

THE PEP Workshop Batumi 30 Sept-1 Oct 2010

Investing in Cycling

Saving Health Costs, Boosting Regional Economy and Green Jobs - Austrian Experience

Robert Thaler

Head of Division Transport, Mobility, Human Settlement and Noise

Austrian Ministry for Agriculture, Forestry, Environment and Water Management



THE PEP

*Transport, Health and Environment
Pan-European Programme*

United Nations Economic Commission for Europe (UNECE)
World Health Organization Regional Office for Europe (WHO/Europe)



WHO / Europe



United Nations



Cycling - a Win Win for environment and economy



**Joint initiative Ministry of Environment and Chamber of Commerce 2009:
Calculation of the economic value of the cycling sector in Austria**

- >> 882,5 mio. Euro added value
- >> 18.328 green jobs
- >> 10 Mio € investments in cycling infrastructure creates about 1000 jobs.



- Production of bicycles and e-bicycles, components and equipment
- Cycling business
- Repair service and rental systems
- Cycling tourism
- Sport activities
- Construction of cycling infrastructure

Partnership with economy: Cycling - a Win Win for environment and local supply



Joint initiative Ministry of Environment and Chamber of Commerce 2010:

Survey cycling and retail businesses

- 80% car rides for shopping are shorter than 5 kilometres
- 50% of shopping weight less than 5 kilogram
- >> high potential to go shopping by bicycle
- Cyclists higher frequency of shopping (148 days p.a.) than car drivers (123 days p.a.)
- Shopping by bicycle for convenience goods
- Shopping amount p.a. through cyclists in some regions and rural areas equal to car users
- >> cyclists are regular and financially solvent costumers

Partnership with economy: Cycling - a Win Win for environment and local supply



Survey cycling and retail businesses

- 2.5 billion Euro retail-trade-relevant purchasing power from cyclists
- 1% more occasional cyclists in Austria will induce 88 million Euro sales increase for local supply
- 1.3 billion euro increase in potential purchasing power for local supply if 15% car rides were shift to bicycle

>> Conclusion:

Promotion of cycling is a proper policy tool to support local supply and local economy

Calculating Health Benefits of Cycling

Applying THE PEP HEAT for Cycling



- **THE PEP Health Economic Assessment Tool (HEAT) for Cycling (WHO)**
- **Austria Cofinanced the THE PEP HEAT Cycling**
- **Translation into Austrian version with Austrian figures and local parameters**
- **Applying THE PEP HEAT for Cycling in Austria and calculating the health benefits of implementing the Masterplan for Cycling**
- **Dissemination to cities, stakeholders planners, transport experts**

Applying THE PEP HEAT for Cycling



Foto: Michael Praschl

- **Health Economic Assessment Tool (HEAT) for Cycling**
 - **THE PEP (WHO/UNECE) toolbox**
 - **Science-based calculation tool**
 - **Based on analysis of 44 studies**

- **Risk of all-cause mortality 28% lower among regular cyclists (age group 20-60 year)**
- **Risk reduction of**
 - **all-cause mortality,**
 - **cardiovascular disease,**
 - **stroke,**
 - **colon cancer and breast cancer**
 - **Type II diabetes**

Applying THE PEP HEAT for Cycling

- Excel Tool to assess the economic effect of cycling
- Based on reduced all-cause mortality

If x people cycle y distance on most days, what is the value of the improvements in their overall mortality rate?

- HEAT tool for
 - assessment of a city/region (cycling share)
 - assessment of a cycle path (cycling infrastructure)
 - cost-benefit-analysis
- HEAT tool for
 - transport planner
 - traffic engineers
 - health economists
 - policy maker



Applying THE PEP HEAT for Cycling

Three simple steps



Step 1: enter your data

- number of cycle trips per day
 - traffic count
 - estimation for a new infrastructure
- mean trip length
 - traffic census
 - default value (2.0 km)

Applying THE PEP HEAT for Cycling

Three simple steps



Foto: Michael Praschl

Step 2: check the parameters (default values)

- mean number of days cycled per year
- proportion of 'round trips'
- proportion of new cyclists
- mortality data working age population
- value of statistical life
- discount rate
- check timeframes for
 - build up of benefits
 - build up for uptake
 - calculation of mean annual benefit

Applying THE PEP HEAT for Cycling

Three simple steps

Step 3: read economic savings

- present value of mean annual benefit (Euros per years)
- 'saved lives' per year

HEAT for Cycling available

www.euro.who.int/transport (english version)

www.radfahren.klimaaktiv.at (german version)



Foto: www.pd-f.de / Pressedienst Fahrrad

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Applying THE PEP HEAT for Cycling

Three simple steps

Health Economic Assessment Tool for Cycling



Fill in the two fields in Step 1 with your values and read the corresponding results in Step 3. You can use the default parameters supplied in Step 2 or adjust them according to your needs. The population parameters used to calculate the results are displayed at the bottom of the sheet.

About this tool

Step 1: enter your data (all users must fill in the red fields)

Number of trips per day	2.469.996
Mean trip length (km)	2

Step 2: check the parameters

Mean number of days cycled per year	365
Proportion of trips that are one part of a return journey (or 'round trip')	1
Proportion undertaken by people who would not otherwise cycle	1
Mean proportion of working age population who die each year	0,002646
Value of life (in Euros)	EUR 1.876.121
Discount rate	3,3%

Notes on how to use this tool. For additional instructions, hold the mouse over any red triangle.

- How many trips are observed (or are estimated) on the specific route; across a city; or on a network, in any direction?
- What is the mean trip length (estimated or measured)?

The default parameters in green are based on best available evidence and are to be changed only if local data available.

- The estimated number of days per year that people cycle
- What proportion of these observed cyclists do you expect will also be making a return trip later in the day?
- Proportion of these cyclists that are new users DIRECTLY as a result of the new infrastructure or policy
- See local parameters page for explanation.
- What is the standard value of a statistical life used in the country of study?
- Discount rate used for future benefits. This is only used for the 'Present value of mean annual benefits', see step 3.

[Click here to change local parameters](#)

[Click here to view underlying study parameters](#)

Step 3: read the economic savings resulting from reduced mortality

Maximum annual benefit	EUR 1.547.080.000
Savings per km cycled per individual cyclist per year	EUR 0,86
Savings per individual cyclist per year	EUR 1.253
Savings per trip	EUR 1,72

Total value of lives saved (mortality only) assuming 'steady state' of health benefits achieved

Mean annual benefit: EUR 1.283.839.000

This value takes the likely build up of benefit into account (see below)

Present value of mean annual benefit: EUR 811.529.000

This value uses the discount rate from section two to calculate the present value, taking inflation into account

Based on:
3,25% discount rate
7 year build-up of benefit and 7 year build-up of uptake, averaged over 25 years

[Click here to change the timeframe used in calculation](#)

[Click here to view full calculation, graphs and adjust error](#)

[Reset all default values](#)

Population parameters used to calculate results

Population that stands to benefit	1234998
Mean proportion of working age population who die each year	0,002646
Expected deaths in the local population	3267,80
Protective benefit, according to actual distance traveled	0,25
Lives saved	824,62

- Based on number of individual cyclists calculated from data in steps 1 and 2
- This reflects the relative risk of all cause mortality in the age groups that are most likely to cycle
- Yearly deaths expected among the population of cyclists (assuming they are aged 25-64)
- Relative risk of death among cyclists, adjusted for the actual distance cycled (assuming regular trips per year)
- Reduction in number of deaths expected due to the modelled increase in cycling

Applying THE PEP HEAT for Cycling Austrian results



- Austrian national goal 10% cycling share until 2015
- HEAT for Cycling used to calculate the economic effects
- Set of Austrian parameter

Austrian results

- 811 Mio. Euro mean annual benefit
 - 824 'saved lifes' per year
 - 1.253 Euro annual savings per cyclists
- Strong arguments for the promotion of cycling in particular for investments in cycling infrastructure



Thank you for your kind attention!