Jobs in green and healthy transport

Christian Schweizer
WHO Regional Office for Europe

Dawei Wu
University of Oxford
JOBS IN GREEN AND HEALTHY TRANSPORT

BACKGROUND / RATIONALE
Transport and health

1. **Physical inactivity**: 3.2 million deaths and 2.8% of global DALYs in 2010 (GBD 2010)
   - Obesity, NCDs (cardiovascular disease, some cancers, diabetes)

2. **Road traffic crashes** kill >90,000 and injure at least 2 million in Europe

3. **GHG emissions and air pollutants** (CO$_2$, small particulates, black carbon, nitrogen oxides)

4. **Noise pollution** and related stress, quality of life in urban areas

5. **Social equity** in terms of access to mobility
FUEL CO₂ EMISSIONS

The amount of CO₂ emissions required to fuel different modes of transport*. [per passenger kilometres]

- Bicycle: 15 g
- Bus: 95 g
- Car: 229 g

*Based on average occupancy rate of: 1.16 for cars, 10 for buses, 1 for bicycles. — Includes all CO₂ emissions linked to fuel including production, distribution and consumption.

FUEL TYPES
- Cyclist
- Bus
- Car

www.ecf.com
Sustainable development via green growth

• Economic significance
  – Over 10 million jobs in the EU alone
  – 5% of GDP

• Championing the global green economy agenda
  – exploring new opportunities for job creations and economic development, while *at the same time* maximizing the possible gains for environment and health
  – THE PEP Amsterdam Goal #1
LAUNCHED PARTNERSHIP IN ASTANA IN 2011 TO:

1. Stimulate a debate and a shared understanding;
2. Document the breadth of existing experiences in Europe and other parts of the world;
3. Analyse the potential of greening “old jobs” and creating “new green jobs” in transport and assess the impact of such approaches on the environment, health, transport and the economy;
4. Share and disseminate good practice;
5. Develop strategies and actions for stakeholders to implement Goal 1 of the Amsterdam Declaration.
Show cases for creating local green and healthy transport jobs
JOBS IN GREEN AND HEALTHY TRANSPORT

METHODOLOGY
Defining jobs in green and healthy transport

• Previous definitions

• Proposed definition:
  – Jobs that form part of a wider solution to climate change, helping to facilitate the necessary reduction in emissions (hence “green”); AND

  – Jobs that simultaneously promote healthier modes of transport which can contribute directly to reductions in health risks (hence “healthy”).
Why a focus on walking, cycling and public transport?

- Consistency with THE PEP aims
- Great potential of multiple benefits

- Air pollution, noise, GHG emissions
- Energy consumption
- Congestion
- Land consumption
- Quality of the urban environment
- Social equity
- Physical activity
For example, JGHT are jobs that...

- reduce air pollution, noise and greenhouse gas (GHG) emissions;
- reduce energy consumption;
- increase safe walking and cycling;
- improve transport efficiency
## Where are the green and healthy transport jobs?

<table>
<thead>
<tr>
<th>Supporting Active Travel</th>
<th>Improving Public Transport and increase attractiveness</th>
<th>Technological Measures to Reduce Emissions per Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>bicycle retail and maintenance, (high-quality) bicycle production, construction and maintenance of high quality infrastructure and environments for walking and cycling, provision of clothing, accessories, facilities for walkers and cyclists</td>
<td>Construction and maintenance of public transport vehicles and infrastructure, operating public transport systems, bike hire schemes, pedicabs, car-sharing schemes, developing and maintaining integrated travel networks, development of “bike and ride” systems</td>
<td>production and development of technologies for electric and other lower-carbon vehicles, production of renewable energy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Encouraging Behavior Change</th>
<th>Mobility Management</th>
<th>Freight</th>
</tr>
</thead>
<tbody>
<tr>
<td>installation of lighting, neighbourhood patrols and street maintenance, mobility advisors and behaviour change practitioners, cycle training, public transport route planning, training in more energy efficient driving techniques, and environmental skills training</td>
<td>Establishing mobility centers, promoting customer friendly intermodal mobility systems, promoting innovations in mobility services and transport technologies, innovations in the transport chain, awareness raising, training and education</td>
<td>Production, maintenance and operation of cargo bikes and electrically assisted cycles, logistics and planning to focus more on the environmental aspect</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reducing Car Use</th>
<th>Reducing Travel Demand</th>
<th>Tourism</th>
</tr>
</thead>
<tbody>
<tr>
<td>implementing pedestrianization, parking enforcement, the operation of road pricing schemes, mobility management</td>
<td>Information and Communications Technologies industries, local and decentralized businesses</td>
<td>Provision, maintenance of bicycle hire schemes, route planning for walking, cycling and public transport, local small retailers, local providers of accommodation, community regeneration and heritage development and maintenance schemes, development of locally produced food</td>
</tr>
</tbody>
</table>
JOBS IN GREEN AND HEALTHY TRANSPORT

RESULTS & FINDINGS
Improving public transport

**Jobs in UK public transport industry**

- Rail industry: 256'387
- Light rail industry: 3'284
- Bus/coach industry: 173'700

**Jobs in Spanish sustainable transport industry**

- Direct jobs in manufacturing, car-sharing, mobility management and indirect jobs in related services for public transport: 297'109
- Manufacture of railway equipment: 230'000
- Manufacture of low-emissions vehicles: 50'000
- Transport infrastructure for railways and ports: 850'000
Improving public transport

Jobs per $1 billion investment in public transport in the US

- Production, transportation and material moving: 23,831 jobs
- Management and professional: 5,209 jobs
- Natural resources, construction and maintenance: 4,269 jobs
- Sales and office: 1,802 jobs
- Service: 998 jobs
## Supporting active travel – cycling economies

<table>
<thead>
<tr>
<th>Year</th>
<th>Country</th>
<th>Jobs in cycling economy</th>
<th>Cycling Economy (billion Int $)</th>
<th>Cycling Modal Share (%)</th>
<th>Average distance cycled (km/person/year)</th>
<th>Jobs per km cycled per person per year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>Austria</td>
<td>18,328</td>
<td>1.06</td>
<td>7.0</td>
<td>219.9 (Thaler R, 2011)</td>
<td>83.4</td>
</tr>
<tr>
<td>2010</td>
<td>UK¹</td>
<td>23,415</td>
<td>4.35</td>
<td>2.0</td>
<td>67.6 (NTS 2011)</td>
<td>346.4</td>
</tr>
<tr>
<td>2009</td>
<td>France</td>
<td>35,000</td>
<td>4.76</td>
<td>2.6</td>
<td>0.37 (ENTD 2008)</td>
<td>435.9</td>
</tr>
<tr>
<td>2012</td>
<td>Germany</td>
<td>278,000</td>
<td>20.27</td>
<td>10.0</td>
<td>405.2 (MiD 2008)</td>
<td>686.1</td>
</tr>
<tr>
<td>2012</td>
<td>US</td>
<td>1,100,000</td>
<td>133</td>
<td>1.0</td>
<td>40.2 (NHTS 2009)</td>
<td>27,918.8</td>
</tr>
</tbody>
</table>

¹excludes indirect jobs from cycle tourism
Jobs in Austrian cycling economy

- Trade (retail) & Services (repair/rental) + E-bikes: 1,765
- Manufacturing: 694
- Cycle infrastructure: 1,750
- Cycle tourism: 454
- Cycle sporting events: 336
- Jobs in total: 7,616

Jobs in the French cycling economy

- Retail sales: 1,400
- Manufacturing: 7,350
- Cycle infrastructure: 2,350
- Cycle tourism: 16,500
- Cycle sporting events: 3,100
- Other cycle services: 2,100
- Jobs in total: 20,000

Jobs in British cycling economy

- Retail: 9,000
- Manufacturing: 2,100
- Cycling infrastructure: 1,750
- Cycle infrastructure: 1,400
- Cycle sporting events: 2,350
- Jobs in total: 9,000

THE PEP
Transport, Health and Environment Pan-European Programme

United Nations Economic Commission for Europe
World Health Organization Europe
## Cycle infrastructure

### Jobs generated per million dollar investment in local currency

<table>
<thead>
<tr>
<th>Project Type</th>
<th>Direct</th>
<th>Indirect + Induced</th>
</tr>
</thead>
<tbody>
<tr>
<td>US road infrastructure projects only</td>
<td>4.1</td>
<td>3.7</td>
</tr>
<tr>
<td>US road infrastructure + bike and pedestrian facilities</td>
<td>4.3</td>
<td>4.2</td>
</tr>
<tr>
<td>US pedestrian infrastructure projects only</td>
<td>5.2</td>
<td>4.7</td>
</tr>
<tr>
<td>US bike infrastructure projects only</td>
<td>6</td>
<td>5.4</td>
</tr>
<tr>
<td>Bike lane projects Baltimore</td>
<td>7.9</td>
<td>6.5</td>
</tr>
<tr>
<td>Valleys Cycle Network Wales</td>
<td>5.0</td>
<td>6.0</td>
</tr>
<tr>
<td>Community Links Project Scotland</td>
<td>5.3</td>
<td>6.3</td>
</tr>
</tbody>
</table>

**THE PEP**

**Transport, Health and Environment Pan-European Programme**
Bike-sharing

Jobs in public bike hire schemes

- Bicing Barcelona: 230
- Barclays Cycle for Hire, London: 300
- Paris Vélib': 285

THE PEP - Transport, Health and Environment Pan-European Programme

United Nations

Regional Office for Europe

World Health Organization
Tourism

• Austria
  – 7,616 jobs in cycle tourism
  – 5.6% of Austria’s summer tourism value

• France
  – 16,500 jobs in cycle tourism
  – 3.5% of all holidays linked to cycling
  – 79% increase in jobs if modal share = 15%

• UK
  – National Cycle Network: >9,000 jobs in leisure, tourism and retail; regeneration of derelict spaces
JOBS IN GREEN AND HEALTHY TRANSPORT

DISCUSSION & NEXT STEPS

THE PEP
Two main conclusions

1. Substantial potential for employment creation in green and healthy transport
   – Both labour- and knowledge-intensive jobs
   – Timeliness of study – unemployment (esp. youth) crisis
   – Promoting green and healthy transport can be a policy win-win-win for economic, health and environment

2. Employment gains need to be factored into traditional CBA/MCA for transport policies
Limitations

1. Quality data and improved methodology needed
   – Diversity in ways JGHT are counted/presented (not all jobs reported are FTEs)
   – Lack of data on other categories of JGHT and cycling rates
   – Type of economic impact analysis used in generating estimates of job creation

2. Language / Database searched
   – Only English case studies considered
   – Only one transport database searched
What next?

• HEAT for cycling to assess/compare benefits in addition to job creation
• Extrapolation to other European countries/cities
• Developing a methodology for counting JGHT
• Ultimate goal: Joint quantification of economic, health and environmental impacts of investments in active travel policies
  – Aid in developing a tool for multi-criteria analysis of transport projects