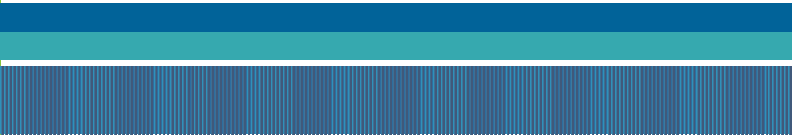


The need to develop sustainable transport policies, which improve the quality of transport while contributing to better health, a cleaner environment and greater social cohesion, was one of the reasons for establishing the Transport, Health and Environment Pan-European Programme (THE PEP). This is an advance executive summary of a new study *Riding towards the green economy: cycling and green jobs*, undertaken in the context of THE PEP's partnership on jobs in green and healthy transport. It builds on a 2014 publication *Unlocking new opportunities - jobs in green and healthy transport* by reviewing the methods used in other studies to estimate the number of jobs associated with cycling for various locations and gathering more evidence on cycling-related jobs directly from cities. This summary highlights the main findings of the study. The full report will be released later this year.

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cycling and green jobs

Key findings of the forthcoming joint report by
UNEP, WHO and UNECE



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Riding towards the green economy

cycling and green jobs

Key findings of the forthcoming joint report by
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The need to develop sustainable transport policies, which improve the quality of transport while contributing to better health, a cleaner environment and greater social cohesion, was one of the reasons for establishing the Transport, Health and Environment Pan-European Programme (THE PEP). This is an advance executive summary of a new study *Riding towards the green economy: cycling and green jobs*, undertaken in the context of THE PEP's partnership on jobs in green and healthy transport. It builds on a 2014 publication *Unlocking new opportunities – jobs in green and healthy transport* by (1) reviewing the methods used in other studies to estimate the number of jobs associated with cycling for various locations and (2) gathering more evidence on cycling-related jobs directly from cities. This summary highlights the main findings of the study. The full report will be released later this year.

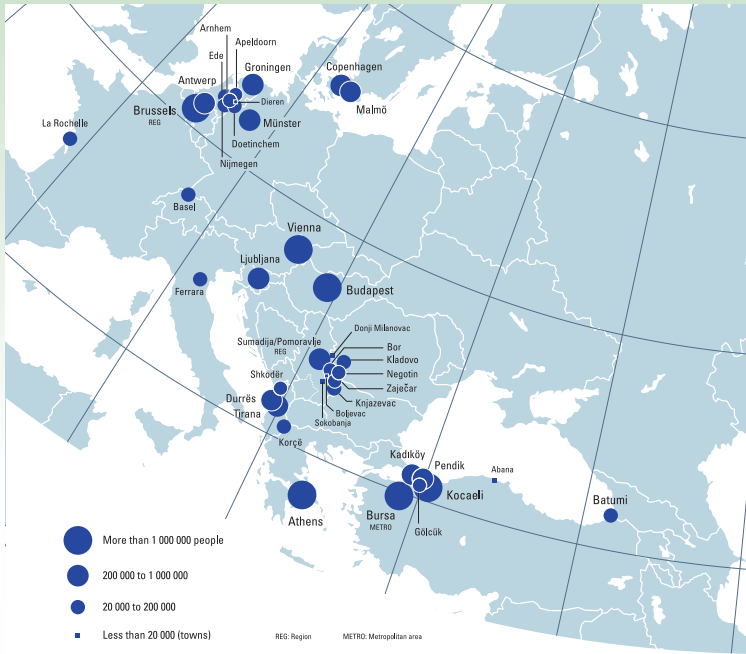
In the 2014 report, many estimates of the number of cycling-related jobs were based on national-level statistics and studies. In contrast, for the forthcoming report, cities were engaged directly to estimate the number of jobs associated with cycling. Such an approach is more relevant to city authorities, as it helps to provide a clearer picture of the current and potential employment

benefits of cycling in a city. The new study represents the first attempt to collect evidence on the number of cycling-related jobs from cities using a standardized approach in the pan-European region. We have received data and information from 37 cities or regions in 15 countries in the region (Fig. 1).

Up to 435 000 additional jobs might be created if 56 major cities had the same modal share of cycling as Copenhagen

The new data gathered for this new forthcoming report enabled a review of the number of additional cycling-related jobs identified in the 2014 publication. That report estimated that about 76 600 cycling-related jobs could be created if 56 major cities in the pan-European region achieved the same share of cycling as a mode of transport as Copenhagen, Denmark's capital. The method used then was to simply extrapolate the number of cycling-related jobs in Copenhagen. It was based on a comparison of the populations of the 56 major cities with that of Copenhagen and the proportion by which the respective

Fig. 1. Cities and regions that supplied data for the forthcoming report.



modal shares of cycling would have to increase to reach the share of Copenhagen.

The potential number of additional jobs identified in the 2014 report was a conservative estimate, since it only considered existing cycling-related jobs in retail, wholesale and design in Copenhagen. The number of jobs associated with administration, construction and tourism in Denmark's capital had not been included. The comparison between the information for the cities covered in both reports confirmed that the previous report had underestimated the number of existing jobs in these cities in most

cases. On average, the new estimates were more than 150% higher. In addition, data on the relationship between the number of cycling-related jobs per 1000 residents and the modal share of cycling suggested that the factor relating these two pieces of information used in the previous report, which was derived from data from Copenhagen, was also significantly underestimated. In this new perspective, the total estimated cycling-related jobs that could be created would increase to 435 000 if the same 56 major cities had the same cycling modal share as Copenhagen (Table 1).

Cycling-related jobs vary, and more cycling creates new types of jobs

The types of jobs associated with cycling vary, and different jobs require different skill sets (Fig. 3). The jobs identified range from designing and manufacturing bicycles to providing various types of services that require

Table 1. Populations of selected major cities, their cycling modal shares, the estimated numbers of jobs currently associated with cycling and the numbers of additional jobs potentially created by increasing the modal share of cycling to that of Copenhagen

Country	City	Population (millions)	Cycling modal share (%)	Estimated number of existing cycling-related jobs	Potential number of additional cycling-related jobs
Albania	Tirana	0.80	3% ^a	150	1 150
Andorra	Andorra-La-Vella	0.022	3% ^a	17	133
Armenia	Yerevan	1.12	3% ^a	875	6 709
Austria	Vienna	1.77	7%	1 058	2 872
Azerbaijan	Baku	2.12	3% ^a	1 655	12 691
Belarus	Minsk	1.89	0%	98	12 645
Belgium	Brussels	1.08	4%	230	1 479
Bosnia and Herzegovina	Sarajevo	0.31	3% ^a	238	1 825
Bulgaria	Sofia	1.17	1%	304	7 605
Canada	Ottawa	1.24	2%	644	7 732
Croatia	Zagreb	0.79	5%	1 031	4 329
Cyprus	Nicosia	0.055	3% ^a	43	329
Czech Republic	Prague	1.24	1%	323	8 071
Denmark	Copenhagen	0.55	26%	3 712	0
Estonia	Tallinn	0.40	4%	417	2 294
Finland	Helsinki	0.60	7%	1 084	2 941
France	Paris	2.23	3%	1 743	13 360
Georgia	Tbilisi	1.17	3% ^a	911	6 982
Germany	Berlin	3.50	13%	11 836	11 836
Greece	Athens	2.48	2%	905	10 860
Hungary	Budapest	1.74	2%	1 049	10 809
Iceland	Reykjavik	0.12	3% ^a	92	706
Ireland	Dublin	0.53	3%	412	3 155
Israel	Tel Aviv	0.40	9%	947	1 788
Italy	Rome	2.76	0%	287	18 380
Kazakhstan	Astana	0.66	1%	172	4 301

Country	City	Population (millions)	Cycling modal share (%)	Estimated number of existing cycling-related jobs	Potential number of additional cycling-related jobs
Kyrgyzstan	Bishkek	0.89	3% ^a	694	5 320
Latvia	Riga	0.65	3% ^a	507	3 890
Liechtenstein	Vaduz	0.0052	3% ^a	4	31
Lithuania	Vilnius	0.55	1%	144	3 588
Luxembourg	Luxembourg-Ville	0.01	3% ^a	78	597
Malta	Valletta	0.0062	3% ^a	5	37
Monaco	Monaco City	0.036	3% ^a	28	217
Montenegro	Podgorica	0.18	3% ^a	141	1 081
Netherlands	Amsterdam	1.07	33%	9 170	0 ^b
Norway	Oslo	0.60	5%	779	3 272
Poland	Warsaw	1.71	5%	2 134	9 426
Portugal	Lisbon	0.47	1%	123	3 086
Republic of Moldova	Chisinau	0.79	3% ^a	616	4 721
Romania	Bucharest	1.94	1%	504	12 593
Russian Federation	Moscow	11.54	3% ^a	9 002	69 015
San Marino	San Marino	0.0045	3% ^a	3	27
Serbia	Belgrade	1.64	1%	426	10 657
Slovakia	Bratislava	0.41	3% ^a	321	2 463
Slovenia	Ljubljana	0.28	10%	110	176
Spain	Madrid	3.27	1%	849	21 223
Sweden	Stockholm	0.86	1%	225	5 618
Switzerland	Berne	0.12	11%	356	485
Tajikistan	Dushanbe	0.70	1% ^a	183	4 576
The former Yugoslav Republic of Macedonia	Skopje	0.32	3% ^a	247	1 895
Turkey	Ankara	4.89	3% ^a	3 815	29 248
Turkmenistan	Ashgabat	0.64	3% ^a	497	3 809
Ukraine	Kyiv	2.77	1% ^a	721	18 023
United Kingdom	London	7.83	3%	6 104	46 799
United States of America	Washington, DC	0.62	3%	482	3 696
Uzbekistan	Tashkent	2.30	1% ^a	597	14 927
Total					435 480

^aFor these cities, no information on the actual modal share for cycling was identified, so in most cases a low modal share of 3% was assumed. This is probably an overestimate, as only about one quarter of the cities for which information was identified had cycling modal shares greater than this. For three cities for which no information on the actual modal share for cycling was identified, a modal share of 1% was assumed, as information that was identified suggested that there was almost no cycle use in these cities.

^bNo additional cycling-related jobs are projected in Amsterdam, as its cycling level is already higher than that of Copenhagen.

various levels of technical expertise and to jobs in administration and construction. For cities that host a bicycle manufacturing company, such a company can contribute significantly to the number of cycling-related jobs. For example, Dieren, Netherlands has more than six times the number of cycling-related jobs per 1000 people than Groningen and would therefore dominate the other estimates if it had been included in Fig. 2.

The cities are presented in the order of the number of cycling-related jobs in each city from left to right.

Further, the data collected demonstrated that more cycling leads to not only more jobs but also the creation of various services, which in turn result in new types of

cycling-related jobs. The information provided included various types of services using bicycles, including bicycle messengers, bicycle taxis and cycle logistics (using bicycles for distributing freight in cities). Such services can be facilitated by infrastructure that is conducive to cycling and to a more cycling-friendly transport culture in a city. Information for the cities of Antwerp, Groningen and Ljubljana demonstrate the extent to which new types of jobs can be created. In Antwerp and Ljubljana, the jobs associated with public bicycle hire schemes accounted for more than 10% of the total number of cycling-related jobs, whereas in Groningen more than 20% of the cycling-related jobs in the city were associated with bicycle parking.

Fig. 2. Cycling-related jobs per 1000 residents for each city (excluding cities with a large share of jobs in tourism and design and manufacture)

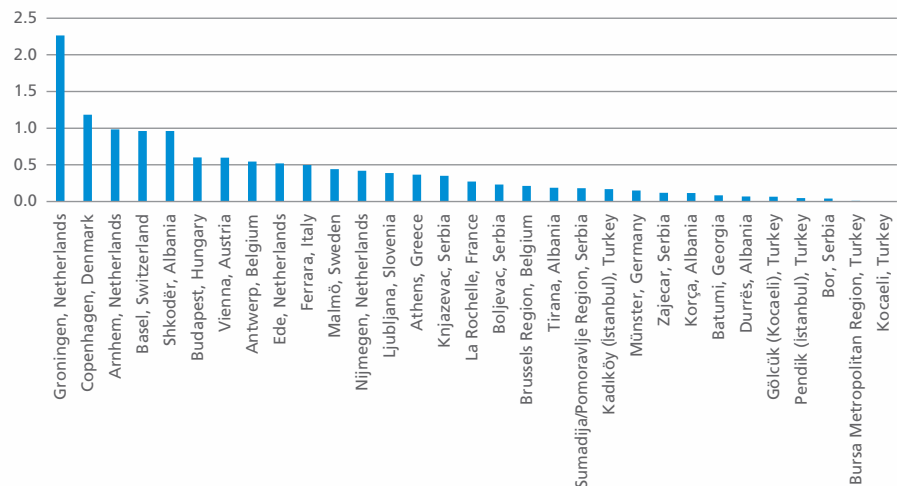
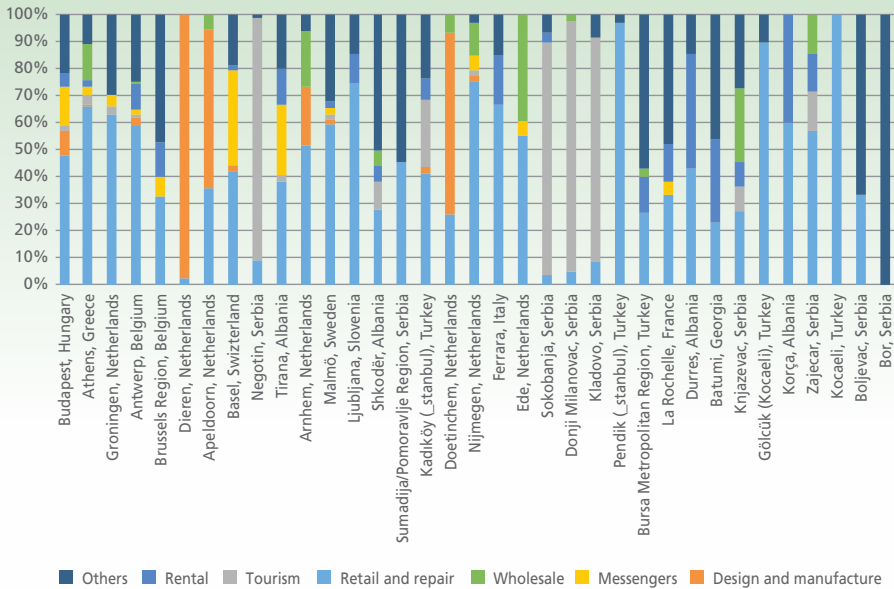


Fig. 3. Percentages of cycling-related jobs in each city by main categories of jobs



Investing in cycling increases the number of cycling-related jobs

Investing in cycling helps to encourage and facilitate cycling and to contribute to the development of a more cycling-friendly transport culture. As cycling increases, the higher number of cyclists will need more bicycles, more cycling accessories and more maintenance and repair services.

The more bicycle trips there are in a city, the more cycling infrastructure will be needed, and an increase in the popularity of cycling will also encourage entrepreneurs to set up related businesses and to develop additional services. This was clearly demonstrated by the studies in Portland, Oregon, United States of America. These showed an increase in the number of jobs over time (Fig. 4) as the modal share of cycling also increased. The city with one of the highest number of cycling-related jobs per 1000 residents, Groningen, Netherlands, also has the highest modal share for cycling of all of

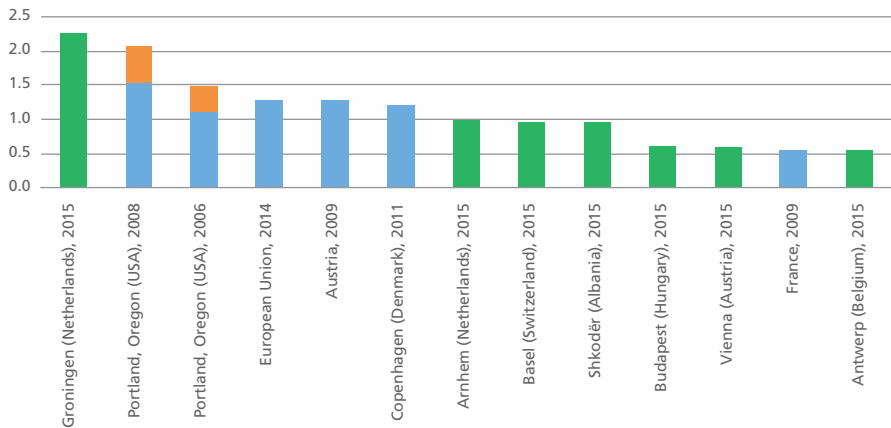
the cities that provided data for the forthcoming report. Many of the other cities for which data was gathered for the forthcoming report also have high modal shares for cycling.

The green bars represent the data collected for the forthcoming report. The blue bars represent data estimated by other reports. For Portland, Oregon, the blue bars represent a low estimate of the number of cycling-related jobs and the orange bars represent a high estimate. The figure excludes cities where a high proportion of jobs relate to either cycle manufacturing or tourism; these are discussed in more detail elsewhere.

Cycling-related jobs are not only in cities – tourism jobs are also very important

Another important finding is that there is great potential for cycling-related jobs outside cities. This is suggested by analysing both the information in other studies and the data gathered from the cities for the forthcoming report. Some of the other studies that focus on wider geographical areas (national or regional) concluded that tourism could comprise a significant proportion of the total number of

Fig. 4. Locations with some of the highest number of cycling-related jobs per 1000 residents from other reports and the data collected for the forthcoming report



jobs associated with cycling. For example, the share of cycling-related jobs related to tourism in Austria and France are estimated to be 70% and 47%, respectively.

For the cities for which information was collected for the forthcoming report (some of which are illustrated by the green bars in Fig. 4), the average proportion of cycling-related jobs associated with tourism was only 7%. However, this varied significantly among cities. Some cities reported that they could not disaggregate the jobs associated with tourism into cycling and non-cycling tourism jobs. Others only counted the jobs associated with cycling tours. At the other end of the range, some cities in Serbia – including cities on the EuroVelo 6 route along the River Danube – reported that the jobs associated with tourism comprise at least 80% of the total number of cycling-related jobs. Consequently, the data collected for the current study are inconclusive on the proportion of cycling-related jobs that are in tourism. However, if the high number of jobs associated with cycling tourism in Serbia is linked to the presence of the Eurovelo 6 route, this would suggest that the presence of interurban cycling infrastructure could be important in creating cycling-related jobs. More research would be needed to confirm this conclusion. Since other national

studies identify that a high proportion of cycling-related jobs are in tourism, along with the evidence recently collected for some cities in Serbia, the number of cycling-related jobs in tourism could be much higher than suggested by the information in the forthcoming report.

The indirect and induced jobs related to cycling can be significant

The studies reviewed and the data collected also revealed other insufficiently investigated aspects related to the possible creation of cycling-related jobs. Many jobs that might be considered to be associated with cycling tourism are indirect jobs, since they occur in other sectors of the economy, such as in the accommodation and food sectors. Such jobs are more difficult to associate with cycling and are therefore often not included in estimates of the number of cycling-related jobs, which tend to focus only on direct jobs. Other sectors might be contributing to jobs related to cycling that previous studies could not consider. In addition, the number of induced jobs created when the overall level of spending in the economy rises as a result of increased employment in cycling is also

potentially important. Only one study, that for the Austrian Cycling Master Plan 2015-2025, estimated the number of induced jobs; it concluded that these could account for 40% of the total number of jobs associated with cycling.

Better and more consistent data are needed

The direct collection of data from the majority of the cities covered in the new report proved useful and brought several benefits. To start with, it identified that, for the majority of cities covered in both reports, the new estimate for the number of jobs associated with cycling substantially differs from previous estimates. Unsurprisingly, such bottom-up data collection is more relevant to city authorities than top-down estimates, since it helps to provide a clearer picture of the current and potential employment benefits of cycling in the city. Even better results could be reached by further disaggregating the data habitually collected by city authorities to explicitly identify the contribution of cycling to various statistics, especially those relating to employment.

In addition, the apparent importance of tourism to the number of cycling-

related jobs, especially outside cities, suggests that understanding more about where such jobs are and how they are created would be useful, so that public authorities can focus on creating the conditions that enable such jobs to be generated.

Another key finding from the forthcoming report is that the relationship between the number of cycling-related jobs, a city's population and its modal share for cycling is complex and would benefit from further research that would, in turn, be facilitated by better and more consistent data collection.

Public authorities play a major role in creating green jobs related to cycling

One of the objectives of the forthcoming report and THE PEP partnership on jobs in green and healthy transport and partnership on cycling, is to reach out to public authorities so that they can fully realize the benefits of cycling. They include not only the job creation potential as outlined in the recent analysis but also the role cycling can play in delivering a greener and healthier transport system. This requires that local authorities take a proactive approach to cycling. City

authorities have to encourage and facilitate cycling as an integral part of a multimodal transport system by integrating cycling fully into a multimodal transport strategy, including monitoring the existing levels of cycling and understanding the barriers to increasing cycling.

Further, understanding and increasing the job creation potential of cycling also requires that cities know which cycling-related jobs are present in their cities and how to facilitate these and to stimulate more. This information can then be fed back into the appraisal and planning of transport policies to ensure that cycling reaches its full potential as a mode of transport in the city. The forthcoming report will demonstrate that cycling has the potential to create a significant number of jobs, which complement other benefits

such as reduced carbon dioxide emissions and air pollution and improved health, all of which can be converted into monetary equivalents. Including such information in the appraisal and planning of transport policies would enable a more accurate assessment of the potential benefits of cycling and enable cycling to play a full role in delivering a green and healthy transport system from the local to the national levels.

Considering all the benefits of cycling, promoting it clearly provides an excellent way to move towards achieving many of the Sustainable Development Goals. This especially applies to Sustainable Development Goals 3 and 11 on ensuring healthy lives and promoting well-being for all at all ages and making cities and human settlements inclusive, safe, resilient and sustainable.

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