

# DECISIO



Dutch Cycling Embassy / Tour de Force  
Export value of the Dutch  
bicycle sector  
*Social and symbolic value*

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Social and symbolic value of the Dutch role model function to cycling

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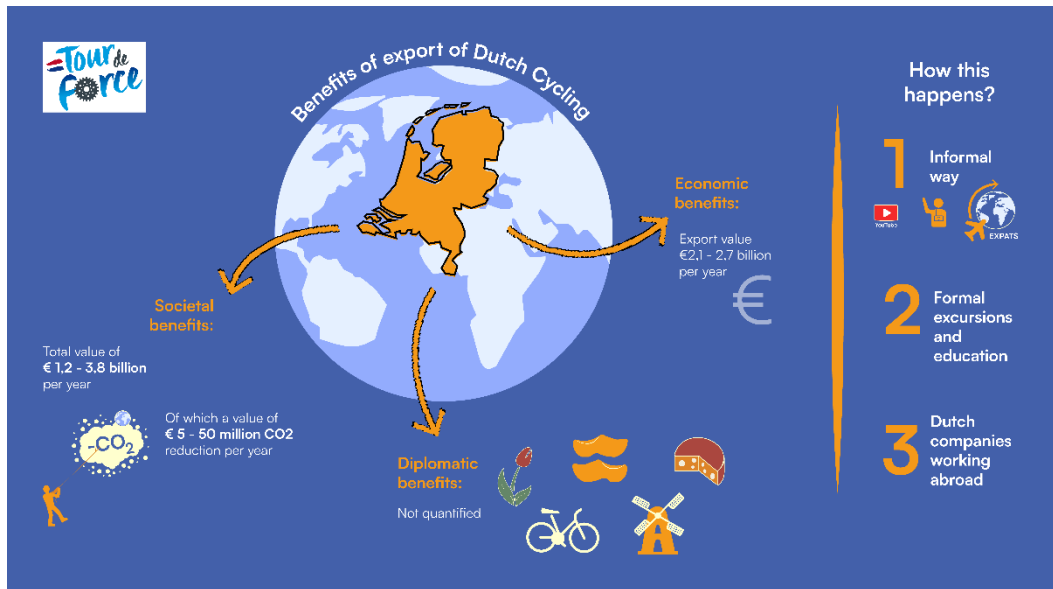
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## Contents

Abstract	1
1. Introduction	7
1.1 Background	7
1.2 Research questions	7
1.3 Our approach	8
1.4 Reader's guide	9
2. Disseminating Dutch cycling culture	10
2.1 Three ways of exerting influence, all three important	11
2.2 The three ways of exerting influence reinforce each other	12
3. Informal influence	14
4. Formal knowledge transfer	20
5. Dutch professionals involved in cycling projects worldwide	25
5.1 Conclusion on disseminating Dutch cycling culture	29
6. Diplomatic and image value of the bicycle	31
7. Social impact	34
7.1 Development of bicycle use worldwide	34
7.2 Social impact	36
7.2.1 EXPLANATORY NOTES ON THE IMPACT	36
7.2.2 Extent of the impact	38
7.3 Netherlands' contribution	40
Appendix I Research approach	42
Desk research and data analysis	42
Interviews	42
Survey	43
Appendix II Questionnaire	47
Appendix III Social impact indicators	51

## Abstract



### *Cycling is normal...*

In the Netherlands, we find it normal that everyone cycles and (at least) has a bicycle, that our children cycle to school on their own, that in our cities easily 40 percent of all journeys are made by bicycle and that there are considerably fewer cars driving and parked in our cities than in other cities around the world.

### *...at least in the Netherlands*

In the rest of the world, it is not normal at all. Most people outside the Netherlands do not realise that mobility in their cities could be organised very differently. Or they think that cycling is and always will be a marginal mode of transport. Many cities around the world would be happy to settle for a 5 or 10 percent share for the bicycle.

### *So the Netherlands is an international source of inspiration for urban mobility*

Many of these people who visit Dutch cities (by chance, or on an excursion, or even virtually via YouTube), have their perceptions changed. The moment they see for themselves that it is possible to cycle safely en masse through cities and that this substantially reduces car traffic and results in a considerable gain in space and more social and greener cities with a fit population, they begin to realise that this is a perspective that can also work in their city/country. This report contains numerous examples of people from all over the world who were inspired by the

Dutch example and who in turn inspired others, often by having them visit the Netherlands as well.

"The Netherlands is so far ahead of the game, it's a *parallel universe*"

Mark Wagenbuur, Bicycle Dutch

Of course, the Netherlands is not the only example that other countries and cities are looking at. Typically, people also look at Copenhagen and, naturally enough, they like to look at cities that are similar to their own. Bogotá, for example, is a shining example in South America. But the ultimate example, which provides lasting inspiration, including for other model cities, is still the Netherlands, as this study shows. Cycling in the Netherlands continues to develop rapidly and there are numerous innovations, so new sources of inspiration are constantly evolving and spreading around the world (including via more advanced cycling cities).

### *Three main ways of exerting influence*

The study shows that *informal influence* is very important. This includes YouTube videos, inbound tourists who actually only wanted to see the canals but are impressed by the quality of life in our cities and the international media attention focused on the Netherlands as a cycling nation.

Moreover, *formal influence* is also very important. This includes study tours, excursions and workshops, where participants really come to understand the differences between the Netherlands and their home situation. They learn that it has not always been like this in the Netherlands either, that it was based on decades of development, that cycling policy has to go hand in hand with good urban planning, with stricter parking policies and measures to restrict car use and that this has always met with a lot of resistance. The international visitors see/learn that our city centres are still flourishing, that Dutch cities are among the most accessible in the world and that our cities are safe, green and social, without costing much in the way of subsidies. The final realisation by those outside the Netherlands that this can also work in their own city is fundamental to the success of formal influence. Formal influence also includes study programmes in the Netherlands, which are very popular among international students, and the ThinkBike workshops that DCE organises (often jointly with embassies).

"Study tours and site visits have been absolutely fundamental to cities like New Orleans and Boston; otherwise they wouldn't be doing the right things there."

Andy Clarke, Toole Design

The third level of influence that we describe in this study is *the involvement of Dutch companies or professionals* in cycling policy in cities and countries outside the Netherlands. Although more and more companies are active and successful in promoting Dutch cycling policy abroad, this level currently has less impact it could have. On the one hand, this is because new bicycle cities focus on the technical side of cycling infrastructure and have to deal with their own laws and highway codes. The lessons from the Netherlands are becoming increasingly important for ensuring the continuing development of cycling policy. On the other hand, there is no need for Dutch advisers to do this in other countries, as there is enough work for them in their own country, and it often pays better. So the incentive to export the knowledge comes mostly from individuals with a drive to help other countries.

#### *Time to be much more active in setting an example*

From the rest of the world, the Netherlands is therefore considered a very special and inspirational cycling country. Unfortunately, we in the Netherlands take our cycling culture so much for granted that we fail to realise how different it is from the rest of the world and that we can do much more to spread our cycling culture and help other cities and countries take the right steps.

It is significant that the United Nations calls on member states to promote cycling as a means of combating climate change. Likewise, interviewees from the World Bank, the European Union and the World Resource Institute (WRI) all believe that the Netherlands can do much more with its knowledge and experience in the areas of cycling and urban mobility and design. The Netherlands, through the WRI, does help with its water and environmental knowledge to improve the situation in other countries, but does not participate in their mobility programme.

**"With its cycling knowledge, the Netherlands holds the key to tackling the climate problem and other urban issues in cooperation with other countries and cities."**

Claudia Adriazola-Steil, World Resource Institute

#### *How to achieve major social benefits*

In the study, we made a conservative estimate of the social benefits generated internationally by Dutch cycling culture, including all the benefits associated with an increase in cycling, such as cleaner air, health benefits, fewer traffic jams, climate, gains in space, etc.

We estimate the value of the Netherlands' contribution to stimulating cycling elsewhere in the world to be between EUR 1.2 and 3.8 billion annually. This estimate is based on a minimum contribution of the Dutch example of 1 percent to all cycle-kilometres in the continents most affected (Europe, North America and Oceania) or a contribution of at least 1 to 10 percent of the *growth* in cycle-kilometres in these areas between 2011 and 2020. It should be noted that this growth was still very limited. In the near future, it is likely to increase even more rapidly.

*Annual social benefit of cycling worldwide (Europe excl. Netherlands and Denmark, North America and OECD countries in the Pacific) attributable to the Netherlands*

Netherlands' contribution	All cycle-kilometres (2020)	Extra cycle-kilometres (2011-2020)
1 percent	€1.2 billion	€0.4 billion
10 percent		€3.8 billion

#### *Most cost-effective way to reduce CO2 emissions*

If we zoom in on the climate benefits of the growth in cycling worldwide, we can see that the climate benefits of the growth in cycling in Europe, North America and Australia between 2000 and 2020 will contribute to an annual reduction in CO2 emissions worth at least EUR 550 million. As a very conservative estimate, 1 to 10 percent share of this corresponds to an annual recurring contribution of EUR 5.5 to 55 million, which can be credited to the Netherlands. This contribution could certainly increase significantly in future. Because the Dutch government currently contributes very little financially<sup>1</sup> to promoting Dutch cycling culture, it is safe to say that the international promotion of the country's cycling knowledge is one of the most cost-effective ways for the Netherlands to combat global warming.

#### *There are also great opportunities to boost the Netherlands' international image and international relations*

The study has also clearly shown that Dutch cycling culture contributes very positively to the international image of the Netherlands, as well as to the country's diplomatic and international relations. At the same time, it has also become very clear that the Netherlands could get much more out of this by being much more

<sup>1</sup> The Dutch Cycling Embassy receives a net annual subsidy of just over EUR 200,000 from the Ministry of Infrastructure and Water Management.



active in promoting Dutch cycling culture and helping other cities and countries develop their own cycling policies and culture. This provides great opportunities to help other countries and at the same time boost the Netherlands' international image, while *in the process* creating economic opportunities for Dutch business.

## "Narrow" economic export value also important

In a separate part of this study<sup>2</sup>, we also investigated the "narrow" economic export value of the bicycle sector to the Netherlands. Based on statistics from Statistics Netherlands and a survey of exporting companies in the bicycle sector. The table below shows the estimated export value and the number of FTEs required (2019) for each sub-sector.<sup>3</sup>

### *The economic significance of the export of goods and services relating to cycling (2019)*

	Export value	Employment
Manufacture of and trade in bicycles	€ 1.6 billion	3,750 FTEs
Spending by cycling-related inbound tourists	€ 0.5 - 1.1 billion	Unknown
Manufacture of and trade in bicycle parking facilities	€ 8 - 13 million	40 - 70 FTEs
Traffic and engineering firms	€ 3 - 4 million	15 - 25 FTEs
Other research and consulting firms	€ 1 - 5 million	5 - 25 FTEs
Architectural/urban/spatial design	Insufficient information	
Operation of shared bicycle systems	Insufficient information	
Manufacture of and trade in bicycle accessories and clothing	Insufficient information	
Education and knowledge institutions	Insufficient information	
Media/bicycle promotion/campaigns	€ 0,2 - 0,3 million	1 - 2 FTEs

Source: Decisio, based on CBS Statline figures and our own survey

It is clear from the figures that the "manufacture of and trade in bicycles" category is very dominant. This subsector has an export value of EUR 1.6 billion per annum and 3,750 full-time jobs. Spending by foreign tourists who visit the Netherlands to cycle is also included in bicycle-related exports. This spending is estimated at between EUR 0.5 and 1.1 billion. The export of bicycle parking facilities also amounts to between EUR 8 and 13 million and 40 and 70 full-time jobs. The export of the service sub-sectors (engineering and consultancy firms) is estimated at EUR 4 to 9 million and 20 to 50 full-time jobs.

However, it should be noted that this does not include sales by foreign subsidiaries and that the statistics and the survey show that exports have grown strongly in recent years.

Moreover, they are expected to continue growing over the next few years.

<sup>2</sup> For more information, see: Decisio (31 March 2021) Exportwaarde Nederlandse fietsensector - Deelrapport 'enge' economische waarde.

<sup>3</sup> With the exception of the "manufacture of and trade in bicycles" category - for which statistics on the export value are available from Statistics Netherlands - all the categories have been given a range due to the uncertainty resulting from imperfect data.



*Conclusion: a world of opportunities for the Netherlands*

This study has clearly shown that the exemplary role of the Netherlands as a cycling nation is large and important and has a direct or indirect impact all over the world. At the same time, it has also become clear that we in the Netherlands are very often unaware that with our knowledge and experience we can be very effective in helping other countries and cities to promote cycling. We are doing this already, but on a small scale, through the Dutch Cycling Embassy and a number of well-intentioned individuals, educational institutions and companies. Giving this a boost and making it a real policy to help other cities and countries with our cycling culture could generate huge social benefits. In fact, this is probably the most cost-effective way for the Netherlands to help reduce CO2 emissions worldwide.

# 1. Introduction

## 1.1 Background

The Dutch Cycling Embassy (DCE), the Tour de Force (TdF) partnership and the Dutch Ministry of Infrastructure and Water Management need to obtain a reliable picture of the "export value" of bicycles to the Netherlands. This includes the economic export value, but also the social impact of promoting cycling worldwide and the image of the Netherlands as a cycling nation. Part of this social impact worldwide directly benefits the Netherlands, especially when it comes to preventing CO2 emissions anywhere in the world.

The aim of the study is to ascertain the (added) value of promoting cycling worldwide. The DCE needs this, of course, as it is an organisation that wants to promote the export of everything related to cycling. As does the Ministry of Infrastructure and Water Management if it is to make a proper assessment of the usefulness and necessity of promoting these activities and in discussions with other ministries about the importance of national and international pro-cycling campaigns.

Recently, Decisio completed a study focusing on the "narrow" economic export value of bicycles<sup>4</sup>. This concerned the added value and jobs associated with the export of bicycles and bicycle-related products and services. This part of the study focuses on the broad social value of this bicycle export value.

In contrast to the narrow research, the concept of "export" has been widened. Influencing other countries is not just about active and conscious activities aimed at exporting everything related to cycling in the Netherlands. This study also deals with the Netherlands' role model function, which can also play out unnoticed and spontaneously (e.g. when people who come to the Netherlands as tourists are inspired by the way mobility is organised in our cities or via a YouTube video).

## 1.2 Research questions

This research therefore focuses on the "wider" social value of "the export of Dutch cycling culture". The following questions are answered:

1. To what extent does the Netherlands, with its role model function and export of cycling knowledge, contribute to cycling worldwide?

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<sup>4</sup> Decisio (2021) Exportwaarde Nederlandse fietsensector, deelrapportage enge economische waarde. Commissioned by Tour de Force.

2. What is the social value of the role model function of the Netherlands as a cycling nation and of exporting cycling knowledge?
3. What is the value of the Netherlands as a cycling nation to its international image and international relations?

#### **Export value in a wider social sense**

We define the export value of cycling more widely: the social value of the role model function of the Netherlands as a cycling nation and of exporting cycling knowledge and the value of the Netherlands as a cycling nation to its image and international relations. After all, the most important part of the export value of bicycles in the Netherlands is probably not the euros earned and the jobs created. It is its social impact that is more important, including health, air quality, emissions of CO2 and other greenhouse gases and other social impacts. In other words, it is about sustainable mobility, the spatial planning of cities, the vitality of the population, cycling as a sport and quality of life as a whole. In addition, it is about the value of cycling (in a wider sense) to the international image of the Netherlands and the diplomacy/international relations of the Netherlands.

### 1.3 Our approach

To determine the extent to which the Netherlands contributes to bicycle use worldwide and the wider social value of bicycle exports, we used three research methods:

1. Desk research and data analysis
2. Interviews with 19 international experts who have an insight into the development of cycling policy and other countries and cities outside the Netherlands
3. A survey of the international community of cycling professionals

#### **Survey approach**

The international cycling community was surveyed using an online questionnaire. The aim of the survey was to ascertain the importance of the different ways of exerting influence and to collect concrete examples. The questionnaire was distributed through various channels to the international urban and active mobility community.

The questionnaire was completed by 80 respondents. Almost half of the respondents live in Europe, a quarter in North America and about a tenth in both Oceania and South America. The response from Asia and Africa was smaller at 6 and 1 percent of the total respectively. The largest group work in a public organisation: about 35 percent of the respondents, followed by NGOs, business, advocacy and students. The respondents generally play an active part in the cycling world and therefore have the greatest insight into developments in

it. At the same time, respondents may consider cycling to be more important than the average person would. The results from the survey are therefore indicative.

Based on desk research and the information obtained from the questionnaires and interviews, a rough estimate has been made of the Dutch contribution to increasing bicycle use elsewhere in the world. Almost all of the information used to determine the diplomatic value of disseminating Dutch cycling culture came from the interviews.

A detailed description of the research methods used is included in Appendix I.

## 1.4 Reader's guide

The structure of this report is as follows.

In Section 2, we describe how Dutch cycling culture is being disseminated and how effective this is. In Sections 3 to 5, we describe informal influence, formal knowledge transfer and exerting practical influence through projects with Dutch involvement. In Section 6, we go on to discuss the value of the Dutch cycling culture to the country's international image and international relations. Finally, in Section 7, we make an estimate of the social benefits associated with promoting Dutch cycling culture.

## 2. Disseminating Dutch cycling culture

The Netherlands is regarded as a leading country in terms of urban mobility. The Dutch example, especially during the corona pandemic, is being copied in cities and regions around the world. The knowledge and experience gained in the Netherlands trickle down to the rest of the world in numerous ways. In order to provide an insight into the way Dutch cycling culture is disseminated, this study distinguishes between three different ways in which this occurs (these contain elements of the classification *Experience, Think, Act, Learn* as used by the DCE):

1. Through informal influence. This includes, for example, YouTube videos, inbound tourists who actually only wanted to see the canals and the international (social) media attention focused on the Netherlands as a cycling nation. This influence can be unintentional and sometimes not visible (*Experience*).
2. Through formal knowledge transfer. This includes study tours and excursions, where participants really come to understand the differences between the Netherlands and their home situation. They learn that it has not always been like this in the Netherlands either, that cycling policy goes hand in hand with good urban planning, stricter parking policies and measures to restrict car use and that this has always met with a lot of resistance in the Netherlands as well (*Experience*). Formal influence also involves study programmes in the Netherlands which are very popular among foreign students (*Learn*).
3. Through concrete Dutch project contributions or the involvement of Dutch companies, as happens to a large extent in ThinkBike workshops (*Think*). Although an increasing number of companies are actively and successfully promoting Dutch cycling policy internationally, this contribution is still limited (this was investigated in the separate part of the study dealing with the economic export value of cycling<sup>5</sup>. See also the box on this in the abstract).

This Section first describes these three ways, indicating their relative importance, and then goes on to look at the connection between these ways of exerting influence. Below, we zoom in on the individual ways of exerting influence, describe concrete examples and explain why it is important for bicycle use elsewhere in the world.

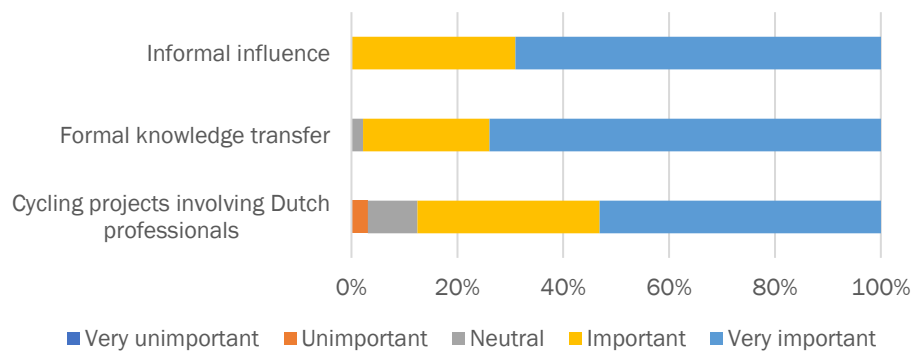
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<sup>5</sup> Decisio (31 March 2021) Exportwaarde Nederlandse fietsensector - Deelrapport 'enge' economische waarde.

## 2.1 Three ways of exerting influence, all three important

The 80-plus international participants in the survey were asked how important they thought the various ways in which Dutch cycling culture is disseminated were.

*Figure 2.1 The relative importance of the three ways of influencing the development of cycling in other countries and cities*



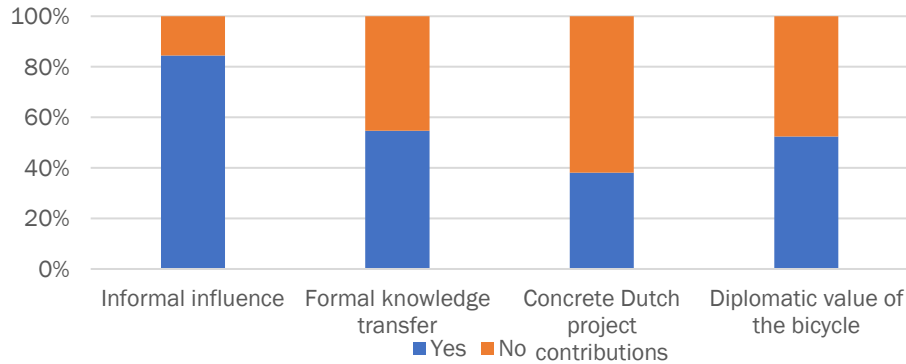
Source: survey

The results of the survey are very unambiguous. Most respondents considered all three ways of exerting influence to be important to very important, with the vast majority rating them "very important".

The involvement of Dutch professionals in cycling projects abroad was rated somewhat lower, but here, too, almost 90 percent said it was important or very important.

This may also be due to the fact that the majority of respondents were unable to name any concrete examples of projects in which Dutch professionals were involved. Significantly, almost 85 percent of the respondents could spontaneously name a concrete example of informal influence exerted by Dutch cycling culture. And about 55 percent could name an example where there was formal knowledge transfer from the Netherlands.

Figure 2.2 Could you think of a concrete example of:



Source: survey

## 2.2 The three ways of exerting influence reinforce each other

The influence exerted by the Netherlands as a world leader in cycling is undeniable. This is evident from the survey and also from the interviews we conducted. International professionals, officials and politicians wholeheartedly endorse the role model function of the Netherlands and the influence it has. This runs along several tracks. There is the somewhat random informal influence resulting from videos and blogs, the formal knowledge transfer in the form of excursions/study tours, webinars and workshops and the concrete contributions of Dutch experts in projects worldwide.

In practice, these tracks are often interrelated and mutually reinforcing. They often follow a sequence. Such as in the Philippines, where cycling advocates were informally inspired by the Dutch role model and knocked on the door of the Dutch embassy to be allowed to show the Dutch cycling documentaries '*Together we cycle*' and '*Why we cycle*'. As a follow-up, the DCE organised a ThinkBike workshop in Iloilo in cooperation with the Dutch embassy. The increased visibility of the Netherlands and its cycling knowledge within the Philippine cycling world led to two concrete pilot bicycle parking projects: the Ayala Triangle Gardens in Makati City and High Street South Park in Taguig City. Such examples are occurring more frequently (see, for example, Austin (Texas, USA) involving ThinkBike workshops, as described in Section 5). Sometimes the sequence is not followed or is less evident. Many of the concrete examples mentioned by respondents and interviewees contain elements of multiple influencing methods and are therefore difficult to "pigeonhole".



Clearly, informal influence has a very great impact due to the continuous flow of videos and blogs on social media and the books that are published on a regular basis, as well as the constant stream of people who happen to come to the Netherlands and get inspired by the way mobility works in the country. All this contributes greatly to disseminating Dutch cycling culture throughout the world. Both professionals and citizens reap the benefits. It is important for professionals because they are the ones who often implement cycling solutions. But the importance of influencing ordinary members of the public (whether or not members of cycling associations) should not be underestimated because, as many experts point out, lasting change comes from below. In addition, as the Netherlands is regarded worldwide as a leader in policy on bicycles and their use, it also sets the standard in many places and demonstrates the feasibility of cycling cities: it is a living example to the rest of the world of how well mobility can function in a city. This informal way of exerting influence is therefore the foundation and also creates a need for more formal learning paths and ultimately, in some cases, concrete requests to Dutch companies for assistance.

The informal approach is followed by more structured formal knowledge transfer. Although cycling is not rocket science from a civil engineering point of view, it is obviously important that best practices and "tips and tricks" are transferred through courses, workshops and webinars. But, above all, overcoming political barriers in particular is a must. Study tours consisting of delegations of politicians and officials are very helpful in breaking down these barriers. Experiencing Dutch cycling culture at first hand gives many study tour participants a special experience (a number of respondents call this "mind shift"). Recognising and understanding the opportunities convinces them of the possibilities that exist in their own country/city and helps them take action, and develop and realise a vision. These delegations also find the organisational and policy aspects of cycling relevant.

Finally, the Netherlands contributes in a concrete way to advising on, designing and implementing cycling projects worldwide. Although each cycling project involving Dutch expertise has a major impact, the majority of cycling projects worldwide are of course carried out without Dutch involvement. Many of our interviewees believe that greater Dutch involvement would result in higher quality. This would include civil engineering projects such as dimensioning cycle paths and designing intersections but also, more importantly, wider cycling policy (parking, safety, chain mobility, influencing demand, etc.), network thinking, long-term strategies, communication, garnering support and securing financial resources.

In the sections below, we elaborate on the three methods of exerting influence and the examples mentioned in the study.

## 3. Informal influence

The informal influence arising from the role model function of the Netherlands as a cycling nation is often quite random. One example would be a tourist who gets inspired in the Netherlands and takes ideas back to change things in their own country/city/street, or an architect or politician who looks at social media (Twitter, LinkedIn, YouTube, etc.) for instances of cycle paths, bicycle parking or intersections. In this study, such examples have been grouped under the heading of "informal influence".

As mentioned above, 85 percent of the respondents to the survey know of a concrete example of informal influence exerted by Dutch cycling culture:

Table 3.1 Some examples of the informal approach as quoted

<p><b>The Netherlands as a role model</b></p>	<p>In general, the Netherlands sets the standard for cycling and shows other communities how it can be done. For example, Zach Vanderkooy (who regularly organises study tours in the Netherlands on behalf of PeopleForBikes, a US non-profit organisation) said that for all participants, no matter how often they participate, there is always something to be learned about urban mobility in the Netherlands.</p> <p>The Dutch example also helps in political discussions, e.g. in the context of imposing a legal requirement to wear a helmet to improve bicycle safety. Jill Warren (ECF) said that a common tactic used by cycling advocates is: "Do you usually see cyclists wearing helmets in the Netherlands? No, you don't, because cycling is so safe there that no one thinks it necessary to wear a helmet. That kind of safe cycling infrastructure is what we should be aiming for, not a requirement to wear a helmet!"</p> <p>Campaigns such as <i>Stop the Child Murder</i> have been frequently cited as inspirational examples from the 1960s and 1970s to reduce the car's domination of cities. According to Matthew Baldwin (European Commission), this campaign remains important as a way of showing how a society can change.</p>
<p><b>Source of inspiration for many</b></p>	<p>Many tourists, students, transport planners, policymakers and politicians get inspired during a study trip or tour in the Netherlands and bring new ideas home with them. For example, Elliot Fishman (Institute for Sensible Transport) came to the Netherlands to learn from evidence-based Dutch</p>

	<p>planning practice, found inspiration and brought Australian delegations to the Netherlands in 2018 and 2019 (and he hopes to do so again as soon as possible after the pandemic).</p> <p>Zach Vanderkooy (PeopleForBikes) even had a transformative experience during his student days when he finally realised how cycling could improve the use of space and revitalise a city!</p> <p>Francesco Casciano came to the Netherlands on holiday with his family, he walked around open-mouthed when he realised what a difference it made that all the cyclists he saw were not riding around in cars. He is now mayor of Collegno, a town with a population of 50,000 in the Turin region, and champions cycling in Italy on behalf of all the country's mayors.</p> <p>Worldwide, there are also well-known examples of people who stayed in the Netherlands for some time and have cycling high on their agenda. Claudia López Hernández (mayor of Bogotá) studied in the Netherlands and, during the pandemic, expanded the city's cycle network by adding 120 kilometres of pop-up cycle paths. Anne Hidalgo (Mayor of Paris) was also inspired by the role of the bicycle in Dutch mobility during visits to Dutch cities. She is now trying to roll out the "15-minute city" across Paris.</p> <p>Finally, a good example of randomness comes from the World Resource Institute (WRI). Previously, the institute had devoted little attention or resources to mobility. The fact that the daughter of one of the board members studied journalism in the Netherlands helped to achieve a turnaround. Her father was very impressed when he visited her daughter, especially by the number of cyclists he saw. He has been back many times and has now ensured that urban mobility is one of the WRI's top priorities.</p>
<p><b>Films, videos, books and blogs</b></p>	<p>Dutch documentaries such as "<i>Why we cycle</i>" and "<i>Together we cycle</i>" are a major source of inspiration. Stein van Oosteren (who is active in the Parisian cycling world and works for UNESCO on behalf of the Netherlands) said: "These films really help to open the minds of both local officials and mobility engineers. Because they see themselves in the films, but 40 years ago!" It has therefore strengthened the will of communities in places like Manila and Gdansk to develop and achieve a strategy with a prominent place for the bicycle.</p>

	<p>Stein van Oosteren said that books such as "<i>Pourquoi pas le vélo?</i>" and "Building the Cycling City: The Dutch Blueprint for Urban Vitality" contribute to the "popularisation" of knowledge, inspire individuals and administrators, and stimulate the public debate necessary to bring about change.</p> <p>With the help of Dutch companies, WRI has issued <a href="#">guidelines</a> on safe cycling routes and <a href="#">bikenomics</a> as a communication tool. They are widely used, especially in Asia, Africa and Latin America.</p>
<b>Knowledge source for professionals worldwide</b>	<p>In the absence of local professional guidelines, reading blogs or watching videos by the "Dutch Cycling Embassy", "Not Just Bikes", "BicycleDutch", "Mobycon" and "Fietsprofessor" helps policymakers elsewhere. For international professionals like Stepan Glushkov (traffic engineer in Russia), this is important in helping them make fewer mistakes and gain confidence in their own actions.</p>
<b>CROW</b>	<p>CROW manuals are considered the gold standard for cycling infrastructure and are regularly consulted by planners and traffic engineers in other countries and cities. Guidelines for other countries are sometimes wholly or partly derived from CROW manuals: Lesson learned ALTA and ASTO. The Dutch Embassy in the Philippines has also donated the manuals to local stakeholders<sup>6</sup>.</p>
<b>Knowledge source for cycling organisations worldwide</b>	<p>Many local cycling ambassadors and officials glean ideas and knowledge from the blogs and videos of Dutch cycling expertise. Based on what they have seen, they make suggestions to local administrators. Examples include Napoli Pedala, Plzen on bike and Fontenay-des-Roses au Vélo. Zweirat Stuttgart described the importance of this expertise as follows: "It helps Zweirat Stuttgart to show that attractive and safe cycling infrastructure is technically possible, thereby overcoming the usual German excuses about infeasibility. Positive and successful examples from the Netherlands are badly needed if we are to change the German urban planning culture."</p>
<b>Application of Dutch best practices</b>	<p>This leads to the application of Dutch best practices in numerous local communities. We do not know of any direct Dutch involvement in the following non-exhaustive list of examples: traffic circulation plans, coloured and segregated cycle lanes (Paris), Dutch intersections/roundabouts (Melbourne), low-traffic residential areas</p>

<sup>6</sup> Interested parties can order a printed copy of the design guidelines from CROW for EUR 142. This is a major threshold, so it represents a golden opportunity to disseminate knowledge and set an example.

	(Poznan), bicycle sharing systems (Flanders, France), bicycle parking facilities (Mexico City).
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Source: interviews, survey

The survey shows that the informal influence exerted by Dutch cycling culture is rated by respondents as an important (31 percent) to very important (69 percent) factor in the development of cycling in other countries and cities.

Asked why they find this so important, our interviewees give as their main reason that they regard the Netherlands as a leading country in terms of urban mobility and the role of the bicycle. The Netherlands is considered the gold standard in this field by "ordinary" cycling enthusiasts, policymakers and experts. What has been achieved in the Netherlands is regarded by many as an ambition for their own country or city and a role model in terms of road safety, attractive cycle networks and spatial planning. The Dutch example shows other countries the possibilities of cycling, helps to develop a vision of the future and creates clear expectations of what is feasible.

**"Dutch cities are leading the way in developing the 15-minute city: the high quality of urban planning found everywhere in Dutch cities is a powerful example of how city life can be<sup>7</sup>"**

Carlos Moreno, professor at Sorbonne University and inventor of the 15-minute city

The whole story of the Netherlands (from the 1970s with the Stop the Child Murder campaign to now) shows that the Netherlands also started out from a situation where the car was dominant, and that a culture change in mobility is therefore possible. Moreover, the Netherlands does not appear to have been so different from their own country. Those advocating cycling point out that, without the Dutch example, it would be much more difficult to put the bicycle on the agenda and bring about a sustainable mobility transition. It also undermines political counter-arguments about feasibility.

**"During my Dutch student days, a project on spatial planning and climate adaptation gave me a transformational experience. Suddenly I saw the possibilities for the US. It really was a head explosion".**

Zach Vanderkooy, Mobycon/PeopleForBikes (US)

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<sup>7</sup> Prof. Carlos Moreno, interviewed by Brett Petzer, Mobycon, Friday 16 April 2021

The Dutch example increases the public's understanding of the importance of cycling and sustainable and active urban mobility. Cycling knowledge is disseminated worldwide through the distribution of videos and photos and through documentaries and books. This inspires cycling enthusiasts around the world to take action and provides them with ammunition in debates about cycling. A random visit to the Netherlands offers people a first insight into the possibilities of cycling. This often helps them form opinions on the bicycle as a fully-fledged alternative to the car, for example. But sometimes such a visit prompts people to play an active part in the cycling world in their own country or promote the bicycle as a sustainable mode of transport. There are many examples of people doing this, such as the mayors of Paris, Bogotá and Colegno.

"Dutch cycling stories are often used as an illustration of what can be done - quite quickly - in a city, and these examples help promote cycling elsewhere in the world"

Matthew Baldwin, European Commission

#### **The reach of the DCE and Bicycle Dutch**

Many local cycling ambassadors, officials and administrators get ideas and knowledge from blogs and videos about Dutch cycling expertise such as "Dutch Cycling Embassy" (DCE), "Bicycle Dutch", "Not Just Bikes", "Mobycon" and "Fietsprofessor". Collectively, the videos and blogs have been viewed tens of millions of times. The rapid growth of two Dutch cycling platforms is outlined below.

#### **DCE**

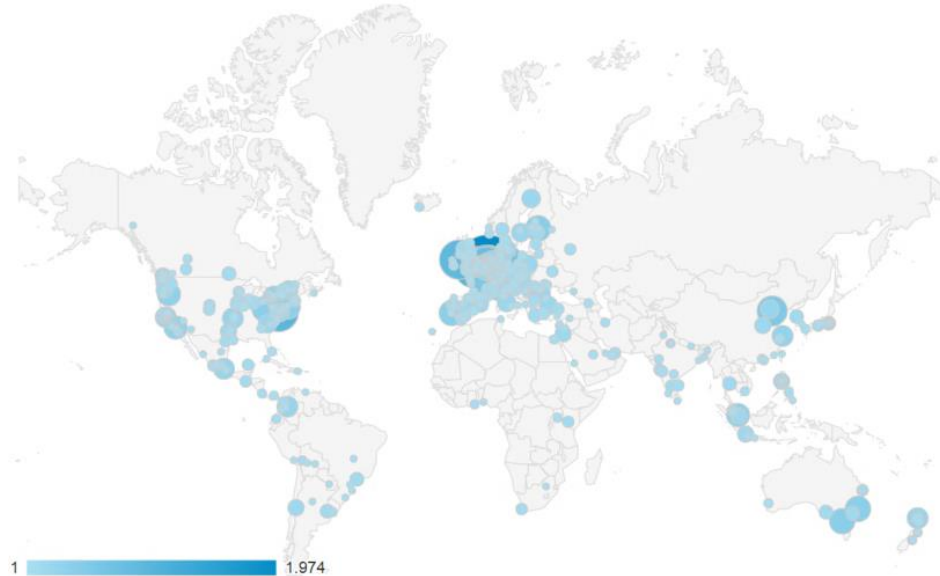
In recent years, the number of questions and requests reaching the Dutch Cycling Embassy from other countries has increased significantly: from 166 in 2015 to 827 in 2021. Of the questions and requests received, about 70 percent come from outside the Netherlands<sup>8</sup>. These activities include participating in conferences and trade missions, organising ThinkBike workshops and showing delegations around the Netherlands. In 2021, this involved 54 webinars, 15 interviews and guest lectures and several podcasts, conferences and trade missions.

The DCE's visibility has improved significantly since 2016. The website and Twitter were the biggest crowd pullers in 2021: over 58,000 unique users for the website and 50,000 followers on Twitter. While the number of followers on Facebook is less at over 42,000, it is rising very quickly at an average rate of 180 percent annually. Add to that the followers on Instagram and LinkedIn and the reach is considerable.

<sup>8</sup> DCE annual report (2020)

Thanks in part to growing visibility and demand from other countries, the public-private network expanded to 87 participants in 2021.

Figure 2.1 Geographical distribution of website visits in 2021



Source: DCE

### **Bicycle Dutch**

Since 2009, Mark Wagenbuur has been active on various social media with Bicycle Dutch. Worldwide, Bicycle Dutch is regarded as an authority on cycling. Mark uses Bicycle Dutch to comment on developments throughout the world of cycling. In particular, the before-and-after videos of upgrades to cycle paths and other cycling infrastructure, which can be found on YouTube, have become the trademark of Bicycle Dutch. Bicycle Dutch has over 55,000 subscribers on YouTube, its content has been viewed 4.2 million times over the years and it attracts 750 unique visitors daily. These visitors are mainly from Europe and North America. Mark also blogs via the Bicycle Dutch website, which attracts around 800 visitors daily. Mark's efforts have led to him becoming an official cycling ambassador and holding presentations and study nationally and internationally.



## 4. Formal knowledge transfer

As a cycling nation, the Netherlands exchanges knowledge and best practices with international stakeholders in a more "formal" way. This is a fairly structured approach to ensuring that bicycle use is promoted elsewhere in the world. Examples include numerous study tours bringing urban or mobility professionals to the Netherlands and *ThinkBike* workshops, as well as tours from various universities in the Netherlands, MOOCS, and other training courses in/from the Netherlands. In this study, such examples have been grouped under the heading of "formal knowledge transfer".

In the survey, 55 percent of the respondents said they knew of a concrete example of formal knowledge transfer:

Table 4.1 Some examples of the formal approach as quoted

<p><b>Study tours</b></p>	<p>Over the years, thousands of people (ranging from transport planners to policymakers and politicians) have joined us on study tours to the Netherlands, arranged by professors, international institutes, the DCE and organisations such as PeopleForBikes. They brought representatives from all over the world, from Baden Württemberg to Australia, to the Netherlands.</p> <p>Richard Smithers, a participant in the study tour organised by the Transport Innovation department of the Institute for Sensible Transport, says the experts they spoke to were very knowledgeable and the site visits provided excellent examples. The specialist knowledge gained is vital to gain a complete understanding and apply all aspects of Dutch cycle planning in day-to-day work (see box for more information).</p>
<p><b>Courses and webinars</b></p>	<p>Urban planners, mobility planners and engineers implement knowledge gained in online courses and webinars given by organisations such as DTV Capacity Building and the DCE. For example, in a new project, a city planner from Lehi (Utah, USA) is implementing the knowledge about continuous pavements and cycle paths and pedestrian refuge islands he recently acquired from <i>Training Road Safety for Non Motorised Transport</i> (DTV).</p>

	<p>The summer courses offered by Urban Cycling Institute (UCI) are also popular, e.g. the UCI <i>Summer School</i> with over 9,500 participants. Felipe Targa (senior urban transport specialist at the World Bank) is one of those who attended the <i>Summer School</i>. Felipe is a regular participant in study tours in the Netherlands, but the <i>Summer School</i> has been a game changer for him. It was from there that he learned the soft side of cycling. Other examples are Matt Galloway who got inspired in Amsterdam and is now finding many ways of improving cycling culture in Canada<sup>9</sup>, Krysia Solheim who is now managing director of Nextbike in the UK and Fiona Campbell (Manager Cycling Strategy in Sydney).</p>
<b>Conferences</b>	<p>There is an extensive exchange of knowledge at conferences dedicated to mobility: Intertraffic, Velo-City, Congresses of Active Mobility, Decarbonising Transport Summit, POLIS and Sustainable Mobility Week.</p>
<b>European cycling project</b>	<p>Dutch cycling expertise plays a key role in European cycling projects such as EU Road Safety Exchange, CycleWalk and Civitas Handshake. Amsterdam is mentoring Bordeaux, Turin, Bruges, Rome and Dublin as part of the Handshake project. These cities are keen to learn from the hardware of the Amsterdam example, so that they can apply Dutch cycling expertise to achieve their modal shift targets. Bart Slabbink of Bruges city council says: "In my city, we face similar challenges to those facing Amsterdam and the case studies they provide are important for the city, both for the planners and for our city government."</p>
<b>Orgware</b>	<p>In London and Dublin, partnerships have been established along the lines of the Dutch Tour de Force and its Danish equivalent. The organisation in Flanders has also emphatically set an example there. The targets set by the TdF have even been taken up literally. Ideas on the organisational side are also being copied in other countries, e.g. the Collectif Vélo Île-de-France (part of the Paris metropolitan region). At the time, the Interface for Cycling Expertise (I-CE; Dutch predecessor to the DCE) was playing an active part in professionalising the Brazilian Cycling Federation.</p> <p>Another fine example was a large delegation of MPs from the Italian Five Star Movement. They were very interested in the long-term infrastructure programmes, knowledge institutions like</p>

<sup>9</sup> See for example <https://beyondtheautomobile.com/2017/07/07/lessons-from-amsterdam-how-to-make-cycling-easy-and-fun/>

	KPVV/CROW and the decision-making phases of these programmes. In addition, they became convinced of the need for sustainable mobility in their cities while cycling through Dutch cities.
<b>Software</b>	There is a lot of interest worldwide in cycling campaigns like "CycleOn" ( <i>Doortrappen</i> in Dutch), or the way in which Veilig Verkeer Nederland (VVN), the Dutch road safety organisation, teaches children to cycle or, indeed, <i>Ciclo vidades</i> (design manual of Mexico; ICE).

Source: interviews, survey

The survey found that the formal transfer of Dutch cycling expertise is regarded by respondents as an important (24 percent) to very important (74 percent) factor in the development of cycling in other countries and cities. When asked to explain this further, our interviewees indicated that it is often not a good idea to directly translate and implement Dutch best practices in the context of other countries. Experience is necessary to get to grips with the details and it is precisely webinars, study tours and workshops that provide the input needed to adapt Dutch best practices to fit the local context and to understand the vision. Thanks to its extensive knowledge of cycling as well as its international experience, the Netherlands is quite good at considering the context in other countries and, in any case, the Dutch have a good eye for finding solutions that work. The importance of knowledge exchange is widely recognised by professionals.

"When the Dutch talk about cycling, the French listen. It's much harder for a French person to be listened to when presenting new ideas about cycling, because they don't enjoy the same 'authority'."

Stein van Oosteren, spokesperson for Collectif Vélo Île-de-France, author of *"Pourquoi pas le vélo?"* and diplomatic attaché at the Dutch Permanent Representation to UNESCO

Another important point that was frequently made is that by sharing the knowledge and best practices, urban planners and designers in other countries do not have to reinvent the wheel, thereby stepping up the development of high-quality cycling infrastructure. In other countries, cycling policy and infrastructure does not have to be developed gradually over 40 years, as was the case in the Netherlands. The German Cycling Federation is therefore aiming to build a "Dutch cycle network" at

"American speed"<sup>10</sup>. Governments around the world should be able to roll this out much faster and more efficiently by taking advantage of best practices and expertise.

## "There is no better place to learn about mobility transition than the Netherlands"

Elliot Fishman, Director, Transport Innovation, Institute for Sensible Transport, Australia

Finally, the formal transfer of knowledge is also very important for giving politicians a real understanding of the need for cycling and convincing them that this can be a success. It is easier to convince politicians and officials of certain solutions when they have seen them in action on a large scale.

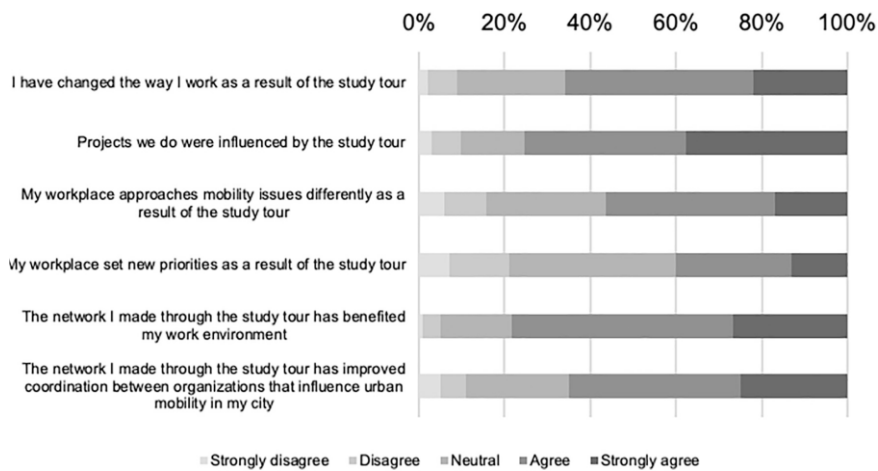
### **International delegations**

Hundreds of times a year, international delegations come to the Netherlands to see and experience how cities function when people do a lot of cycling. It is not just about the cycling infrastructure, but about the overall spatial planning and design: from infrastructure to the location of shops and businesses. Meredith Glaser wrote a PhD dissertation on the importance of these cycling study tours<sup>11</sup>. She found that study tours have a major impact. The focus is not on seeing how a cycle path is constructed, but rather on experiencing at first hand how a city can be: with many people on the street, safe cycling, far fewer cars (either parked or moving) and a better quality of life. The participants are not only enthusiastic about what they learn, they are also much more convinced of the direction their city should be taking and that it is actually possible to achieve this. Moreover, this experience boosts their confidence and authority in the field of cycling. The study also refers to previously sceptical professionals or politicians who radically changed their views as a result of the study tours.

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<sup>10</sup> Burkhard Stork on the future of cycling in Germany. Retrieved from <https://geertkloppenborg.nl/burkhard-stork-on-the-future-of-cycling-in-germany/>

<sup>11</sup> Glaser, M. et al. (2020). *Research in Transportation Business & Management*.



Using a survey and in-depth interviews with participants, Glaser investigated the impact on delegations of participating in a study tour. These results are summarised in the table above. The fact that almost 60 percent ("agree" or "strongly agree") of the respondents stated that the tour led them to approach mobility problems differently is significant. As is the fact that almost 70 percent stated that the study tour had changed the way they work.

The study concludes that at least in Denver, New Orleans and Austin (where many of the respondents came from), the study tours led to significant changes in attitude towards mobility, mobility policy and, for example, the number of people involved in cycling policy. This is due to the fact that different people from these cities participated in the study tours over the years. They exchanged experiences among themselves and with others, which keeps the topic alive and re-energises it. The result is a kind of mini-ecosystem.

The study does not claim that the tours led directly to a modal shift in the cities. It is possible to acquire knowledge in this area without study tours, e.g. through informal channels (presentations by others, articles or videos). What is clear, however, is that the role model function is of great importance and that the Netherlands - together with Copenhagen - sets the best example. The fact that more and more cities and countries are following suit does not diminish the importance of the Netherlands as a role model. The Netherlands continues to develop its expertise in the areas of cycling and urban planning. Professionals can always learn from innovations developed in the Netherlands.

## 5. Dutch professionals involved in cycling projects worldwide

Dutch people also make a direct and concrete contribution to the advice, design and implementation of cycling projects worldwide. This ensures that bicycle use is being facilitated and encouraged elsewhere in the world. For example, Dutch companies are helping cities in other countries with the planning and design of infrastructure. This also includes subsidiaries of Dutch companies or Dutch professionals working for or with local companies.

Thirty-eight percent of the respondents in the survey know this kind of concrete Dutch contribution to local improvements:

*Table 5.1 Some of the concrete examples provided*

<p><b>Bicycle master plans</b></p>	<p>Dutch consultancies contributed to bicycle master plans all over the world. At any rate, the following cities were mentioned in the survey: Austin, Mexico City, Guadalajara, Bucaramanga, Cartagena, Piedmont, Lombardy, Milan, Reykjavik, Ganges, Berlin, Tirana and Vietnam. For example, Decisio recently contributed to Milan's bicycle plan, which consists of 750 kilometres of new bicycle path and was recently approved by the city council. The City of Reykjavik was assisted by Mobycon during the development of its 2021-2025 Cycling Plan. &amp;Morgen supported Sydney in the design of cycling plans. The DCE and its partners have also influenced the development of the Australian National Cycling Strategy in recent years.</p>
<p><b>Cycling projects</b></p>	<p>Dutch consultancies also designed specific cycling projects around the world (Lima, Alberta, Ottawa, Manila, Perth, Canmore, Los Angeles, Cambridge). Witteveen+Bos and JB Mobility, for instance, worked on a 35-kilometre-long express cycle route in Bogotá. Likewise, Royal HaskoningDHV has been selected to write Beijing's cycling strategy and to create a design for a bicycle highway in that city. APPM, Goudappel, Mobycon and Decisio, among others, have set up</p>

	subsidiaries in other countries in recent years, with a specific focus on cycling and sustainable mobility.
<b>Area-specific development</b>	Dutch consultancies have contributed to area-specific development, putting the bicycle and the pedestrian centre stage. For example, Witteveen+Bos assisted the Singaporean government with the planning and design of the cycle network in the Ang Mo Kio district. The aim of the project is to realise a bicycle network in Ang Mo Kio that will enable safe and comfortable cycling for the 175,000 inhabitants of this Singaporean district and thereby serve as an example for Singapore as a whole.
<b>Dutch cycling experts elsewhere in the world</b>	Dutch experts work for international companies or governments all over the world. Jeroen Buis is an example of a cycling professional who has been working abroad, especially in Latin America, for decades. The Dutch are also active in Oceania and North America.
<b>ThinkBike workshops</b>	The DCE's ThinkBike workshops have inspired people to look at cycling mobility differently, which has brought people out of their old habits and into new knowledge. To date, 45 workshops have been organised in more than 40 cities worldwide. One of the success stories is Austin (Texas, USA), which has stepped up the construction of its bicycle network over the past two years. Today, it extends to about 340 kilometres, more than half the number of kilometres envisaged in the original 2014 plan. It was a ThinkBike workshop in 2012 that formed the basis for Austin's 650 km Bicycle Master Plan (for more information, see box below).

Source: interviews, survey

The survey found that the concrete project contributions of Dutch experts are rated by respondents as mostly important (35 percent) to very important (53 percent) for the development of cycling in other countries and cities. Over 10 percent of respondents are more cautious on this point (they are predominantly neutral); in North America and Oceania in particular, this way of exerting influence is considered less important. In Europe and South America, the opposite is true.



The reason cited by the respondents and interviewees as to why the involvement of Dutch experts is important is to reduce the knowledge gap worldwide. Its importance lies mainly in explaining to people convincingly why cycling (and investing in cycling) is relevant. The persuasiveness and credibility of leading experts was also frequently cited, and their importance in ensuring that cycling projects are accepted by both city residents and administrators. The opportunity for a city administrator to learn hands-on from Dutch planning culture as part of a project involving Dutch professionals can lead to a breakthrough in this regard.

Another frequently cited benefit is that the risk of errors is reduced, e.g. in design assignments. This risk can lead to dangerous situations and crumbling support for cycling, which is a waste not only of political capital but also of financial resources. There is no need to invent the wheel yourself.

**"The transfer of specialist cycling knowledge requires long-term cooperation with local partners."**

Jeroen Buis, JB Mobility

However, it was also made clear that local knowledge and understanding are important, so close cooperation with local experts is a must in any case (because of culture, process and language). Moreover, this also builds up local expertise, which usually leads to cost benefits.

#### **ThinkBike workshops**

The DCE has been organising tailor-made ThinkBike workshops worldwide since 2011. The workshops offer help and guidance in implementing Dutch-style solutions. Because "one-size-fits-all" solutions are often not the answer, the workshops are adapted to suit the geographical, social and cultural context.

ThinkBike workshops cover all the areas that help the community become bike-friendly:

- Hardware: physical elements of the built environment - infrastructure
- Software: intellectual and virtual elements - ideas, plans, policies, programmes, laws
- Orgware: organisational and institutional elements - administrations, governments

To date, 45 workshops have been organised in over 40 cities worldwide. Since a Dutch municipality or province often joins the workshop, the emphasis at ThinkBike is on the exchange of knowledge. This public-private partnership workshop was rated as positive by the participants.

The sequel elaborated on the cooperation between the DCE and the two cities, followed by an overview of impacts.

Table 2.4 A selection of ThinkBike workshops and their impact

City, country and year	(Main) focus	Impact
Washington D.C. (US) in 2010 and 2016	Hardware, software and orgware	<ol style="list-style-type: none"> <li>1. Approximately 65 kilometres of cycle paths built;</li> <li>2. Modal share of cycling in commuting doubled: from 3 to 6-8 percent;</li> <li>3. Changing mindset in urban planning.</li> </ol>
Joensuu (FIN) in 2015	Hardware and orgware	<ol style="list-style-type: none"> <li>1. Confirmation of the design choices already made;</li> <li>2. Proportion of bicycle journeys is 18 percent in Joensuu compared with 8 percent in Finland;</li> <li>3. Initial dialogue between politicians and bicycle advocates.</li> </ol>
Aukra and Molde (NOR) in 2017	Hardware	<ol style="list-style-type: none"> <li>1. Increasing support for cycling;</li> <li>2. Publicity on multiple media.</li> </ol>
Montreuil (FRA) in 2019	Hardware	<ol style="list-style-type: none"> <li>1. Implementation of 6 kilometres of (first temporary, now permanent) cycle tracks after the</li> <li>2. Increased bicycle use at important intersections;</li> <li>3. The development of a Dutch-inspired silent neighbourhood.</li> </ol>
Iloilo (PHL) in 2019	Orgware	<ol style="list-style-type: none"> <li>1. Cycle paths included in zoning plans;</li> <li>2. Changing attitude in urban planning: from reactive to proactive;</li> <li>3. Publicity for the cycling project.</li> </ol>
Santo Domingo (DOM) in 2021		<ol style="list-style-type: none"> <li>1. Knowledge exchange on Dutch cycling strategies.</li> </ol>

Source: ThinkBike Brochure (2021)

### Austin, Texas (USA)

After a delegation from Austin visited Amsterdam on a cycling site visit, the DCE organised a ThinkBike workshop in Austin in 2012. While it is true that there were already ambitions for cycling (e.g. Austin Bicycle Plan 2009), the workshop has been a game changer. The workshop was the first meeting with Dutch planners, policymakers and engineers. Finding out that - provided there is a coherent, attractive, safe, direct, convenient network - people prefer the bicycle for short journeys over any other mode of transport was an eye-opener. The vision on mobility shifted: the bicycle was taken fully into account in policy, the bicycle was regarded as a way of keeping public transport supplied with passengers and does not compete with other modes of transport. This meant investing in bicycles to clear bottlenecks and supply public transport with passengers. This was actually put into practice in the 2014 bicycle plan, when bicycles became a tool to serve Austin's aims. A cycle network was created in the city centre, around public transport terminals, local destinations and other areas where there were many short trips. A total of 650 kilometres of cycle path is to be created that is suitable for everyone<sup>12</sup>.

<sup>12</sup> PedBikeInfo (2020). Going Dutch: Translating Dutch Cycling Ideas to an American Context

**Montreuil, France**

In 2019, the DCE organised a three-day ThinkBike workshop in Montreuil - a suburb of Paris with over 100,000 inhabitants - with various public authorities (Montreuil municipal council and neighbouring councils, department and region). It is a town with socio-economic inequalities which is undergoing a number of changes: infrastructure projects (local tram and metro line to Paris) and an influx of mostly young families. In order to accommodate these changes in the right way, Montreuil is looking at a Dutch-style approach. The workshop therefore reflected extensively on the question of what the Dutch style entails. Then Montreuil, and specifically six important intersections, was surveyed by bicycle and the Dutch ideas were applied in the project areas in a co-creative manner. The result? Design drawings, which were partly implemented during the lockdown: implementation of 6 kilometres of (at first temporary, now permanent) cycle paths resulting in increased bicycle use at important intersections<sup>13</sup>.

## 5.1 Conclusion on disseminating Dutch cycling culture

In conclusion, all three ways of exerting influence are important and have an impact, informal influence providing a firm foundation. The study shows that the most directly influenced by Dutch cycling culture are Western countries and cities which are often more advanced in terms of cycling policy and bicycle use, especially in Europe and North America. The context (both cultural and socio-economic) of these countries is also similar to that of the Netherlands. Also, these countries usually have greater financial resources at their disposal and their level of knowledge is closer to that of the Netherlands. In less developed cycling nations, the role model function of the Netherlands is mainly that of a **beckoning** prospect, where they can find out in practice that the end goal really works. To achieve concrete improvements, these countries and cities also look to more comparable cities that are closer to them in terms of development.

In this sense, there is a cascade of influence, whereby the role model function of the Netherlands (and also Copenhagen and, in specific areas, more and more other cities) slowly trickles down to other countries and cities around the world. This cascade is constantly fuelled by innovations and new developments, which continue to provide new role models and inspiration.

Clearly, the role model function is important in many ways and leads to changes. These changes range from very concrete matters such as the design of safe cycle paths to the fact that decision-makers and politicians in the Netherlands become convinced of the direction they should take because they themselves experience

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<sup>13</sup> People for Bikes (2021). Austin Will Be America's Next Great Biking City

what it can lead to. The Dutch role model function also trickles down to other cities and countries. We therefore think it is safe to say that the Dutch role model function has been (and still is) really important for the rise of cycling in other countries in recent years, and will continue to be in the future.

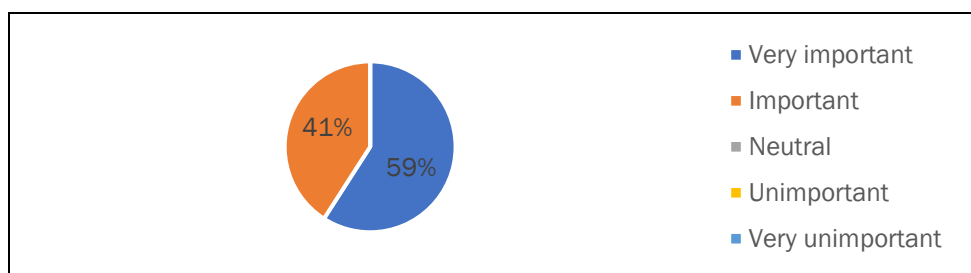
## 6. Diplomatic and image value of the bicycle

In addition to the economic value to the Netherlands and the social benefits of additional cycling worldwide, the cycling culture has another value to the Netherlands. And that is the impact on the international image and diplomacy/international relations of the Netherlands.

This may include the general image that other countries have of the Netherlands and the role that cycling culture plays or may play in international diplomacy.

The international cycling experts we surveyed stated that they consider cycling very important (58 percent) or important (42 percent) for the Dutch image and for diplomatic relations. In the survey, 52 percent of the respondents stated that they knew of a concrete example of Dutch international "bicycle diplomacy".

Figure 6.1 The relative importance of bicycles to Dutch diplomacy and to the image of the Netherlands in other countries



Source: survey

Table 6.1 Some examples in the area of diplomacy as quoted

<p><b>Sharing of cycling knowledge</b></p>	<p>Dutch organisations such as embassies facilitate the exchange of cycling knowledge through webinars and workshops, as in the Philippines, but sometimes also through studies (Covivere in Italy). Embassies also regularly organise bicycle tours for foreign officials. This serves both commercial and diplomatic purposes. In general, these institutions use cycling as an instrument to strengthen international relations. For example, according to Nicole Hablé (Dutch Embassy in Italy), diplomatic relations with Italy were restored during the discussions on the European Recovery Fund.</p>
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<p><b>Telling the story</b></p>	<p>Dutch officials such as Dirk Janssen (Dutch Consulate General in San Francisco) often share the Dutch story in the media and social media. By doing so, they promote the bicycle as a sustainable means of transport, while also pointing to the bicycle transition since the 1970s and the resistance that arose. This contributes to bicycle use, but also benefits the image of the Netherlands with regard to sustainable transport/climate change, etc.</p>
<p><b>Distribution of bicycles and parking facilities</b></p>	<p>Representatives of the Netherlands give out bicycles to prominent people in other countries: Prime Minister Rutte to his counterpart in India: Prime Minister Modi. There are also cases where Dutch institutions donated a bicycle parking facility to institutions around the world: For example, the Dutch ambassador (Adrian Palm) in Ireland donated an orange bicycle stand to the city hall in Dublin.</p>
<p><b>Public appearances</b></p>	<p>As well as Prime Minister Rutte, other Dutch politicians also frequently appear on bicycles, plus the Dutch royal family, ambassadors around the world and embassy staff. By doing so, they gain recognition. The Netherlands also likes use the bicycle to promote itself during overseas trade missions. The Dutch Olympic team often gets around on bicycles during the Games. And finally, the orange bicycles will also be eye-catching feature of the climate summit in Egypt in 2022.</p> <p>The group bike rides organised by embassies through cities on King's Day, the Dutch national holiday to celebrate the monarch's birthday, also have a major symbolic value for the image of the Netherlands worldwide. Thousands of cyclists, many dressed in orange, take part in these bike rides, rounded off with a party at the end. This draws attention to cycling in a playful way and shows the Netherlands in a positive light.</p>

Source: interviews, survey

The survey found that the respondents considered cycling to be an important (58 percent) or very important (42 percent) instrument for Dutch diplomacy and image (see appendix for survey results).

When asked why they think this is important, respondents gave a variety of examples and reasons. Whether intentional or not, the fact that the Dutch Prime Minister regularly cycles to work has a positive effect on the image of the Netherlands - it communicates sustainability, pragmatism, sobriety, being close to

the people and no needlessly expensive cars. When members of the Dutch royal family and other dignitaries are regularly seen on bicycles, this also generates positive publicity for the Netherlands. This does not necessarily lead to more bicycle use or commercial opportunities, but it does contribute to the sustainable image of the Netherlands. According to a number of respondents, other economic sectors benefit indirectly from this sustainable image.

**"A study of Post Corona cycling opportunities plus follow-up actions strengthened Dutch-Italian ties and improved the Dutch image when relations between the two countries were strained."**

Nicole Hablé, Dutch Embassy in Italy

The interviews showed that the Netherlands' activities in the field of cycling, whether informal, formal or more concrete, almost always create diplomatic value and sometimes social value as soon as they actually result in increased bicycle use.

Another important message from many interviews was that the Netherlands could do much more with bicycles in terms of international relations and improving its own image. In particular, the representatives of the World Bank, the European Commission and the WRI see great opportunities for the Netherlands in this regard. They point out that many countries and many world cities are struggling with major problems and that cycling, as an integral part of an effective urban mobility policy, is regarded as one of the main solutions. These countries and cities would like some help, preferably from what they regard as the number 1 cycling nation, the Netherlands. People do not have the impression that the Netherlands sees a major role for itself there. For example, whereas the Netherlands offers help in the areas of water and the environment, it does not really follow suit in terms of cycling.

**"Dutch cycling culture contributes tremendously to the country's image and international relations, but there's much more to be gained from this!"**

Felipe Targa, World Bank



## 7. Social impact

The fact that the dissemination of Dutch cycling culture has contributed to the development of bicycle use in other countries has become abundantly clear in the previous sections. In this section, we first examine the extent of the development of bicycle use in the past and in the present. These figures then form the inputs for a calculation of the social impact of increased bicycle use. More cycling means, among other things, cleaner air, healthier people and less congestion. We describe these impacts and express them as euros using indicators. Finally, we estimate the contribution of the Netherlands to the overall impact.

### 7.1 Development of bicycle use worldwide

To begin with, we note that there is little usable data available on mobility behaviour worldwide. The best source we could find is a database from the Institute for Transportation & Development Policy and the University of California. This database was developed in 2014 for an analysis of the impact of a future scenario in which there is a dramatic shift from car use to cycling worldwide<sup>14</sup>. This database contains figures on the number of kilometres travelled per mode of transport (including bicycles and e-bikes) per continent, sometimes specified per region or even per country, for several years from 2010 to 2050. All the figures relate to urban areas.

For this study, we have made a selection of the countries to be included in the analysis, which are, roughly stated: Europe (excluding the Netherlands and Denmark), North America and OECD countries in the *Pacific*. This means that Central and South America, Africa and Asia were initially omitted<sup>15</sup>. The reason for this is that the influence of the Netherlands was more limited in these areas and that bicycle use has generally declined there, due to an increase in income and the possibility for more people to buy a car or moped<sup>16</sup>. Table 7.1 shows the development of the number of cycle-kilometres per capita for the selected countries.

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<sup>14</sup> ITDP & ITS UC Davis (2014) Cycling Scenario: The Potential for Dramatically Increasing Bicycle and E-bike Use in Cities Around the World, with Estimated Energy, CO<sub>2</sub>, and Cost Impacts

<sup>15</sup> We made our own estimation of this, see Section 7.2.2.

<sup>16</sup> Because of these developments, we see a decline in bicycle use per capita, for example, in Latin America and Asia (with the exception of China). It is also possible that this decline would have been greater without an explicit cycling policy and Dutch input.

Table 7.1 Number of cycle-kilometres per annum per capita

Country/Region	2010	2015 (growth vs. 2010)	2020 (growth vs. 2010)
Scandinavia (excl. Denmark)	584	600 (3%)	636 (6%)
France	148	157 (6%)	162 (3%)
Germany	635	664 (5%)	731 (10%)
United Kingdom	165	172 (5%)	183 (6%)
Italy	433	443 (2%)	477 (8%)
Other countries in Europe (OECD)	262	271 (3%)	294 (9%)
Other countries in Europe (non-OECD)	168	170 (1%)	168 (-1%)
Pacific (OECD)	102	103 (1%)	106 (4%)
US and Canada	34	37 (1%)	37 (9%)

Source: ITDP, edited by Decisio

We note that we are looking at projected trends here. It is now 2022 and we have seen how bicycle use has developed over the past decade. Unfortunately, no statistics are available that are sufficiently useful, but the impression is that growth has certainly not been lower than the figures in the table above.

#### Development of bicycle use until 2010

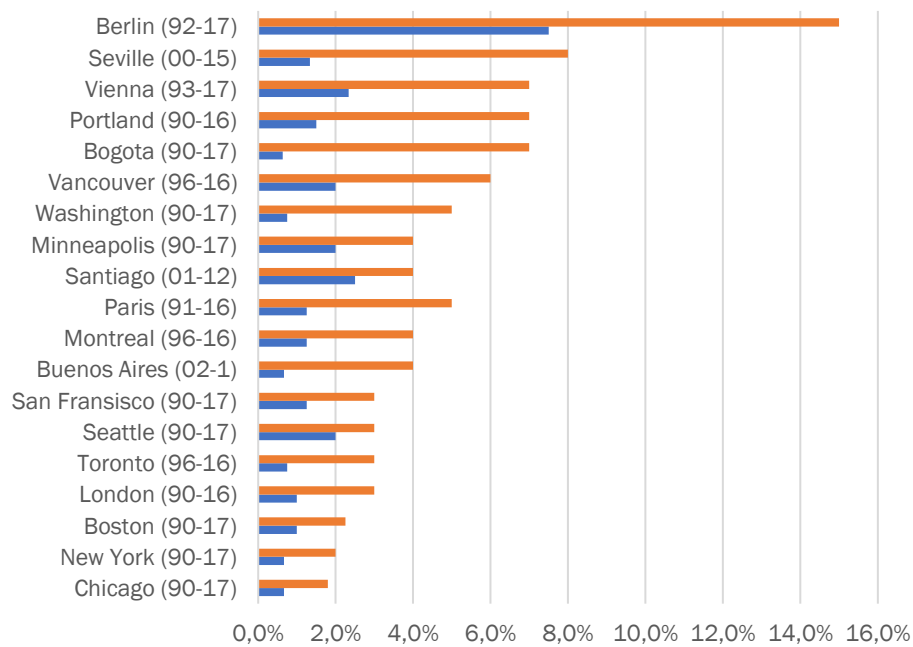
There is no complete source of unambiguous statistics on the growth of bicycle use worldwide in the period up to 2010. However, Schepers et al (2021) conclude that the distance travelled by bicycle has been fairly constant since 1990. This applies to all the countries surveyed, except Germany (where the distance travelled by bicycle increased by 50 percent). Within countries, it is striking that there is often a shift in the distance travelled by bicycle: whereas people cycle more in cities (in some cities as much as 50 percent more cycle-kilometres), there is a decline in rural areas.

Buehler and Pucher (2021) zoom in on the development of the modal share of bicycle journeys between 1990 and 2017 in various cities worldwide. They observe that bicycle use has developed strongly worldwide over the last three decades. For example, it seems that since 2015, thanks to bicycle sharing, the bicycle has been making a comeback in Chinese cities, while in India bicycle use has stabilised at a fifth of total journeys. The relative increase is very large, especially in cities where bicycles were previously hardly used if at all. In South America, the percentage of bicycle journeys is usually quite small at 1 to 2 percent, but in cities like Bogotá, Buenos Aires and Santiago, bicycle use is growing as a result of ambitious cycling infrastructure plans (with Dutch involvement, by the way). In New York, Paris and London, too, the renewed attention on the bicycle has led to a sharp increase in use, with growth of more than 200 percent in about 25 years. Finally, smaller cities such as Portland

and Seville have been successful in their efforts to create safe cycle paths. This has resulted in a fivefold increase in the proportion of journeys made by bicycle.

The chart below shows the development of cycling in several successful cities. Although not an exhaustive list of examples anywhere in the world, it is illustrative of increasing bicycle use in recent decades and the results support the growth figures from the database used in the analysis.

Figure 7.1 Increasing share of cycling in total journeys in a selection of European and North and South American cities in the period from 1990 to 2017



Source: Pucher & Beuhler (2021), *Cycling for Sustainable Cities*

## 7.2 Social impact

Cycling impacts in different ways. We first explain these and then present our estimates of the magnitude of the impact.

### 7.2.1 Explanatory notes on the impact

#### *Emissions of CO2 and other greenhouse gases and local emissions*

Automobility and public transport are usually associated with emissions of harmful substances, such as CO2, particulates, nitrogen and sulphur dioxide. CO2 emissions contribute to climate change while local emissions have an adverse impact on air

quality at the point of emission. Cycling causes practically no emissions of CO<sub>2</sub> and other harmful substances. This means that when bicycle journeys replace other modes of transport, this has a positive impact on the climate and air quality.

## *Health*

Exercise, and therefore cycling, has positive health benefits. This applies to both physical and mental health. The following health effects have been scientifically proven, can be quantified and can be expressed in monetary values using valuation indices. The first impact is that when people cycle more they are generally fitter as a result. This reduces absence due to illness and (partly as a result) increases labour productivity. The very fact that people are fitter also leads to a significant increase in labour productivity. Another impact is that the additional exercise and improved health reduce healthcare costs and increase the average lifespan.

## *Infrastructure and land use*

Infrastructure is required for all types of mobility: roads, parking facilities, stations, etc. The construction and maintenance of infrastructure for cycling is relatively cheap compared to other modes. This means that when bicycle journeys replace journeys on other modes of transport, this has a positive social impact. In addition, less space is taken up by bicycles, both in motion and stationary, than by other modes of transport. This is also a positive social impact.

## *Accessibility*

In places where cars are subject to congestion and delays, cycling makes a positive contribution to accessibility. After all, when bicycle journeys replace car journeys, this improves traffic flow. Of course, it depends very much on the specific situation whether there is actually an impact on car traffic and, if so, how big it is when there is more cycling.

## *Impact on social participation*

Many people around the world do not have the opportunity to use a car or public transport, e.g. because it is too expensive or simply not available. When cycling is or becomes a possibility, it can result in a significant increase in travel opportunities. After all, the range of the bicycle is considerably greater than that of walking. This creates more opportunities to work or go to school, for example. These impacts are difficult to quantify but can be significant.

## *Social impact*

One type of social impact of cycling is the positive impact on social and mental health aspects. Much more than other modes of transport, cycling leads to social interaction, to a lively attitude and to social safety. It also provides relaxation and

stimulates creative thinking. Cycling creates social cohesion and equality. So we are talking mainly about welfare. These impacts are difficult to measure, let alone monetise. But they definitely exist.

## 7.2.2 Extent of the impact

Indicators are available for most of the aforementioned impacts and they can be used to express the value in euros per kilometre. These indicators are available per country.<sup>17</sup> We have used the indicators that apply to the modal shift from car to bicycle and from public transport to bicycle. The analysis is based on the assumption that all kilometres have been travelled by bicycle instead of by car (50 percent) or public transport (50 percent).

In order to get a picture of the total value of the social impacts, we made two different analyses:

- 1) The social impact of all cycle-kilometres in the selected countries in the year 2020
- 2) The social impact of the growth in the number of cycle-kilometres in the selected countries in the period 2011-2020

### *Re 1) Social impact of all cycle-kilometres*

Table 7.2 shows the social impact of all cycle-kilometres in the selected countries in the year 2020. We can see that this represents a total value of over EUR 121 billion per annum. These are the external costs of car traffic delays, health costs, etc. that would have occurred if all these cycle-kilometres had been travelled by car in 2020.

*Table 7.2 Annual social impact of all cycle-kilometres 2020 (rounded, in billions)*

Country/Region	Extent of impact
Europe (OECD)	€97.6
Europe (non-OECD)	€2.2
Pacific (OECD)	€14.9
US and Canada	€6.8
<b>Total</b>	<b>€121.5</b>

We have also made a rough estimate of the total impact worldwide (see appendix for an explanation of the valuation ratios used for this purpose). When we look at the impact of all the cycle-kilometres in the world, it is estimated that in 2020 they represented a social value of about EUR 230 billion.

<sup>17</sup> An overview of the indicators used is given in Appendix III.

## Re 2) Social impact of growth in number of cycle-kilometres

In the second analysis, we looked at the extent of the annual social impact associated with the *growth* in the number of cycle-kilometres in the period 2011-2020. Table 7.3 shows these, including a breakdown by type of effect. The sum total of all the impacts in the selected countries in the period 2010-2020 is about EUR 38 billion. It is heartening to realise that the impact is greater every year thanks to the growth in bicycle use. By 2011, this will amount to over EUR 700 million and, by the year 2020, to over EUR 9 billion.

Table 7.3 Annual social impact of extra cycle-kilometres 2011-2020 by type of impact (rounded, in billions)

Type of impact	Extent of impact
Congestion	€6.4
Healthcare costs	€2.3
Burden of disease and life years	€26.2
Labour productivity	€1.8
Local emissions	€0.5
Climate change	€0.5
Noise	€0.3
Indirect emissions	€0.2
Living environment	€0.2
Road maintenance	-€0.6
Social participation	Yet to be determined
Social impact	Yet to be determined
<b>Total</b>	<b>€37.8</b>

We specifically highlight CO<sub>2</sub> in order to clarify once again the interpretation of the figures. According to this analysis, the social value of all urban cycle-kilometres travelled in 2020, which is more than in 2010 in Europe, North America and OECD Pacific countries, is about EUR 550 million<sup>18</sup>. It is about 5.5 million tonnes of CO<sub>2</sub>. It was assumed that the same kilometres would otherwise have been travelled by car and public transport (50/50 ratio). This figure illustrates the fact that bicycle use worldwide has a massive social impact. After all, this is "only" about one impact (the impacts on accessibility and health, for example, are much larger), for one year (the impacts recur every year) and a very limited number of the kilometres travelled (only the extra kilometres in 2020 compared to 2010 and only a limited selection of urban areas worldwide).

<sup>18</sup> The price per tonne of CO<sub>2</sub> is EUR 100 (price level 2016). Source: Handbook on the External Costs of Transport - Version 2019

## 7.3 Netherlands' contribution

In the previous section, we estimated the social value of all cycle-kilometres in 2020 and all extra bicycle kilometres in the period 2011-2020 in the selected countries/regions. In both analyses, the question is which part of this can be "attributed" to the Netherlands. Based on the findings from the interviews and the survey, it is evident that at least part of it is down to the Netherlands. It is impossible to determine exactly how large this part is, but we make a cautious attempt below.

*Table 7.4 Annual social benefit of cycling worldwide (Europe excl. Netherlands and Denmark, North America and OECD countries in the Pacific ) attributable to the Netherlands\*.*

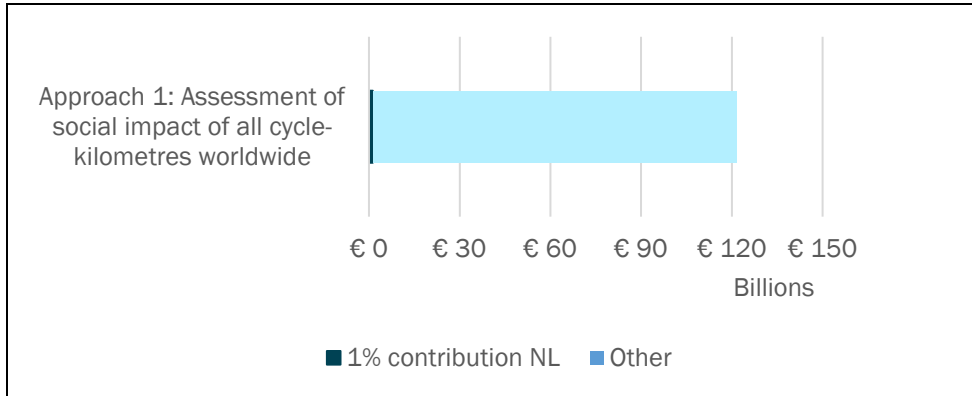
Netherlands' contribution	Approach 1: All cycle-kilometres (2020)	Approach 2: Extra cycle-kilometres (2011-2020)
1 percent	€1.2 billion	€0.4 billion
10 percent		€3.8 billion

\* Note: only the impacts that can be monetised are considered here. Impacts such as spatial quality, social participation and social impact are not included in these cycling benefits.

### *Approach 1: Dutch contribution to all cycle-kilometres worldwide*

When it comes to all the cycle-kilometres travelled in a year, we believe that a contribution of 1% from the Netherlands is an absolute minimum. This would mean that if you see 100 people cycling in any urban area in Europe or North America, there is one person riding there thanks to the Netherlands. This may be because this person has been inspired by the Dutch cycling role model or, more generally, because the development of cycling infrastructure is partly due to the example set by the Netherlands. Based on this 1% contribution, we are talking about the Dutch contribution having a social value of over EUR 1.2 billion per annum. It is worth noting again that we have only included the cycle-kilometres travelled in urban areas in Europe, North America and OECD Pacific countries, leaving out a large proportion of the world's cycling population. If we assume a 1% Dutch contribution to worldwide bicycle use, the estimated value of social impacts amounts to approximately EUR 2.2 billion per annum.

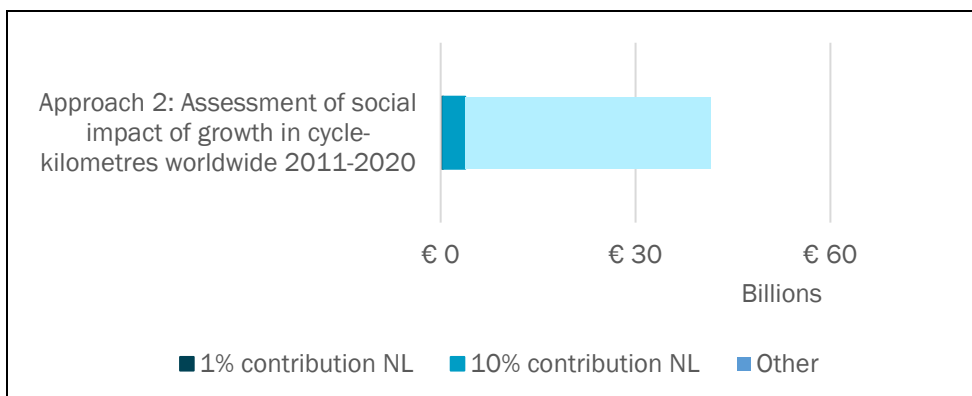
Figure 7.2 Annual social benefits of cycling worldwide attributable to the Netherlands, approach 1



*Approach 2: Dutch contribution to the extra cycle-kilometres travelled worldwide*

If we look at the trends in bicycle use over the past decade and therefore the extra cycle-kilometres, we believe that the Netherlands contributes more in percentage terms than in approach 1. We therefore estimate the Netherlands' contribution to be at least 1 percent of the growth in cycle-kilometres but 10 percent may be more realistic. This would mean that the contribution made by the Netherlands to the growth in bicycle use in the period 2011-2020 represents a social value of EUR 0.4 billion (assuming 1 percent) to EUR 3.8 billion (assuming a 10 percent contribution). NB: These are annual amounts. These impacts will continue to recur as long as people continue to cycle. And, given the growth forecasts for bicycle traffic worldwide, these amounts will only grow.

Figure 7.3 Annual social benefits of cycling worldwide attributable to the Netherlands, approach 2





## Appendix I Research approach

### Desk research and data analysis

A number of previous studies and research projects on the export value of cycling to the Netherlands have been reviewed: reports from the DCE (annual reports and evaluation of ThinkBike workshops) and from various worldwide cycling indices (ITDP database and Evaluation of cycling policies and projects). In addition, a previous study by Decisio into the export value of bicycles and various other (academic) sources on knowledge dissemination and cycling culture were used. Our estimate of the social benefits of the growth in cycling worldwide was based on a variety of sources and indicators.

### Interviews

Nineteen interviews were conducted with key figures involved in assessing the social value of the bicycle in the public, semi-public and private domain to get a qualitative picture of the societal and diplomatic value of the export of Dutch bicycles and cycling culture.

The following persons were interviewed:

- Andy Clarke, Toole Design
- Chris Bruntlett, Dutch Cycling Embassy
- Claudia Adriaola-Steil, World Resource Institute
- Edward Douma, Dutch Cycling Embassy
- Elliot Fishman, Institute for Sensible Transport
- Felipe Targa, World Bank
- Henrik Lasseur, Dutch Embassy in Peru
- Jeroen Buis, JB Mobility
- Kevin Punzalan, Dutch Embassy in the Philippines
- Lucas Harms, Dutch Cycling Embassy
- Mark Wagenbuur, BicycleDutch
- Matthew Baldwin, European Commission
- Meredith Glaser, University of Amsterdam
- Mirjam Borsboom, Dutch Ministry of Infrastructure and Water Management
- Natalia Pineros, Dutch Embassy in Colombia
- Nicole Hablé, Dutch Embassy in Italy
- Pascal van den Noort, Velo Mondial
- Stein van Oosteren, spokesperson for Collectif Vélo Île-de-France, author of *"Pourquoi pas le vélo?"* and diplomatic attaché at the Dutch Permanent Representation to UNESCO

- Zach Vanderkooij, PeopleForBikes

The following topics were discussed during these interviews (see complete interview guide below in *introduction researching the societal export value of Dutch cycling culture*):

What is the social value of the role model function of the Netherlands as a cycling nation and of exporting cycling knowledge?

- Can you think of a concrete example (or examples) of the three ways (informal influence, formal knowledge transfer and a Dutch contribution to foreign projects) in which cycling culture results in inspiration or concrete imitation? These should preferably be very concrete examples of the change it has brought about.
- How important do you think these three ways of exporting Dutch cycling culture are to the development of cycling in other countries and cities? Would the situation be different without the Dutch role model?

What is the value of the Netherlands as a cycling nation to its image and international relations?

- Do you know of any concrete example(s) where the Netherlands uses (or has used) bicycles in international diplomacy or as a way to improve the image of the Netherlands?
- How important do you think cycling is for Dutch diplomacy and for the image of the Netherlands in other countries? Would this be different if mobility in the Netherlands was organised as in an average European country?

## Survey

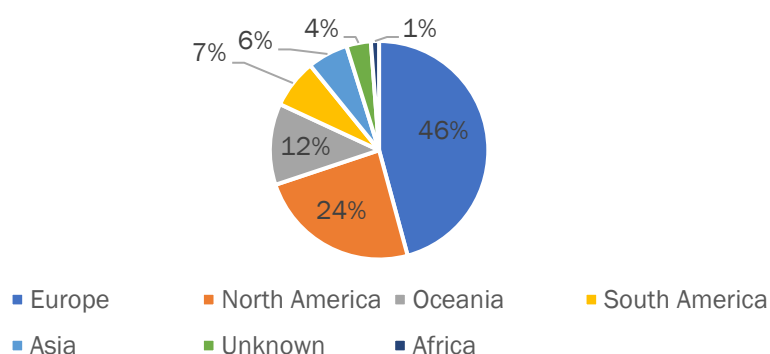
The international community was surveyed by means of an online questionnaire. The aim of the survey was to ascertain the importance of the various ways of exerting influence and to collect case studies showing how and to what extent the Netherlands has contributed to bicycle use elsewhere in the world. The complete questionnaire is included in Appendix 2.

The questionnaire was distributed through various channels to the international urban and active mobility community. The DCE and Decisio distributed the survey through their official social media channels. The European Cycling Federation (ECF) used its newsletter to distribute the survey to its members. A number of interviewees also brought the survey to the attention of stakeholders through direct mailing.

## Response and representativeness

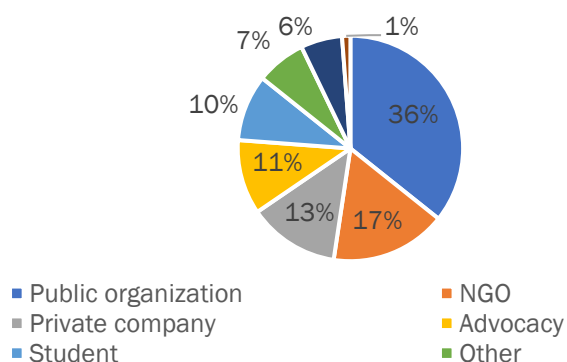
The questionnaire was completed by 83 respondents. Almost half of the respondents live in Europe, a quarter in North America and about a tenth in both Oceania and South America. For the other continents and the "unknown" section, the response rate is just over 10 percent. Most respondents (over 80 percent) are therefore from the "western" world.

Figure 0.1 Number of respondents, regional distribution



It is difficult to estimate the size of the target group for this study. The aim is always to reach as many respondents as possible, including variation in backgrounds. The largest group work in a public organisation: about 35 percent of the respondents, followed by NGOs, business, advocacy and students. Because of the inherent bias, there is a risk of subjectivity. At the same time, the respondents are the most active in the world of cycling and therefore have the greatest insight into trends. The conclusion is therefore that the results from the survey are indicative.

Figure 0.2 Number of respondents, distribution by occupational groups



## Introduction researching the societal export value of Dutch cycling culture

Both the Netherlands as a whole and many Dutch cities are known for the importance of cycling and for their cycle-friendly urban planning and infrastructure. The Dutch government and the Dutch Cycling Embassy (DCE) want to know more about the societal and diplomatic value the Netherlands and Dutch cities have (and have had) as an example for other countries/cities. The DCE has commissioned Decisio to study this. Within this context, we are consulting you about this subject.

### *Cycling culture and examples used in concrete follow-up in other cities/countries*

We are looking for cases where the Dutch example helped in creating follow-up in other places. This follow-up may consist of a change in cycling infrastructure, urban/spatial planning, or human behaviour.

We make a distinction between the following three ways Dutch examples can lead to inspiration and follow-up in other cities and countries:

1. **Informal influence.** For example, if tourists experience the Netherlands, get inspired and want to change things in their home country; or an architect or politician looks at YouTube videos for examples of bike paths, bike parking, or junctions.
2. **Formal knowledge transfer.** For example, organising study tours with urban or mobility professionals in the Netherlands and so-called 'ThinkBike' workshops; but also mobility and planning universities in the Netherlands, MOOCS, and other training sessions in/from the Netherlands.
3. **Projects in which Dutch professionals are involved.** For example, Dutch companies helping cities in other countries with their planning and design of infrastructure and urban space; but also subsidiaries of Dutch companies, or Dutch professionals working for or with local companies.

We would like to discuss with you these three ways the Dutch cycling culture is being 'exported'.

For each of these categories we would like to discuss the following two questions:

1. Could you think of a concrete example(s) of the three ways Dutch cycling culture leads to follow up or inspiration? Preferably very concrete examples with concrete illustration of the change it has resulted in.

2. How important do you think these three ways of exporting the Dutch cycling culture are for the development of cycling in other countries and cities? Would the situation be different without the Dutch example?

*Cycling culture used in international diplomacy and for the Dutch international image*

Besides the societal benefits of 'exporting' the cycling culture, there is (to the Netherlands) also an image and diplomacy value of exporting the Dutch cycling culture. For example, Dutch embassies organising cycling tours on King's day (our national holiday). For this aspect we would like to discuss the same questions:

1. Do you know concrete example(s) where the Netherlands use (or have used) cycling in international diplomacy or in a way to improve the image of the Netherlands?
2. How important do you think cycling is for the Dutch diplomacy and for the image of the Netherlands in other countries? Would this be different if mobility in the Netherlands would be organised as in an average European country?

Thanks in advance for your input!

Dutch Cycling Embassy – Lucas Harms

Decisio – Kees van Ommeren, Martijn Lelieveld, Pim van der Zwet

## Appendix II Questionnaire on societal and diplomatic value of Dutch cycling

Dear reader (or bike enthusiast!),

Both the Netherlands as a whole and many Dutch cities are known for the importance of cycling and for their cycle-friendly urban planning and infrastructure. The Dutch Ministry of Infrastructure wants to know more about the societal and diplomatic value the Netherlands and Dutch cities have (and have had) as an example for other countries/cities.

The DCE has commissioned Decisio to study this. Within this context, we are consulting you about this subject. We are looking for cases where the Dutch example helped in creating follow-up in other places. This follow-up may consist of a change in cycling infrastructure, urban/spatial planning, or human behaviour.

We make a distinction between the following three ways Dutch examples can lead to inspiration and follow-up:

1. **Informal influence.** For example, if tourists experience the Netherlands, get inspired and want to change things in their home country; or an architect or politician looks at YouTube videos for examples of bike paths, bike parking, or junctions.
2. **Formal knowledge transfer.** For example, organising study tours with urban or mobility professionals in the Netherlands and so-called 'ThinkBike' workshops; but also mobility and planning universities in the Netherlands, MOOCS, and other training sessions in/from the Netherlands.
3. **Projects in which Dutch professionals are involved.** For example, Dutch companies helping cities in other countries with their planning and design of infrastructure and urban space; but also subsidiaries of Dutch companies, or Dutch professionals working for or with local companies.

Below we ask you to name and—if you wish—describe concrete examples of the following three ways the Dutch example is followed in a city or country of which you are aware. If you prefer, you can also provide us with your email address and/or telephone number so we can schedule a short interview to record these examples.

We want to thank you in advance for your participation and input!

Kind regards,  
Decisio

## **Informal influence of Dutch cycling expertise**

**Informal influence.** For example, if tourists experience the Netherlands, get inspired and want to change things in their home country; or an architect or politician looks at YouTube videos for examples of bike paths, bike parking, or junctions.

1. Could you think of a concrete example(s) of informal influence of Dutch cycling expertise, which is followed up in a city or country which you know of?
2. Could you please describe the concrete example(s) of informal influence of Dutch cycling expertise, which is followed up in a city or country which you know of?
3. How important do you think the informal influence of Dutch cycling expertise is for the development of cycling in other countries and cities?
4. Could you please explain the (un)importance of informal influence of Dutch cycling expertise for the development of cycling in other countries and cities?

## **Formal knowledge transfer of Dutch cycling expertise**

**Formal knowledge transfer.** For example, organising study tours with urban or mobility professionals in the Netherlands and so-called 'ThinkBike' workshops; but also mobility and planning universities in the Netherlands, MOOCS, and other training sessions in/from the Netherlands.

5. Could you think of a concrete example(s) of formal knowledge transfer of Dutch cycling expertise, which is followed up in a city or country which you know of?
6. Could you please describe the concrete example(s) of formal knowledge transfer of Dutch cycling expertise, which is followed up in a city or country which you know of?
7. How important do you think the formal knowledge transfer of Dutch cycling expertise is for the development of cycling in other countries and cities?
8. Could you please explain the (un)importance of formal knowledge transfer of Dutch cycling expertise for the development of cycling in other countries and cities?

## **Cycling projects with Dutch professionals**

**Projects in which Dutch professionals are involved.** For example, Dutch companies helping cities in other countries with their planning and design of infrastructure and urban space; but also subsidiaries of Dutch companies or Dutch professionals working for or with local companies.

9. Could you think of a concrete example(s) of cycling projects with Dutch professionals, which is followed up in a city or country which you know of?
10. Could you please describe the concrete example(s) of cycling projects with Dutch professionals, which is followed up in a city or country which you know of?
11. How important do you think the cycling projects with Dutch professionals are for the development of cycling in other countries and cities?
12. Could you please explain the (un)importance of concrete cycling project with Dutch professionals for the development of cycling in other countries and cities?

## **Cycling and international diplomacy and image**

13. Could you think of a concrete example(s) where the Netherlands use (or have used) cycling in international diplomacy or in a way to improve the image of the Netherlands?
14. Could you please describe the concrete example(s) where the Netherlands use (or have used) cycling in international diplomacy or in a way to improve the image of the Netherlands?
15. How important do you think cycling for the Dutch diplomacy and for the image of the Netherlands in other countries?
16. Could you please explain the (un)importance of cycling expertise for Dutch diplomacy and for the image of the Netherlands in other countries?

## **Personal information**

17. Could you please inform us about your type of work organization?

## **Additional information**

We want to thank you again for your participation and input!

If you are willing to provide us with additional information on the listed examples, please write down your email address and/or telephone number. We would be pleased to get in contact with you and discuss the impact of Dutch cycling practices abroad. To conclude, some final questions about yourself:



18. What is your email address or telephone number?
19. Could you please indicate your country of residence?

## Appendix III Social impact indicators

Figure 0.2 Social impact indicators per cycle-kilometre travelled

	Congestion	Direct Healthcare Savings	Life years and Burden of Disease	Labour productivity	Local air pollution	Climate change	Noise	Well-to-Tank	Habitat damage	Road maintenance costs
Nordic	€ 0,116	€ 0,015	€ 0,215	€ 0,007	€ 0,009	€ 0,009	€ 0,006	€ 0,003	€ 0,004	-€ 0,013
France	€ 0,108	€ 0,015	€ 0,215	€ 0,007	€ 0,005	€ 0,009	€ 0,003	€ 0,003	€ 0,007	-€ 0,016
Germany	€ 0,092	€ 0,042	€ 0,459	€ 0,009	€ 0,011	€ 0,009	€ 0,003	€ 0,003	€ 0,004	-€ 0,012
UK	€ 0,097	€ 0,084	€ 0,899	€ 0,077	€ 0,010	€ 0,009	€ 0,003	€ 0,003	€ 0,004	-€ 0,008
Italy	€ 0,088	€ 0,040	€ 0,215	€ 0,007	€ 0,005	€ 0,009	€ 0,003	€ 0,002	€ 0,002	-€ 0,008
Other OECD Europe	€ 0,090	€ 0,026	€ 0,257	€ 0,027	€ 0,008	€ 0,008	€ 0,007	€ 0,003	€ 0,003	-€ 0,009
Non-OECD Europe	€ 0,116	€ 0,015	€ 0,215	€ 0,007	€ 0,009	€ 0,009	€ 0,006	€ 0,003	€ 0,004	-€ 0,013
OECDPac	€ 0,081	€ 0,007	€ 0,076	€ 0,002	€ 0,007	€ 0,010	€ 0,005	€ 0,003	€ 0,003	-€ 0,013
USA_Canada	€ 0,204	€ 0,026	€ 0,379	€ 0,013	€ 0,015	€ 0,017	€ 0,011	€ 0,005	€ 0,008	-€ 0,022
Russia	€ 0,184	€ 0,023	€ 0,343	€ 0,011	€ 0,014	€ 0,015	€ 0,009	€ 0,005	€ 0,007	-€ 0,020
ASEAN	€ 0,116	€ 0,015	€ 0,215	€ 0,007	€ 0,009	€ 0,009	€ 0,006	€ 0,003	€ 0,004	-€ 0,013
Indonesia	€ 0,029	€ 0,004	€ 0,054	€ 0,002	€ 0,002	€ 0,002	€ 0,002	€ 0,001	€ 0,001	-€ 0,003
North Africa	€ 0,029	€ 0,004	€ 0,054	€ 0,002	€ 0,002	€ 0,002	€ 0,002	€ 0,001	€ 0,001	-€ 0,003
Mexico	€ 0,007	€ 0,001	€ 0,013	€ 0,000	€ 0,001	€ 0,001	€ 0,000	€ 0,000	€ 0,000	-€ 0,001
Brazil	€ 0,025	€ 0,003	€ 0,047	€ 0,002	€ 0,002	€ 0,002	€ 0,001	€ 0,001	€ 0,001	-€ 0,003
Other LAC	€ 0,025	€ 0,003	€ 0,047	€ 0,002	€ 0,002	€ 0,002	€ 0,001	€ 0,001	€ 0,001	-€ 0,003
Africa	€ 0,025	€ 0,003	€ 0,047	€ 0,002	€ 0,002	€ 0,002	€ 0,001	€ 0,001	€ 0,001	-€ 0,003
Middle East	€ 0,007	€ 0,001	€ 0,013	€ 0,000	€ 0,001	€ 0,001	€ 0,000	€ 0,000	€ 0,000	-€ 0,001
China	€ 0,029	€ 0,004	€ 0,054	€ 0,002	€ 0,002	€ 0,002	€ 0,002	€ 0,001	€ 0,001	-€ 0,003
India	€ 0,029	€ 0,004	€ 0,054	€ 0,002	€ 0,002	€ 0,002	€ 0,002	€ 0,001	€ 0,001	-€ 0,003