the current cycling status will add up to 7 Bill € of indirect economic benefits per year$^{xxxii}$ A high share of cycling within daily trips has strong impact on the
cyclist’s mental and physical health, reducing the number of days off work through illness. As a consequence, the healthcare costs for public and private health insurances and the companies’ loss of workforce can be reduced.

Doubling the current status of cycling would prevent 30,000 deaths [primarily from increased physical activity] and a related annual benefit of 78 Billion Euros resulting from indirect economic benefits\textsuperscript{xxxiv}. The indirect economic benefits of reduced mortality of doubling the current status of cycling will add up to 135 Bill € per year. Benefits from reduced morbidity (40% of mortality benefits) by living healthier lives through cycling, leads to additional indirect economic benefits of 54 Bill € per year for the pan-European region\textsuperscript{xxxv}.

However, in order to ensure that cycling delivers its full benefits for health, it remains imperative to address safety aspects. Dedicated infrastructure for cyclists and road design aiming at the reduction of the average driving speed contributes to the promotion of cycling and helps reducing the number of road accidents.

With OECD data on car crash fatalities\textsuperscript{xxxvi}, injury estimations from Europe\textsuperscript{xxxvii} and casualty related costs from HEAT indirect economic benefits of avoided car accidents (reduced fatalities, reduced serious and light injuries) of doubling the current cycling status will add up to 3.0 Bill € per year. Based on a cost-benefit of cycling study commissioned by the German BMVBS\textsuperscript{xxxviii} the indirect economic benefits of avoided material damage in car accidents when doubling the current cycling status will add up to 4.9 Bill € per year.

**INCLUSIVE, SAFE, LIVABLE AND RESILIENT SPACE**

Space and Soil are scarce resources. Therefore, the minimization of soil sealing and land use for transport infrastructure is an economic and ecological necessity. Large parts of Europe are highly fragmented because of transport infrastructure and urban expansion.\textsuperscript{xxxix} Particularly in urban areas, soil is being sealed off with increasing housing and infrastructure.\textsuperscript{x} Cycling infrastructure offers advantages due to lower soil sealing and fragmenting. Lower land and infrastructure costs for cycling infrastructure result in cost advantages. The cycling friendly redesign of traffic areas including green spaces / public gardens generates added value for all inhabitants.

![Figure 4: Space consumption by different means of transport\textsuperscript{xl}](image-url)
As shown in Figure 1, especially in cities, the same amount of people can be transported by cycling as with private cars but consuming far less space. Cycling benefits an integrated transport and urban planning approach, which needs to take the environmental and social quality of an area as perceived by residents, employees, customers and visitors into account.

The quality of an area is largely affected by conditions in the public realm, places where people naturally interact with each other and their community, including streets, parks, transportation terminals and other public facilities, and so is affected by public policy and planning decisions.

An integrated transport and urban planning approach aims for a more mixed-use development to influence towards shorter travel distances and increased walking and cycling mode shares. A good combination of density and mixed land usage can be significant for increased cycling activities.

**Factbox: Summary of indirect economic benefits of cycling**

<table>
<thead>
<tr>
<th>Indirect economic benefits of cycling</th>
<th>Status Quo</th>
<th>Doubling cycling</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mobility</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mobility / transport</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Congestion-easing</td>
<td>4.9</td>
<td>9.9</td>
</tr>
<tr>
<td>Road infrastructure</td>
<td>0.7</td>
<td>1.3</td>
</tr>
<tr>
<td>Maintenance</td>
<td>0.4</td>
<td>0.8</td>
</tr>
<tr>
<td><strong>Environment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO₂ emissions</td>
<td>1.1</td>
<td>2.2</td>
</tr>
<tr>
<td>Environment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Air pollution</td>
<td>0.4</td>
<td>0.7</td>
</tr>
<tr>
<td>Noise pollution</td>
<td>0.4</td>
<td>0.8</td>
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<tr>
<td>Energy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fuel savings</td>
<td>2.6</td>
<td>5.2</td>
</tr>
<tr>
<td><strong>Health and Safety</strong></td>
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<tr>
<td>Health economic benefits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absenteeism</td>
<td>7.1</td>
<td>14.2</td>
</tr>
<tr>
<td>Direct health benefits</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Longer lives</td>
<td>78.0</td>
<td>156.0</td>
</tr>
<tr>
<td>Healthier lives</td>
<td>31.2</td>
<td>62.4</td>
</tr>
<tr>
<td>Reduced accidents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduced fatalities</td>
<td>0.7</td>
<td>1.5</td>
</tr>
<tr>
<td>Reduced serious injuries</td>
<td>0.6</td>
<td>1.3</td>
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<tr>
<td>Reduced light injuries</td>
<td>0.1</td>
<td>0.2</td>
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<tr>
<td>Total accidents</td>
<td>1.5</td>
<td>3.0</td>
</tr>
<tr>
<td>Road safety</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduced material damage</td>
<td>2.5</td>
<td>4.9</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>90</td>
<td>41</td>
</tr>
</tbody>
</table>

Notes:
- Doubling cycling benefits: Calculation based on [best available data](#).
4 RECOMMENDATIONS

The following recommendations are presented as a compendium of possible actions, among which each country can choose the most relevant and suitable ones to achieve the common objectives.

1 DEVELOPING AND IMPLEMENTING NATIONAL CYCLING POLICIES SUPPORTED BY A NATIONAL CYCLING PLAN
1.1 Developing (and/or up-date) and implementing a national cycling plan
1.2 Creating strong “cycling working groups” & appointing a National Cycling Officer
1.3 Establishing National Knowledge Centre / “Bike Academy” for training of professionals and skill-enhancement

2 IMPROVING REGULATORY FRAMEWORK FOR CYCLING PROMOTION
2.1 Evaluating possibilities to integrate regulations to promote cycling and to increase cycling safety into national highway codes
2.2 Providing cycling friendly traffic conditions by lowering speed limits
2.3 Improving and harmonising vehicle (equipment) specifications

3 PROVIDING USER FRIENDLY CYCLING INFRASTRUCTURE
3.1 Defining and developing further a methodology and monitoring the implementation of a trans-European cycling network
3.2 Coordinating creation and maintenance of trans-European, national, regional and local cycling route networks
3.3 Standardisation of cycling infrastructure

4 PROVIDING SUSTAINABLE INVESTMENTS AND EFFICIENT FUNDING MECHANISMS
4.1 Setting up sustainable national funding schemes to promote cycling
4.2 Establishing close cooperation with International Financial Institutions (IFIs) to ensure funding of cycling infrastructure for cycling infrastructure investment plans
4.3 Considering impact of cycling in investment decisions

5 INCLUDING CYCLING IN THE PLANNING PROCESSES AND FACILITATING MULTIMODALITY
5.1 Incorporating cycling in all infrastructure planning
5.2 Considering cycling in spatial planning and building regulations
5.3 Facilitating multimodality between cycling, public transport and walking

6 PROMOTING CYCLING THROUGH INCENTIVES AND MOBILITY MANAGEMENT
6.1 Introducing fiscal incentives to promote cycling
6.2 Financial support for bikes (e.g. electric/cargo) for communities, companies and consumers
6.3 Promoting the use of cycling through Mobility Management

7 IMPROVING HEALTH AND SAFETY
7.1 Using cycling as a tool to promote physical activity across all settings to improve public health
7.2 Making the case for the public health benefits of cycling and its inclusion in relevant policies and strategies
7.3 Improving the safety of cyclists

8 IMPROVING CYCLING STATISTICS FOR EFFICIENT MONITORING AND BENCHMARKING
8.1 Providing adequate and reliable statistical data to monitor the level of cycling
8.2 Supporting countries in collecting coherent & comparable data on international level
8.3 Highlighting the benefits of cycling by developing and applying common tools

9 DEVELOPING CYCLING TOURISM
9.1 Establishing national cycling tourism coordination centres
9.2 Introducing a national cycle friendly service scheme
9.3 Adopting and implementing a national standard for signalisation of cycle route networks

10 MAKING USE OF NEW TECHNOLOGY AND INNOVATION
10.1 Introducing open standards for data exchange
10.2 Using smart data to improve cycling conditions
10.3 Supporting innovative bike-vehicles for the last mile logistics

A more detailed description of the recommendations including a list of good practices examples can be found in Annex 1.
1. DEVELOPING AND IMPLEMENTING NATIONAL CYCLING POLICIES SUPPORTED BY A NATIONAL CYCLING PLAN

In some countries of the pan-European region, cycling is not considered as equal mode of transport and it is often not included in national policies on transport, health and environment. Furthermore, in many instances, cycling is not included in professional education forming future town planners.

A coherent plan adopted internationally will support national and local actors to streamline their efforts on cycling promotion and in addressing the issues above. National cycling plans (NCPs) proved to be strategically important policy documents for national authorities, as they provide a framework to develop cycling at different policy levels and support regional and local authorities when promoting cycling.

The following additional measures proved to be effective in implementing NCPs: training (capacity building) of the main actors; establishing a network of the relevant stakeholders; and creating a National Cycling Officer to steer the cycling promotion process.

**Recommendation 1.1: Developing (and/or up-date) and implementing a national cycling plan**

A National cycling plan provides a framework to promote cycling nationally. The plan, its objectives and recommendations should be tailor-made to the characteristics of each country and need to integrate national cycling policies and strategies. To ensure national coherence, national authorities should coordinate, monitor and update the implementation of the NCP. At the same time, they need to ensure the involvement of all relevant stakeholders at regional and local levels for a successful implementation.

**Recommendation 1.2: Creating strong “cycling working groups” and appointing a National Cycling Officer**

Contacts and regular exchanges of ideas between the relevant stakeholders from the local, regional and national level as well as the transport, health, environment and economic sectors create a better understanding of the different needs and requirements.

It is recommended that countries establish a National Cycling Officer (NCO) - for countries starting to promote cycling - or a National Cycling Competence Centre (NCCC) - for countries with longer experience – fully dedicated to cycling. An effective NCP/NCCC should: (a) be intersectoral (i.e. acknowledging links to other related policies as health and environment) (b) identify guiding principles for cycling promotion (c) identify actions to promote cycling with a clear implementation mechanism, including timeframe, deadlines and responsibilities.

**Recommendation 1.3: Establishing National Knowledge Centre / “Bike Academy” for training of professionals and skill-enhancement**

Education, training and awareness raising are the most efficient methods for knowledge transfer and dissemination of cycling-friendly solutions. “Bike Academies” - platforms for exchange of know-how linked with an international network - could offer the professional training and skill-enhancement needed. Bike Academies can be linked to existing research and information institutes (with relation to cycling issues), advocacy groups, NGOs, cycling embassies, international and local expert groups.
2. IMPROVING REGULATORY FRAMEWORK FOR CYCLING PROMOTION

Cycling should be considered as an efficient mode of transport. In order to promote cycling, several countries adopted standards and regulations adapted to the needs of cyclists while other countries could benefit from their experience for enhancing the regulatory framework.

Even with different regulatory frameworks, several national authorities could implement in their own country good practices from different countries: examples to ensure safety for drivers and passengers (traffic regulation, directional signage, lights, etc.) should be compiled on a systematic basis and evaluated for adoption in other countries. At the same time, common standards for heavy good vehicle (HGV) allowing to reduce, or even resolve, the blind spot issue could improve the pedestrian and cyclist safety.

The improvement of the regulatory framework facilitates the peaceful coexistence of all modes of transport. It raises safety, gives clear guidance to all participants and enables the acknowledgement of cycling as an attractive mode of transport.

New vehicles open up a wide range of new possibilities reaching new groups of users, compete for the existing infrastructure and are often not subjected to any regulations or standardization. They should be used as effectively as possible to tap their potential and to increase the share of cycling, walking and public transport. However this must not compromise safety or convenience of other vulnerable users.

Recommendation 2.1: Evaluating possibilities to integrate regulations to promote cycling and to increase cycling safety into national highway codes

Many national highway codes still lack regulations to promote cycling and to increase safety of cyclists. Some rules or principles proved to be efficient and therefore should be evaluated for a possible adoption in the member States of UNECE and WHO. New rules that fit best to the national priorities and context should be tested and evaluated regarding the effects on safety, traffic and comfort.

Recommendation 2.2: Providing cycling friendly traffic conditions

On road with high speed or high density, separated infrastructure increases safety perception amongst cyclists and may thus attract more people to cycling. However, since separation is not always physically or financially feasible, the traffic calming measures with speed limits up to 30km/h for motorised cars mixed traffic and ensure safety of cyclists and pedestrians are highly advisable.

Recommendation 2.3: Improving and harmonising vehicle (equipment) specifications

For new vehicles such as cargo bikes, delivery tricycles, hand-bikes or e-bike, regulations should specify harmonised authorisation and classification to ensure safety and behaviour rules and set up transnational standardisation to develop a new UNECE/WHO Europe-based norm. In order to reduce the number of cyclists dying in accidents with a heavy good vehicle (HGV), local, national and international specifications for HGV conception should contribute to solve the blind spot problem and introduce protections. The European Professional Drivers Qualification has been reviewed and now includes cycling and urban driving. Guidelines on HGV/lorry access restrictions and public procurement of HGVs in urban areas should be elaborated.
3. PROVIDING USER FRIENDLY CYCLING INFRASTRUCTURE

Cycling infrastructure is constructed, managed, promoted and maintained at different administrative levels. Strategic planning is needed to connect the different networks levels (e.g. between flagship cross-border infrastructure such as EuroVelo and more dense national networks). In many countries existing design standards do not reflect cyclists’ needs and do not guarantee a coherent, attractive cycling network. A trans-European cycling network should be created, with a consistent interlinked structure. European cycling routes should be planned with wider connections in mind, national routes should form the backbone of the network, while regional and local routes should form connections for local communities with certain sections serving multiple needs. The development of a common methodology can serve as a guideline for national, regional and local authorities. Each level of cycling infrastructure needs to be further managed, promoted, monitored and maintained. Results include greater safety, convenience, orientation and higher satisfaction for existing cyclists as well as acting as an encouragement for potential cyclists.

**Recommendation 3.1: Defining and developing further a methodology and monitoring the implementation of a trans-European cycling network**

In a coordinated approach involving the member States of UNECE and WHO, UNECE will support the identification of a trans-European cycling network. This core network should be based on the official national cycle route and EuroVelo networks, incorporating also urban networks and regional cycle highways. Defining the trans-European cycling network will help national and regional governments to identify, design and prioritise backbone cycling corridors (see recommendation 3.2). Furthermore national, regional and local governments could approach International Financial Institutions (IFIs) and other international donors with more structured and ready-to-be-financed project proposals (see recommendation 5.2).

**Recommendation 3.2: Coordinating creation and maintenance of trans-European, national, regional and local cycling route networks**

The national level should coordinate the development of the national cycle route network and should ensure that regional and local cycle networks are coordinated by relevant bodies. These may include European level routes (see recommendation 3.1) and/or connect with neighbouring countries’ networks. Such networks should be created in partnership with the relevant national, regional and local authorities and stakeholders according to the respective competences to ensure the appropriate infrastructure is in place for different purposes.

**Recommendation 3.3: Standardisation of cycling infrastructure**

Minimum quality standards for infrastructure, ensuring coherence, directness, safety, comfort and attractiveness of cycling networks, should be adopted at as high a level as possible but at least put as a condition on all state or EU/IFI financed projects. To increase the acceptance, the standardisation process should go along with activities for promotion and training. Most likely the adoption will result in the revision of other relevant standards (e.g. bridge design).
4. PROVIDING SUSTAINABLE INVESTMENTS AND EFFICIENT FUNDING MECHANISMS

To achieve modal shift towards cycling, investments are needed for infrastructure and promotion (see 5.6), however cycling is often not valued as an equal mode of transport in national investment plans resulting in a lack of budget. Providing sufficient resources is an integral part of a National Cycling Plan, previous experiences show that there is a sustained minimum level of investment needed to attain significant improvements in cycling conditions. However, financing should be provided at all administrative levels to foster the implementation of cycling measures and guarantee maintenance of infrastructure. Since competencies for cycling vary from country to country, a set share of the country’s transport budget should be allocated to cycling over all levels of governance. In order to justify the allocated budget, new indicators should be used in cost-benefit analysis that include positive externalities of cycling. That would raise the awareness of the benefits of cycling and change its perception to public authorities and financers. International funding schemes could be used as front-end financing but are often not used to the full potential.

Recommendation 4.1: Setting up sustainable national funding schemes to promote cycling

An option for authorities on the national level is to set up funding schemes, among other to support the local/regional authorities in their efforts to promote cycling. The United Nations Environment Programme recommends a share of 20% of the transport budget to be allocated to walking and cycling. Currently the Netherlands invests about 7% of its transport budget into cycling, corresponding to about 30 Euro per person in annual investments. It is crucial to sustain adequate investment levels in the long term in order to make changes in modal shift perennial. Besides the financial engagement of the public sector, possibilities for private sector financing (e.g. for public bike systems) and other transport financial regulators (e.g. congestion charges, parking fees, gasoline tax) should be explored. Financing from prevention funds of health insurances could be an option especially for promotion measures (see recommendation 6.1) due to the substantial health benefits of cycling.

Recommendation 4.2: Establishing close cooperation with International Financial Institutions (IFIs) to ensure funding of cycling infrastructure for cycling infrastructure investment plans

IFIs and other donors have established special conditions and rules to finance infrastructure projects. These conditions and rules exist to facilitate the funding procedure by standardising the key performance indicators and data that should be analysed and illustrated. Specific projects can be discussed in the course of bilateral meetings organized between countries’/cities’ representatives and IFIs.

Recommendation 4.3: Considering impact of cycling in investment decisions

Considering the impact of cycling should be standard procedure in cost-benefit analysis (CBA) of transport projects and should integrate transport, environment and health effects. It should be addressed on the transnational level by developing an internationally agreed methodology for transport/urban developments in cooperation with the International Financial Institutions, Overseas Development Agencies, UNECE and WHO. This process should include a review of existing CBAs in the UNECE member States and WHO and of which benefits/costs and values used. Guidance for health impact assessment of transport/urban interventions (e.g. with the WHO Health Economic Assessment Tool, HEAT) that also consider effects of the proposed interventions on cycling should be developed (see also Recommendation 8.3).
5. INCLUDING CYCLING IN THE PLANNING PROCESSES AND FACILITATING MULTIMODALITY

Cycling is often not sufficiently integrated into the whole transport system which limits the use of bikes in everyday cycling to short distances. Cycling infrastructure is often considered in a very late stage of development projects when all other infrastructure and facilities are already in place resulting in higher costs for later adaptations.

An important step is to include cycling into the regulations of infrastructure planning. Cyclist-friendly planning principles should always include cycling unless it is proven not relevant. Cycling for daily-life trips is used mostly for short distances. Bike-use could be extended if integrated in the whole transport system as part of the transport chain. Close cooperation with all relevant stakeholders will help to operate the whole transport system more efficiently.

Cycling friendly spatial and land-use planning will make the most fundamental change visible: it will help to reduce transport needs, provide more space for non-motorised traffic and result in more liveable and attractive cities and settlements.

**Recommendation 5.1: Incorporating cycling in all infrastructure planning**

Regulations at all administrative levels should set the basic principles of cyclist-friendly infrastructure planning. All technical details should be defined in cycling planning guidelines, manuals and design standards ensuring flexibility to take into account local, regional and national circumstances. Guidelines, manuals and standards should be promoted and regularly updated. For a successful adaptation of existing regulations, a strong cooperation and harmonisation with relevant transnational institutions, agencies and affected stakeholders is necessary. The process should end up in the legal approval of the regulations and plans and their implementation on the national level.

**Recommendation 5.2: Considering cycling in spatial planning and building regulations**

Spatial planning should ensure short distance trips suitable for cycling by defining an adequate land use mix and consider the needs of cyclists and non-motorised traffic in general.

Cycling friendly building regulations should contain detailed requirements (secure bike parking, chargers, positioning of entrances, wide doors, oversized elevators, changing rooms and lockers, repair stands, etc.) for all new development projects.

**Recommendation 5.3: Facilitating multimodality between cycling, public transport and walking**

In order to make the transport of bikes easier, public transport vehicles should be able to carry bicycles in a comfortable and affordable way. Smooth connection between the bicycle network and the platforms should be ensured by ramps, special staircases or elevators. The responsible institutions should include the necessary vehicle/services specifications in the tender documentation for public procurements and introduce attractive tariff systems.

Multimodal route planners, applications, traffic information systems should include cycling networks and bike-sharing schemes. The introduction of innovative e-ticket systems and mobility cards should cover all sustainable transport modes, including public transport, car sharing, bike sharing, secure bike parking.

In order to support multimodality and integration of cycling into the infrastructure network, it is recommended to establish multimodal transportation agencies (MTA). For that the relevant transport agencies have to identified, an agreement on basic cooperation principles has to be reached and a management board established.
6. PROMOTING CYCLING THROUGH INCENTIVES AND MOBILITY MANAGEMENT

While in many countries tax benefits are available for people using their car or public transport for their daily commute, fiscal incentives for cycling are only granted in a few countries. Still, monetary incentives are a powerful tool to steer behaviour and to enhance the status of cycling. Additionally, the new introduction of e-bikes to the market opens up a new segment of bike use that goes far beyond conventional bikes in terms of distance and convenience. However, the high potential is not fully tapped because of considerably higher purchase costs. The aim is to have cycling acknowledged as an equal mode of transport in the fiscal system, provide a level playing field for all modes of transport, to promote cycling and reach a better awareness and image with the general public.

Monetary incentives can range between tax benefits to install cycling infrastructure for companies, to subsidies for commuting. E-Mobility funding schemes should not only promote e-cars but also e-bikes. Promotion campaigns shall raise the awareness of cycling and its benefits and lead to a direct behaviour change. They also open up cycling for groups that have not cycled previously.

Recommendation 6.1 Introducing fiscal incentives to promote cycling

Depending on the national fiscal system, the aim of a fiscal level playing field for commuting can be achieved in different ways. Examples for fiscal incentives are the introduction of a tax-free mobility budget, tax-free kilometic reimbursement for cycling to work, tax incentives for bikes and cycling infrastructure offered to employees, facilitate bike usage for business trips. In case there is no political majority for the introduction of a specific tax benefit for cycling, the elimination of subsidies for commuting by car alone can already have a positive steering effect and create a fiscal level playing field for all modes of transport. Once they are introduced, promoting these fiscal incentives is of crucial importance to raise the attention of employers and other possible beneficiaries.

Recommendation 6.2: Financial support for bikes (e.g. electric/cargo) for communities, companies and consumers

Wider diffusion of high quality conventional bicycles and of innovative bicycles like electric power assisted pedelecs, folding, and cargo bikes can steer behaviour change away from car or van trips. Therefore, e-mobility strategies and funding schemes should always include electric bicycles. In markets with low sales figures, a general financial support of 500€ for electric bikes and 1000 € for electric cargo-bikes could help to bridge the price gap to conventional bikes and facilitate market uptake. In countries where e-bikes already have a big market share, fiscal incentives should focus on cycle use, however some targeted financial support schemes e.g. for pedelecs and electric cargo-bikes due to their higher price, or schemes for small businesses can still be an option.

Recommendation 6.3: Promoting the use of cycling through Mobility Management

Campaigns to promote the use of cycling, both for daily as well as touristic purposes, are a necessary element in creating a “cycling culture”. Mobility Management (MM) offers a large set of instruments to promote cycling and other sustainable modes by including demand management for car use by changing travellers’ attitudes and behaviour. At the core of MM are "soft" measures like information, promotion, organisation and coordination, education and training, location related measures and supportive measures. "Soft" measures often enhance the effectiveness of "hard" measures (e.g. new bike lanes). In many cases the responsibly for these measures is located at the local regional level. According to the particular competences national authorities should have a clear vision regarding their roles and responsibilities and provide a suitable framework to support the local and regional level.
7. IMPROVING HEALTH AND SAFETY

Each year, about 1 000 000 deaths in the WHO European Region can be attributed to insufficient physical activity. Active mobility, in the form of cycling as a means of transportation, is a highly promising approach to integrate physical activity into individuals' daily lives. Measures to increase objective and perceived cyclist's safety should be implemented in national and international road safety policies.

**Recommendation 7.1. Using cycling as a tool to promote physical activity across all settings to improve public health**

Well-structured guidelines for physicians and public health professionals, raising awareness about the links between active mobility and health and also addressing issues that might be related to specific health conditions in certain groups of patients could be helpful in increasing the capacity of the health sector to effectively advocate cycling and walking and provide their patients with correct information.

**Recommendation 7.2. Making the case for the public health benefits of cycling and its inclusion in relevant policies and strategies**

Public health professionals have a clear role in advocating for cycling within professional groups through communicating the wide-ranging benefits to health and well-being from regular cycling. Specific activities might include modelling the impacts of cycling on public health; estimating the economic benefits of potential or real increases in cycling (using tools such as the HEAT); building competencies through equipping other sectors with the knowledge and arguments to support cycling uptake; and wider communication of the health benefits of cycling to raise public awareness.

Public health professionals can also be a strong voice to advocate for the inclusion of cycling in other policy areas and programmes. Ministries of Health and Education should include the issues of health benefits of cycling as well as traffic rules and road safety in the teaching programmes and curricula in secondary schools. A manual written in clear, concise and user-friendly manner followed up by training and awareness raising exercises should be developed for teachers and parents, and opportunities should be provided for children to experiment with and develop cycling skills. These measures should be summarized in a school mobility management plan.

**Recommendation 7.3. Improving the safety of cyclists**

Although cycling is in general a safe mode of transport, the perceived and actual safety risks are a major barrier for cycling. Improving cyclist safety is important in order to contribute to the objective of this plan of halving the number of fatalities (and serious injuries). Main actions for improving cyclist safety are:

- reducing vehicle travel speed to 30 km/h limit;
- providing safe road infrastructure for cyclists including off road bicycle tracks with well-designed safe intersections, on-road bicycle lanes, on-road shared bicycle boulevards, advance stop line, overpasses and underpasses, bicycle network development and street lighting;
- ensuring vehicles are safer by installing or utilizing mandatory bicycle lights, helmets, track side guards, vulnerable road user airbags, and autonomous emergency breaking; and establishing and enforcing traffic laws related to banning mopeds from cycle paths and helmet use; and
- conducting training for cyclists linked to increasing knowledge and cycling skills.
8. IMPROVING CYCLING STATISTICS FOR EFFICIENT MONITORING AND BENCHMARKING

To better assess the benefits of cycling there is the need of systematic collection of statistical data. Making a comparable and reliable statistical database available in the pan-European region will enable and foster monitoring and benchmarking of cycling promotion.

A first step would be to get an overview about existing data on regional, national and European level. Next will be gaining comparable and reliable statistical data focusing on a minimum set of indicators, which include the modal share of cycling (% of number of cycling trips / total trips), number of passenger kilometres cycled, the number of bicycles (per 1,000 inhabitants or per household), the number of bicycle sales (average number of bicycle sales in the last five years per 1,000 inhabitants or import/export of bicycles) and the number of fatalities (and serious injuries) per kilometre cycled. With digitalisation and new technologies new possibilities may arise for new ways to collect statistical data (see 4.10). The aim is to collect data for a baseline in 2020.

This common database will have an immediate effect on the credibility of arguments used by stakeholders dealing with the promotion of cycling. It will be used as justification towards financing institutions and the taxpayer and thus lead to higher allocation of budget dedicated to cycling. It will serve as a powerful monitoring and evaluation tool, comparing the effectiveness of set measures and find success factors (measures that work best and could serve as best practice for other countries) that will lead to focus the available money to those investments that promise the highest impact.

**Recommendation 8.1: Providing adequate and reliable statistical data to monitor the level of cycling**

To assess the impact of cycling with a common methodology a specific minimum set of data is needed. After getting an overview (including quality) about existing data on regional, national and European level, a minimum set of comparable, reliable and harmonized statistical data is needed (e.g. by applying the Eurostat Passenger Mobility Guidelines or the results of the SHANTI project). Additionally, it is recommended to organise (or update) a national travel survey in your country. This additional information gives better insight in the behaviour, needs and preferences of cyclists.

**Recommendation 8.2: Supporting countries in collecting coherent & comparable data on international level**

The UNECE Inland Transport Committee’s Working Party on Transport Statistics (WP.6) already provides an internationally recognised framework for the collection of transport related statistics. To improve the collection of cycling data the work of the WP.6 should be extended to gather detailed cycling related statistics through this framework.

**Recommendation 8.3: Highlighting the benefits of cycling by developing and applying common tools**

WHO-Europe has developed an online Health Economic Assessment Tool (HEAT) to estimate the value of reduced mortality that results from regular walking or cycling. The tool is designed to help urban planners, transport authorities and health practitioners to make the case for new investment in active mobility and to quantify the economic value of active mobility. The newest HEAT includes modules on mortality from air pollution, and road traffic injury, along with a module to estimate changes in carbon emissions resulting from modal shifts towards cycling and walking. Further improvements / tools are necessary to assess and highlight the impact of cycling on the economy by using a common methodology and harmonized data.
9. DEVELOPING CYCLING TOURISM

Cycle tourism and recreational cycling are already well established in many European countries and make an increasingly significant contribution to national economies – according to a study commissioned by the European Parliament in 2012 and THE PEP and UNEP study on green jobs in cycling, cycle tourism contributes more than €44 billion to the EU (+ CH and NO) economy per year. This is in addition to the related environmental and societal benefits. However there is often still a lack of coordination between different levels of responsibilities. Not only with design of cycling tourism routes but also to accompanying services such as public transport and accommodation. In order to ensure that levels of cycle tourism and recreational cycling continue to grow it is vital to coordinate their development on a national level through the establishment of national cycling tourism coordination centres and to bring together the relevant service providers (through cycling friendly service schemes). It is also necessary to adopt and implement a national standard for cycle route network signalisation. Through these measures, cycling tourism will reach a wider share of the market and become more accessible acting also as a ‘gateway’ for people to use the bicycle as part of their day-to-day mobility if designed in a holistic way.

Recommendation 9.1: Establishing national cycling tourism coordination

To make cycle tourism destinations successful it is important to establish organisational structures to coordinate the necessary actions on the national level, including integrating EuroVelo-related tasks. National cycling tourism coordination would typically include the relevant national tourism ministry/authority, national highways/transport ministry/authority, regional authorities, cycling organisations (representing the users), organisations representing service providers (e.g. accommodation) and public transport operators. Besides the identification of relevant stakeholder, the structure and legal status of the coordination centre as well as the tasks and responsibilities have to be defined. While countries beginning to promote cycling tourism could start by establishing a working group with an initial contact point for inquiries, countries with a long cycling tradition of cycling tourism could develop a full coordination centre. Priorities and actions have to be discussed in stakeholder workshops and financing has to be assured.

Recommendation 9.2: Introducing a national cycle friendly service scheme

Cycle tourists have some specific needs (e.g. safe and secure bike parking, tools for repairing minor mechanical problems etc.) and service providers that cater for these requirements can promote their offer to potential customers through national cycle friendly service schemes. Such schemes have been established in many countries and are often run by the National EuroVelo Coordination Centre (see recommendation 3.1). However, there remain some countries that do not have any schemes while in other cases several different regional schemes create a confusing situation for users. In that case it is necessary to coordinate existing systems on a national level and agree on a single set of criteria and a financing model including marketing and promotion activities.

Recommendation 9.3: Adopting and implementing a national standard for signalisation of cycle route networks

In some countries, there is no guideline nor a national standard for the signalisation of cycle routes. This brings the risk of different systems being used in different regions creating confusion or of no signage being installed at all. National highways/transport authority and governments should take the coordinating role in developing the standard and adopting the corresponding regulation. As the implementation will most probably be the task of the local and regional level, involvement of all relevant stakeholders during the preparation phase is crucial.
10. MAKING USE OF NEW TECHNOLOGY AND INNOVATION

In recent years, technological developments accelerated and new types of bicycles, similar vehicles and tools that support cycling are ready for the market. Innovation can help to make cycling more attractive, safer and more comfortable. Following upon what has started in the automotive industry, some features become available for cyclists as well. The opportunities to use technological innovations are enormous. Intelligent Transport Systems (ITS) improve traffic management by communication between bicycles and traffic lights, and with new technologies the flow of cyclists can be recognised and prioritised. Data can be collected either via the bike, by placing tags on them, or by apps on smartphones used by the cyclist. Applications are preventing bike theft, signalisation of spare places in large bicycle parkings, improvement of signing and Digital Information Services (DTIS). On the other hand, there is the question of whether self-driving cars in inner cities pose a threat to cyclists’ space if separate lanes are being introduced for them. That development must be prevented.

The technology associated with the bicycle sector is still a patchwork, unregulated and difficult to compartmentalize industry. The role of government can be increased by agenda setting, steering on more open standards and stimulating cooperation. This would stimulate cycling and benefit the users. For example, public bike sharing systems in different cities and countries could benefit from open standards and interoperable systems. Additionally, this becomes important considering the rise of Mobility as a Service (MaaS).

Recommendation 10.1: Introducing open standards for data exchange
The rise of numerous forms of data collection and innovative applications resulted in non-transparent patchwork. As every developer works on implementing its own standards, the exchange of data is restricted. The introduction of open standards on EU or UNECE level can help to make applications accessible to the wider public and to organise better business collaboration. Possible applications are e.g. Multimodal Travel Information, Public Bike Sharing, Bike Parkings, Theft Prevention, etc.

Recommendation 10.2: Using smart data to improve cycling conditions
Data collection can contribute to cycling policies (see recommendation 8.1 & 8.2). More knowledge on when and where people cycle and where not, which preferred routes they choose, what speed etc. helps to develop strategies to encourage people to cycle and to make cycling more comfortable. Governments should cooperate with third parties and develop strategies to share information to encourage data collection from cyclists to use this data to improve urban cycling and to allow access to data for individual cyclists.

Recommendation 10.3: Supporting innovative bike-vehicles for the last mile logistics
The question of the last-mile logistics for e-commerce and home-shopping is essential to improve the sustainability of the cities and the safety of pedestrians and cyclists who are very much in danger with the lorries. Innovative cargo bikes provide solutions to come up with this challenge. Relevant products and vehicles have to be identified and tested in local test surroundings. If necessary legislation or regulations have to be amended for approval. Benefits of newly developed solutions should carefully be evaluated. Support and supervision should be provided by national ministries.
5. PAVING THE WAY TO THE FUTURE

Starting at the 4th High-level Meeting on Transport, Health and Environment in April 2014, the members of THE PEP Partnership on Cycling have been closely cooperating in the elaboration of the pan-European Master Plan for Cycling Promotion. This cooperation will continue after the adoption of this document.

THE PEP Partnership on cycling will continue sharing good practices and monitoring the implementation of the pan-European Master Plan for Cycling after 2019. The partnership is aiming at extending the geographical scope to countries which have not been involved so far.

Close links between THE PEP Partnership and e.g. THE PEP Academy bringing together the national knowledge centers should be established. This will provide the possibilities for know-how exchange and support the capacity building process necessary for the successful implementation of the pan-European Master Plan for Cycling Promotion in THE PEP countries.

The further development and implementation for the Trans-European Cycle Network will be crucial for achieving the objectives set in the masterplan. For that close cooperation with IFIs and other donors will of paramount importance. Getting access to the funds of IWF, EIB, etc. will increase the available budgets for cycling promotion activities beyond the investments on national and EU level. By having developed and adopted this master plan an important precondition for approaching IFIs and other donors was fulfilled: the provision of structured and IFIs requirements’ friendly data and information regarding new cycling infrastructure projects. The next step will be the organisation of funding workshops with the representatives of the different financing institutions discussing options to finance the identified projects summarized in the infrastructure module of the pan-European master plan.

These activities will facilitate the implementation of the pan-European Master Plan for Cycling Promotion in THE PEP countries. To manifest cycling promotion in the regulatory framework in Europe the elaboration of the masterplan could be followed up by proposals for a European Cycling Convention.

Finally, the engagement of THE PEP should not end with cycling. Many benefits resulting from more people cycling can also be applied for more people walking. Extending the scope of activities to the whole range of active mobility would be the next logical step in order to achieve THE PEP Priority Goals.

ANNEX 1: TOOLBOX OF ACTIONS BASED ON BEST AVAILABLE EXPERIENCE FROM THE COUNTRIES OF THE PAN-EUROPEAN REGION
Evidence base


ii Source: Buehler and Pucher, 2012


v http://www.coliped.com/docs/issuu/European%20Bicycle%20Industry%20%20Market%20Profile%202014.pdf; Data on Russia and Ukraine: Conebi (direct communication) & UNECE Statistical Database for the pop. figures

vi Netherlands (OnderzoekVerplaatsingen in Nederland (OVIN), 2015), Denmark (Transportvaneundersøgelser (TU), 2014), Germany (Mobilität in Deutschland (MiD), 2008), Slovak Republic (Transport Mobility Survey, 2015), Italy (A global high shift cycling scenario; ITDP and UC Davis, 2015), Switzerland (Mikrozensus Mobilität und Verkehr (Micro census Mobility and Transport), 2010), Belgium (Belgian Daily Mobility Survey (BELDAM), 2009-2010; COWI, KU Leuven 2017), Finland (National Travel Survey (NTS), 2010-2011), Austria (National travel survey Österreich unterwegs 2013/2014), Sweden (National Travel Survey (RVU), 2014-2015), France (ENTD 2008), United Kingdom (National Travel Survey (only covers England), 2014), Ireland (National Travel Survey (NTS), 2014), Cyprus (Short Distance Passenger Mobility Survey, 2009)

vii Albania, Andorra, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Kazakhstan, Kyrgyzstan, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Monaco, Montenegro, Netherlands, Norway, Poland, Portugal, Republic of Moldova, Romania, Russian Federation, San Marino, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tajikistan, The former Yugoslav Republic of Macedonia, Turkey, Turkmenistan, Ukraine, United Kingdom of Great Britain and Northern Ireland, Uzbekistan


x https://ecf.com/resources/cycling-facts-and-figures/economic


xii https://www.clevere-staedte.de/blog/artikel/laechen-gerechtigkeits-report-online

xiii Source: Hausberger, Herry 2007 and https://www.bmvit.gv.at/verkehr/gesamtverkehr/statistik/oesterreich_unterwegs/

xiv The basis of this assumption is the current status of cycling per person per year. The average for the analysed 54 THE PEP countries is 144 km per year.


xvii based on a UK WebTAG price for congestion found in ECF2016

xviii https://data.oecd.org/transport/infrastructure-investment.htm

xix https://data.oecd.org/transport/infrastructure-maintenance.htm


xxii To estimate these benefits the replaced car km by cycling in THE PEP countries is multiplied with the respective emission factors. For GHG emissions UNECE data for car (145 g CO₂/PM) and bus (29 g CO₂/PM) were used.
The improvement will take place where it is needed the most— in these areas where the impairment is high and technical measures are limited (noise barriers) or less effective due to speed limits (low noise road surfaces).

unless electric bikes are recharged using electricity provided by power plants supplied with fossil fuels.


Estimations for reduced absenteeism: Average hourly labour cost in the 54 THE PEP analysed countries 2015: 20 € per hour (Eurostat); Average cost per day (8 hours): 200 € per day; Employees cycling to work are on average 1.3 days less absent due to sickness than those who do not cycle to work. The gain per employee is thus 208 € per year (http://www.ncbi.nlm.nih.gov/pubmed/20580736); Active population: 611.477.006 (OECD); Employed population: 428.033.904 (Eurostat); Cycling to work (assumption: 8%, based on Eurobarometer "Quality of transport", 2014): 34.242.712

Calculation based on HEAT (Health Economic Assessment Tool) for the countries included in the estimates.


https://data.oecd.org/transport/road-accidents.htm


https://nationaler-radverkehrsplan.de/de/aktuell/nachrichten/veroeffentlichung-der-forschungsergebnisse-des


https://www.eea.europa.eu/articles/urban-soil-sealing-in-europe


Sealens, E./Sallis, J./Frank, L. (Hrsg.): Environmental correlates of walking and cycling: Findings from the transportation, urban design, and planning literatures. In: Annals of Behavioral Medicine, Springer 2016

Litman, Todd (Hrsg.): Land Use Impacts on Transport. How Land Use Factors Affect Travel Behavior, Victoria Transport Policy Institute 2018


An effective NCP should: (a) be intersectoral (i.e. acknowledging links to other related policies as health and environment) (b) identify guiding principles for cycling promotion (c) identify actions to promote cycling with a clear implementation mechanism, including timeframe, deadlines and responsibilities.


https://thepep.unece.org/node/777

New cycling technologies include, for instance, travel and journey planning; placing sensors on bicycles to collect data on air, quality light, surface, other environmental information; connectivity; electric mobility; Public Bike Share; and data sharing