Cyclurban+

Lessons Learned Report

Imprint

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The project Cyclurban+ was part-financed by the European Climate Initiative (EUKI). The European Climate Initiative is a project financing instrument by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU). It's implementation is supported by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH. It is the overarching goal of the EUKI to foster climate cooperation within the European Union (EU) in order to mitigate greenhouse gas emissions.

Content

Introduction

The following lessons learned report is an output of the project Cyclurban+ implemented by the "Baltic Environmental Forum e.V." from Germany, the "Czech Environmental Partnership Foundation" from the Czech Republic, "Cyclokoalicia" and "Ideas to Energy" from Slovakia, and the city of Tartu from Estonia. The project was financed by the European Climate Initiative (EUKI).

After decades of motorized private transport, European cities and municipalities are mostly designed for car driving. At the same time, approximately 26% (1) of the EU´s total CO_2 emissions come from road transportation. Looking at current climate policy goals, such as the 1.5-degree goal of the Paris Agreement and the EU´s aim to reduce greenhouse gases emitted by road transportation by 90% until 2050 (2), it becomes clear that governments need to change something about the current transport system. It is necessary to limit our usage of fossil driven vehicles. Furthermore, we need to develop efficient, fast, and convenient climate friendly transport alternatives and we need to finance, support, and promote them more strongly in order to enable a transformation of the transport system.

However, this transformation to climate friendly transportation is not only important to reduce CO_2 emissions. It also improves the air condition as fewer fine particles and less nitric oxides are being emitted into the atmosphere. Also, live quality in cities rises in correlation to noise pollution reduction. Furthermore, the risk of harming road accidents is lowered. And lastly, it allows to distribute urban space that was previously occupied mainly for parking in favour of citizen's activities, like pedestrian zones, cycle paths, greenery or playing areas for children. A redesign of urban space also provides additional opportunities for urban climate adaptation measures.

One alternative to fossil driven vehicles could be the usage of cargo bicycles. Especially, in case of deliveries and other inner-city logistics but also private uses such as shopping or ferrying children (3).

Cargo bikes are two- or three-wheeled and often electric bicycles, which are made for transporting more than just their rider (4). Implementing a functioning cargo bicycle system for private and industrial transportation in cities and municipalities can reduce car rides. One of the main reasons for using a car instead of an eco-friendly alternative is the usefulness and convenience of cars even though they are usually not cost efficient and for most travels within cities not time efficient.

One main part of the project "Cyclurban+" was to test a cargo bicycle rental in three pilot cases in different European municipalities (Bratislava, Brno, and Tartu). In this lessons-learned report the experiences made in these pilots is described.

Other main subjects in the Cyclurban project were road safety and the improvement of the public funding system for cycling infrastructure in municipalities. Including, a web portal for municipalities that provides tailored information on national and European funding infrastructure. Furthermore, a main part of the "Cyclurban+" project was communication - with decision makers in the different municipalities, with ministries, politicians, and stakeholders. This was to improve cycling policies and the knowledge amongst decision makers, especially, in politics and in municipal traffic departments. To help reaching this aim, many workshops on cycling improvement were organized online and offline focussing on the empowerment of stakeholders. In addition, manuals on traffic calming and cargo bikes were released, and lobby briefs were addressed to decision makers proposing change in certain key areas that are important to the further development of cycling transport.

This lessons-learned report wants to give a short overview over the main activities in the Cyclurban+ project and wants to help accelerating an evolution of the traffic system by describing successful approaches that can also be implemented in other countries or regions.

Slovakia

Ahoj Bratislava!

Bratislava is the capital and the largest city of Slovakia. However, it is not just the political centre of Slovakia, it is further a cultural, historical, and economical hotspot. The city has approximately 425,000 citizens with a variety of cultural and ethnical backgrounds.

Sustainable mobility such as cycling has a low modal split in Bratislava. In general bicycle commuting is not very popular in Slovakia with only a few exceptions. Official data is unavailable due to a lack of counters. However, it is estimated that only 2% of Slovakian citizens use bicycles to commute. One of the reasons is the non-existent or lacking infrastructure that would inclusively and safely lead commuters towards their destination. The lack of infrastructure has been caused by decades of car-centric transport planning. Furthermore, even if municipalities are interested in improving cycling infrastructure, there are very few transport planners who are experienced in the topic. Therefore, one of our main goals in the Cyclurban+ project was to empower municipalities, infrastructure planners and the expert public on this issue.

Cargo bicycle rental

There is clearly an interest in cargo bicycles in Slovakia. We have seen a growing number of cargo bicycles appearing in Slovak cities serving for goods and mail deliveries in the past few years. They are mostly used by larger delivery companies. Also, the first municipalities saw cargo bikes as a great alternative to existing cars that are much more expensive in the long-term. Some municipalities use standard bicycles for service workers and there is a chance these will be converted to cargo bicycles soon.

To test potential usages of cargo bikes in cities, a part of the Cyclurban+ project was a cargo bicycle rental pilot (in Slovakia, however also in Czechia and Estonia). The goal was to provide municipalities, companies, and individuals with an alternative to transfer goods, do street cleaning etc. Hence, they were able to test the cargo bicycles in real live operation over a time of a few days up to a few weeks, evaluate their usefulness in everyday situations and assess whether they want to use it in the future for long-term.

All cargo bikes included electronic assist as a support for easier transportation of heavy cargo or in hilly surroundings. Cyklokoalícia offered four different types of cargo bicycles to be rented in the period of March until August 2021 (and some stayed rented even afterwards).

These four cargo bicycles were rented

Street cleaning bicycle

Cargo transport trailer

Disinfection bicycle

Cargo bicycle with a lockbox

Data analysis on the rental

How did the different cargo bikes perform?

We had multiple municipalities along with some private companies and individuals interested in the cargo bikes. We completed 12 rentals in the four-month period. Seven out of twelve renters rented the street cleaning bicycle. Municipalities were mostly interested in it. We even had to shorten their rental periods. It proved itself to be especially useful in spaces which are difficult to access by car such as hilly sidewalks or narrow spaces. A bike sharing company found the e-trailer to be very useful – they even rented it long-term. The company used it to transport bicycles for servicing or to move them between different bike sharing locations. The other four renters, companies, and individuals leased the bicycle with the lockbox. It was used by couriers for secure transportation of deliveries. They were able to leave the bicycle unsupervised on the streets due to the electronic lock. Individuals used it for transporting their property while moving or for larger shopping trips. The COVID disinfection bicycle did not interest municipalities contrary to our preliminary expectations so unexpectedly it was not rented.

What was the average ride length?

The average ride length was 19.2 kms with mean ride length of 15 kms. Both are well within battery life of all cargo bicycle options.

Why were renters interested in the cargo bicycles?

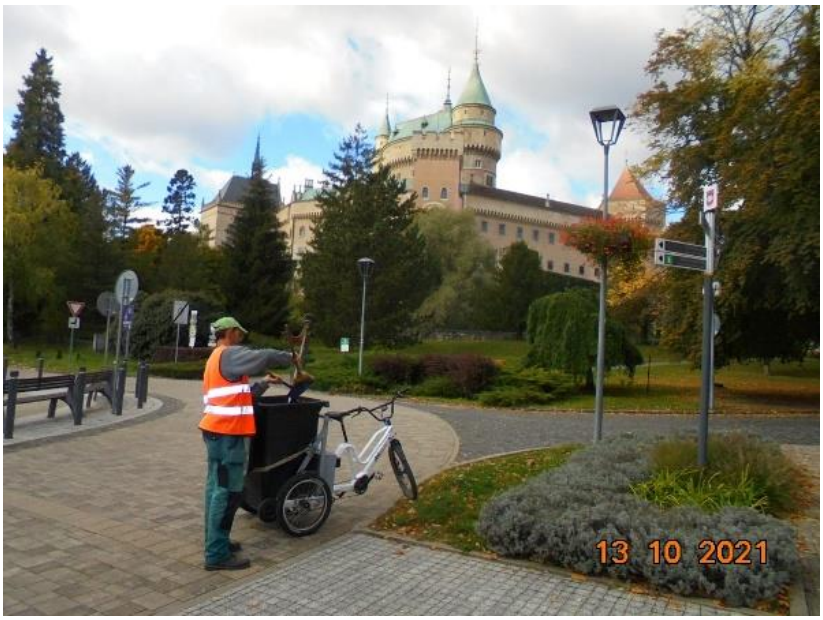
Main points cited were to test cargo bicycles as an alternative to existing cars. For municipalities this was usually their first test of street cleaning bicycles as an alternative or an addition to their existing motorized fleet. They used it to gather fallen leaves, abrasives left after winter maintenance, and general trash left on sidewalks and in streets.

What were the advantages of cargo bicycles?

- Accessibility of spaces where car access is difficult
- Speed and flexibility in city conditions
- Stability and efficiency
- Easy to use in hilly terrain
- Electric assist
- Environmental safety

What were disadvantages of the cargo bicycles and what were issues and barriers during use?

- No lock included
- It takes time learning to control it
- Parking brake missing (specifically in hilly terrain)
- Battery life
- Missing bicycle infrastructure
- Potholes and uneven places in streets
- Barriers in streets (curbs etc.)
- Obtaining price (when considering future buy)



Street cleaning in a pedestrian zone with the Bojnice castle in the background

Street cleaning in the city of Kosice

Street cleaning in a pedestrian zone in the town of Bojnice

Street cleaning bicycle used to cleanup cycling paths - before (left) and after (right)

prepared for this group of customers. Some delivery companies include cargo bicycles in their fleets, and they also service their bicycles internally. Some municipalities have a general janitor or repairman available that might be able to fix smaller electrical or mechanical issues with cargo bicycles. It is expected though, that with the gaining popularity of cargo bikes, and of normal e-bikes, this problem will be solved relatively soon, at least in cities.

Problems and issues of the cargo bicycle rental

Delivery

The most difficult issue for us was the actual delivery of the bicycles within Slovakia. We have expected municipalities to cover transport expenses from Bratislava to their location. This arrangement worked in the end. However, it was very time consuming to coordinate the transportation. Transportation companies required special setups with pallets due to the bulkiness of the cargo bicycles. We had to obtain the pallets as well as to package the bicycles based on the transportation company's requirements. Transportation also shortened our rental times as the bicycles had to be prepared in advance and wait for their delivery. Moreover, some bicycles got damaged during transportation or while in use. We thus had to take the bicycles back and deliver them to the original rental company for reparation. These repairs took at least a couple of days, which also shortened available renting periods.

Damaged cargo bicycles

Another general issue with running cargo bicycles is that there are no dedicated repair shops in Slovakia. Although some existing bicycle repair shops might be able to service cargo bicycles, there is just a very small existing group of cargo bicycle owners in Slovakia yet, so shops are not

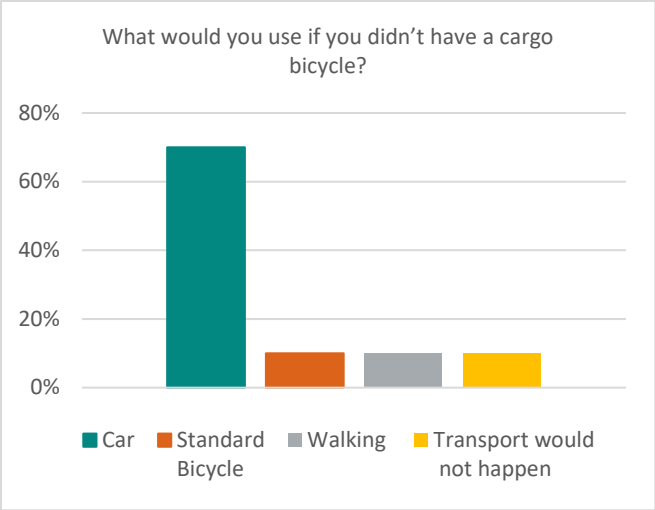
Disinfection Bicycle

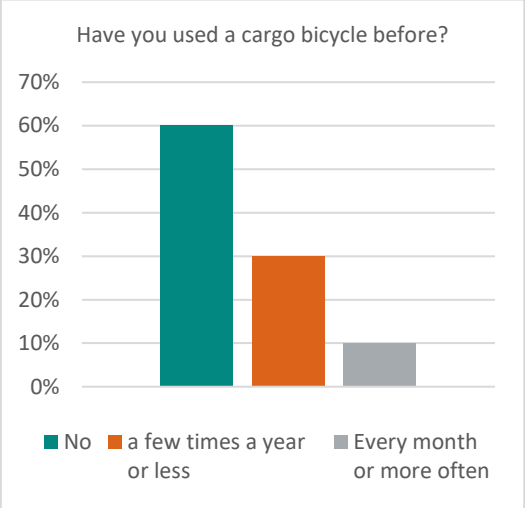
The disinfection bicycle has unfortunately been a total failure. This bicycle was meant to be used for cleaning street furniture such as benches, trash cans etc. It could have also been used for other purposes such as watering or spraying plants. We overestimated the interest from municipalities in this bicycle type due to the first COVID wave in 2020. Since the project contract arrangements were delayed, we missed the time when there was still interest in this kind of use among cities. In the end no municipality was interested in this type of bicycle, even though we actively promoted it during our workshops. We rather should have rented a second street cleaning bicycle to be able to provide it to more municipalities at the same time.

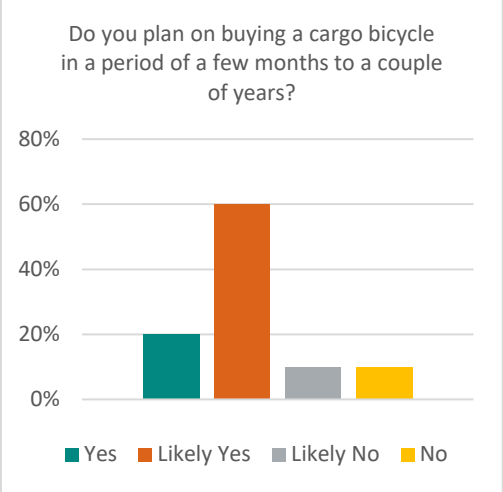
High obtaining costs

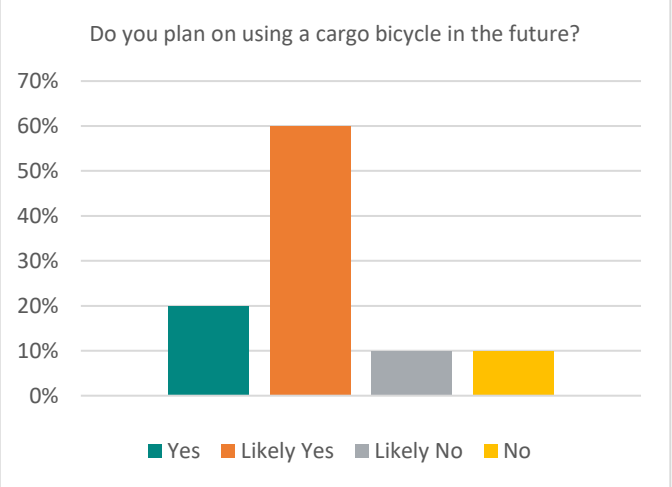
The high one-time obtaining costs are an initial barrier for smaller companies and individuals when deciding to buy a cargo bicycle. Nevertheless, these costs are still relatively low when compared to the costs of a car.

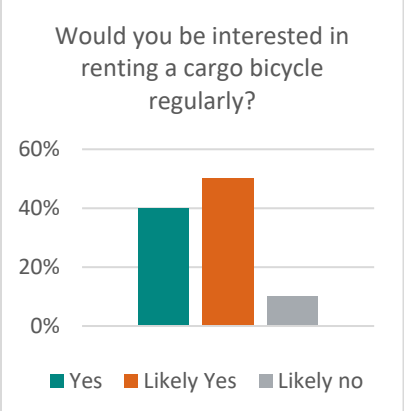
Trash cleaning with an e-trike

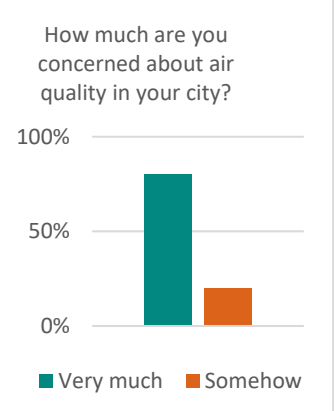

What would you use if you didn't have a cargo bicycle?
80%
60%
40%
20%
0%
Car
Standard Bicycle
Walking
Transport would not happen

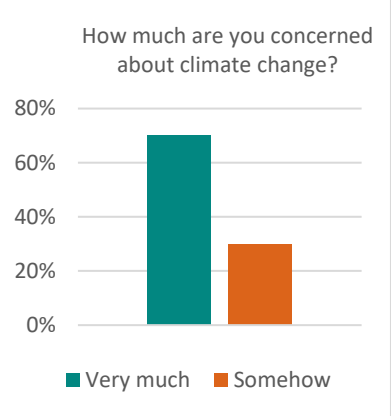

Have you used a cargo bicycle before?
70%
60%
50%
40%
30%
20%
10%
0%
No
a few times a year or less
Every month or more often


Do you plan on buying a cargo bicycle in a period of a few months to a couple of years?
80%
60%
40%
20%
0%
Yes
Likely Yes
Likely No
No


Do you plan on using a cargo bicycle in the future?
70%
60%
50%
40%
30%
20%
10%
0%
Yes
Likely Yes
Likely No
No


Would you be interested in renting a cargo bicycle regularly?
60%
40%
20%
0%
Yes
Likely Yes
Likely no


How much are you concerned about air quality in your city?
100%
50%
0%
Very much
Somehow


How much are you concerned about climate change?
80%
60%
40%
20%
0%
Very much
Somehow

Webinars and educational videos

Restrictions due to Covid-19

"Cyklokoalícia" aimed to organize four workshops to educate municipalities on improving cycling infrastructure and transportation.

However, our preparations for the workshops were stopped by the first lockdown due to Covid-19 in the spring of 2020. Consequently, we had very limited options to organize group events. In addition, the time after the first lockdown – the summer of 2020 - was not practical for organizing events either due to many people being on vacation or people having anxieties regarding the spread of Covid-19. We have therefore decided to postpone the workshops to fall 2020, only to be faced with another lockdown. Finally, we decided to replace the workshops with online educational videos and live webinars on YouTube.

This proved to have unexpected benefits as it helped us to reach more people than originally planned. While we estimated to have 200 workshop attendees, our videos have reached over 6000 people (spring 2022). These were additionally supported by a regular email campaign to 80 Slovakian municipalities, which had subscribed to the program. Moreover, multiple cities contacted us after watching the videos and requested further support for their cycling transport improvements.

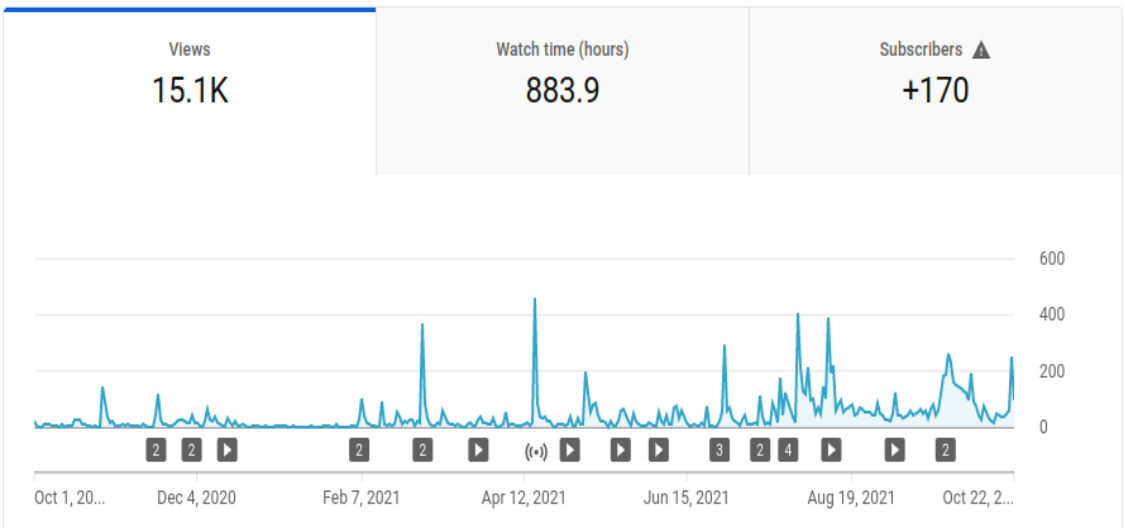
Educational videos (6)

We have published 18 videos in total. The videos were viewed by Slovakian municipalities but also by the general public. Our Cyclurban+ videos were viewed over 15,000 times between October 1st, 2020 (the date when the first video was uploaded) and October 20th, 2021 (the date when the last video was uploaded). During this period, we also attracted over 170 new subscribers to our YouTube channel

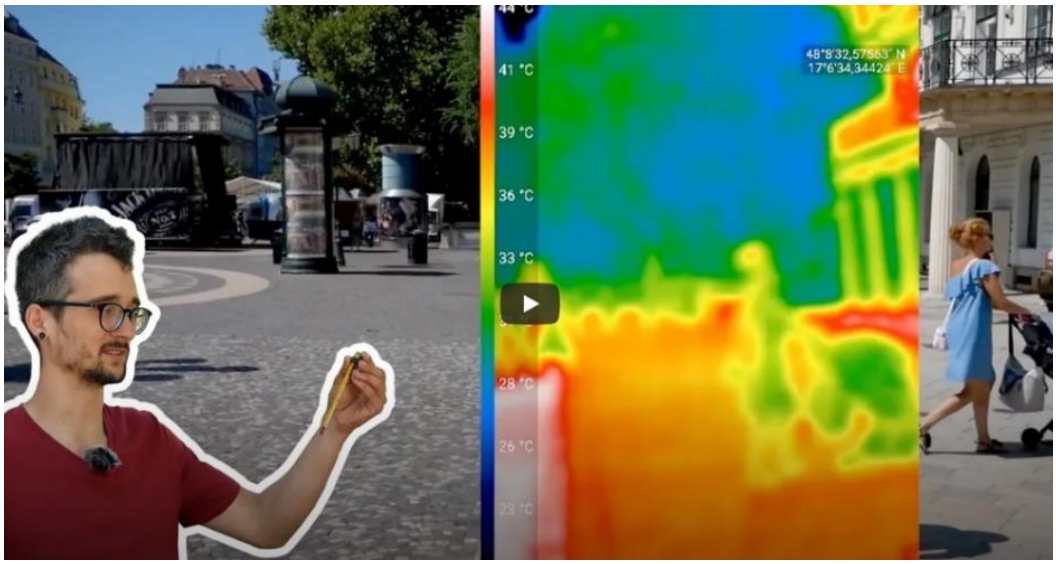
The video that was viewed the most demonstrated how public spaces in a city can influence the city´s temperatures in the summer. It also detailly explained the impact of greener streets with less asphalt but with cycling paths that help mitigating the climate crisis. The video was viewed almost 900 times (until spring 2022).

Its popularity was boosted by the overall hot weather conditions and therefore the public being interested in the topic of heat waves and climate adaptation. However, we also shared links in unaffiliated online media. Other popular videos were about good practices in cycling infrastructure. They were mostly recorded in Trnava, the cycling capital of Slovakia and in Bratislava.

YouTube statistics of the account "Cycling coalition"



Our expert urbanist and architect Our expert urbanist and architect shows unbearable temperatures in Bratislava city centre.



Live webinars (6)

Three live webinars followed as a replacement for the planned face-to-face workshops. The first topic was parking policies: In this discussion different cities shared their experiences.

The second discussion featured guest experts from larger cities talking about their plans for cycling transport in 2021 and beyond.

The last event was about a very specific topic: the issue of land split. Because in Slovakia cadastral registers are often shared by many owners for even small pieces of land. This has a historical reason: During communism, landowners were ripped from their land. Furthermore, during the restitution after 1989, landownership changed. Our experts provided examples on how to merge multiple small land splits, in order to use them for the construction of cycling corridors.

Live seminar

Finally, we organized our last workshop in Bratislava in July 2021. This time we had managed to hold the workshop in-person. We attracted more than 40 participants and nine experts. The topics ranged from cargo bicycles through best practices in cycling infrastructure in Denmark to how to advertise mobility campaigns such as bike to school. We were glad to see municipalities from farther regions in Slovakia (e.g., Poprad, Zvolen, Ružomberok) coming to the event.

Policy briefs

Traffic calming manual (7)

In addition to the workshops, we have also developed a manual for municipalities about traffic calming. This was a replacement for the accident tracking system that was planned initially but could not be developed since the Slovakian police refused to share their data. It took us 6 months from the idea to the final execution.

Content

The traffic calming manual suggests solutions to municipalities on how to improve traffic conditions. It covers different urban situations like speed limits in residential neighbourhoods, 30 km/h areas, school zones and intersections. It offers solutions that are ready to be implemented for calming traffic, increasing road safety, and thus advancing active mobility and public transport. We have also added a chapter about public spaces and rainwater harvesting to improve microclimate and environs as a measure to enhance climate adaptation capacities and life quality in general. Usage Municipalities can use the manual to select the most suitable traffic calming solution for their streets. Furthermore, we listed the prices of necessary materials or work sources – so that the reader gets information about the different measures´ costs. 120 copies of the manual were printed in October 2021 with over 40 already distributed to interested municipalities in the first weeks. Therefore, the traffic calming manual has been well received and we should see its impact in the following months to years in Slovakian municipalities.

First policy brief (8)

Content

In March and April 2020 more than a hundred self-governing regions, cities, towns, and city districts were questioned by the project about their hands-on experiences with the funding of cycling infrastructure and the available capacities for developing sustainable mobility projects. The aim of the survey was to evaluate the functionality of the current funding system in Slovakia.

First meeting

On June 3rd, 2020, “ideas into energy GmbH” and “Cyclokoalicia” presented the results and recommendations based on the analysis and the feedback gathered from Slovak local and regional authorities at the Slovak Ministry of Transport (MDV SR). After a 30-minute presentation, naming the key reasons why Slovakia is lagging in the field of cycling transport, a fruitful discussion with the mobility experts followed. At the end of the event, the representatives of the Cyclurban+ project solemnly handed the first policy brief for Slovakia to leading employees of the Ministry of Transport, which participated at the meeting, including the Ministry of Transport’s State Secretary Jaroslav Kmeť, and the National Cycling Coordinator Peter Klučka. The brief was titled ‘Let’s Substantially Support Cycling Transport – Do not reinvent the wheel’.

Second meeting

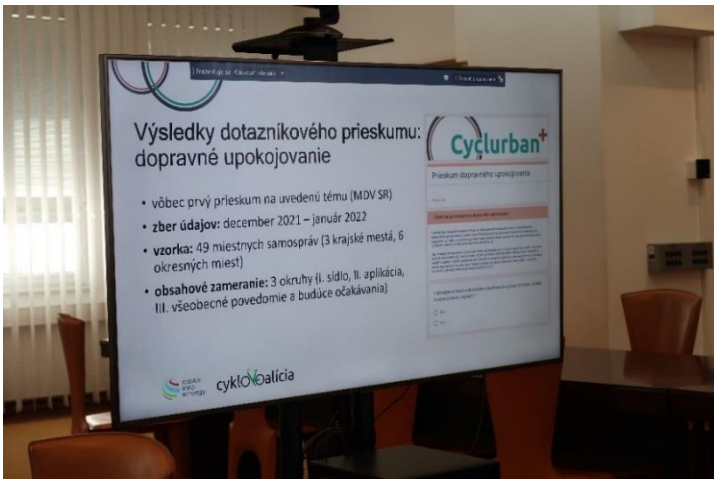
In addition, on 11th June 2020, a second presentation was organized on the premises of the office of the Deputy Prime Minister of the Slovak Republic for Investments and Informatization. Then the first policy brief was handed over to the head of the office, Bureau Roman Krpelan. The second meeting was a crucial step to improve the funding instruments of cycling infrastructure in the next periods of the program.

Second policy brief (9)

On January 27th, 2022, a meeting was held with the Slovakian Ministry of Transport and Construction to present the results of the first survey about traffic calming that was send out to Slovak cities and villages. The survey was launched in cooperation with the National Cycling Coordinator Peter Klučka, the Association of Slovak Towns and Municipalities (ZMOS), the Union of Slovak Cities (ÚMS) and the Association of Self-Governing Regions (SK 8).

In addition to informing the participating ministries’ representatives and regional authorities in form of a presentation, the project partners presented their findings and recommendations in the form of a second policy brief.

Boris Valach from “ideas into energy GmbH” and Peter Rozsár from Cyklokoalicia present the results of a survey conducted within the Ministry of Transport and Construction of the Slovak Republic



Content

The results of the online questionnaire survey, which was answered by 49 cities and villages, show that almost every Slovakian municipality is struggling with the problem of disproportionately high vehicle speeds. At the same time, almost all representatives of Slovak municipalities are convinced that the elements of traffic calming are a functional tool for increasing traffic safety. Moreover, almost all municipalities claim that they would accept expert advice on the practical implementation of traffic calming elements.

he results of the survey also suggest that Bratislava´s lack of speed limits, e.g., tempo 30 zones, is no exception in Slovakia. The speed measurements carried out by “Cyklokoalícia”, which confirmed the aforesaid experience of local governments, also became an additional activity within the preparation of the Policy Brief.

More than 1,100 measurements of the maximum speed in tempo 30 zones in nine Slovakian municipalities show that, on average, only one driver out of ten respects the given speed limit. Every fourth driver exceeds the maximum speed limit of 30 km/h by 50% or more. In view of the above findings, “Cyklokoalícia” and “ideas into energy GmbH” recommended that the ministry of Transport should educate local governments on traffic calming solutions, enable measurements of maximum permitted speed by the municipal police, establish a micro-dotation scheme focused exclusively on implementation of traffic calming measures and support this topic at the level of the state and municipal associations. Given that the representatives of the Slovak ministries agreed with the selected recommendations, the project partners believe that this activity will become the beginning of a wider use of traffic calming measures in Slovakia. A potential which has so far been almost completely neglected.

Czech Republic

Ahoj Brno!

Brno is with 380,000 inhabitants the second largest city of the Czech Republic. The city marks a political and cultural hotspot due to many centres of the Czech judiciary and many institutes of higher education being located there.

In Brno cycling is not very popular – only 1 % (5) of the city´s population uses a bike for daily transportation. One reason for this is the lacking cycling infrastructure: The city has as little as 33.3 km of safe, good-quality, and functioning bike paths[5]. In total, all bike paths are 136 km long. However, the existing bicycle paths are widely spread in the city. This causes a high fragmentation of the paths - in the vast majority cycling paths end in the middle of a busy junction.

Public bicycle rental is one part of a sustainable solution to urban mobility problems. The possibility to use a cargo bike reduces the dependence of a part of the population on car transport and improves the image of cycling in the city.

Cargo bicycle rental (10)

Data analysis on cargo bicycle rentals (11)

Usage of cargo bicycles

According to a survey amongst users of our rental pilot the cargo bicycle rental replaced a car journey in 50 to 60% of all rental cases. Cargo bikes were used in about 40% of cases for transporting children and people and in 60% for transporting cargo. The average length of a

single trip was 23 km, with the most frequent rentals being for one or three days. During the season, the occupancy rate for rentals exceeded 90% of the time available for booking.

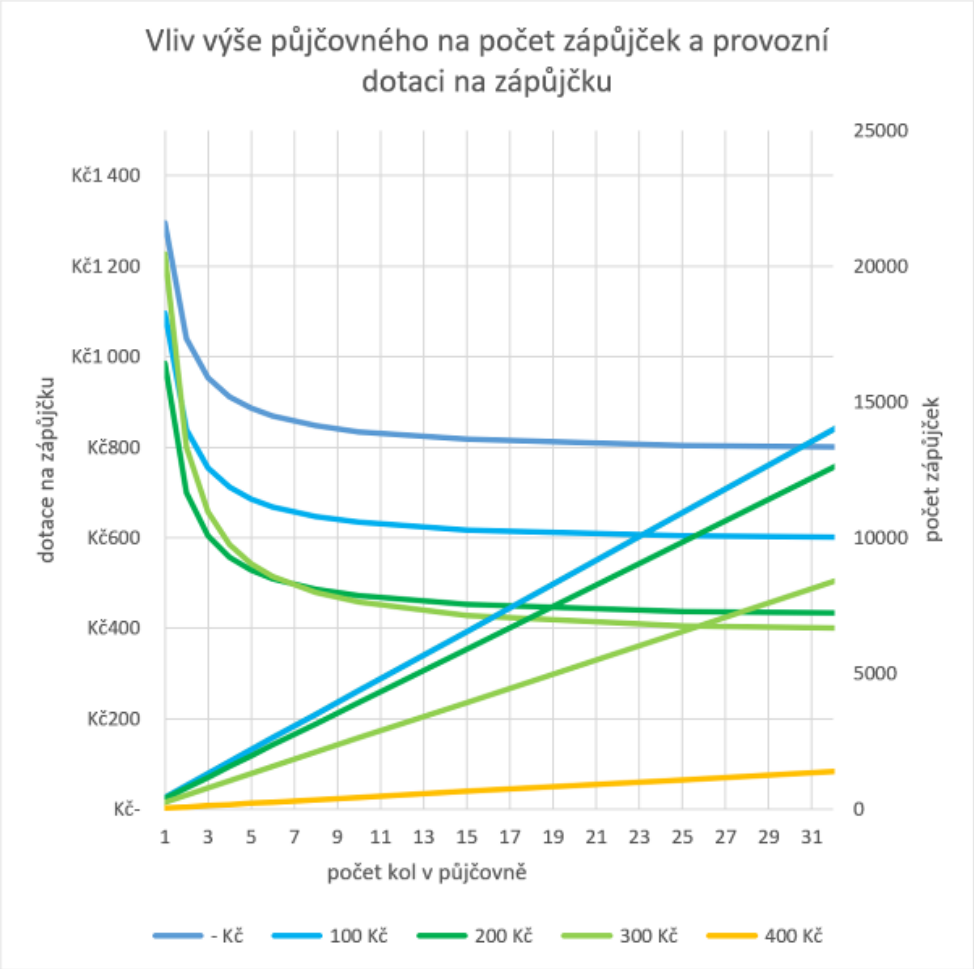
Renters of the cargo bicycles

Most users had a university degree, and the average age was 37 years old. The majority were active motor vehicle drivers, with 80% of users driving at least several times a year and 30% of users driving at least several times a week.

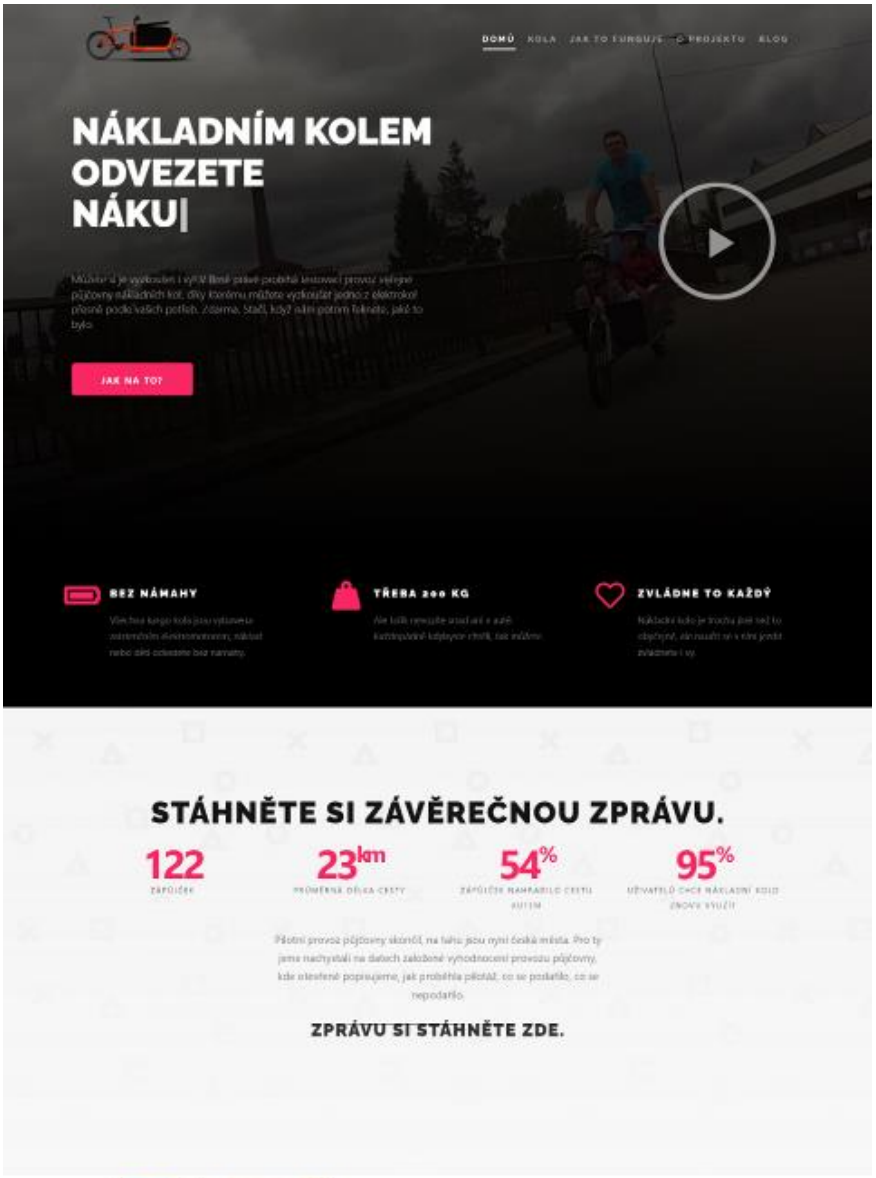
Model externí provozovatel

výše půjčovného za den	- Kč	100 Kč	200 Kč	300 Kč	400 Kč	500 Kč
provozní dotace na 1 zápůjčku	**943 Kč**	**743 Kč**	**592 Kč**	**638 Kč**	**4 129 Kč**	**8 358 Kč**
provozní dotace na kilometr	41 Kč	32 Kč	26 Kč	28 Kč	180 Kč	363 Kč
počet zápůjček	1992	1992	1793	1195	199	100
počet ujetých km	45 819 km	45 819 km	41 237 km	27 491 km	4 582 km	2 291 km
úspora CO2	3 024 kg	3 024 kg	2 722 kg	1 814 kg	302 kg	151 kg
celkový rozpočet 2 roky	2 299 892 Kč	2 299 892 Kč	2 200 285 Kč	1 901 466 Kč	1 403 434 Kč	1 353 631 Kč
nutná provozní dotace na 2 roky	1 878 328 Kč	1 479 902 Kč	1 061 555 Kč	762 736 Kč	822 500 Kč	832 461 Kč
podíl provozní dotace na obratu	82%	64%	48%	40%	59%	61%

Cargo bike rental evaluation: dashboard of financial business model for different scenarios of cargo bike rental operation; the model is available for municipalities for free.



Cargo bike rental evaluation: relationship between willingness to pay rental fee, total number of expected rentals, number of cargo bikes available and financial subsidy per rental needed.

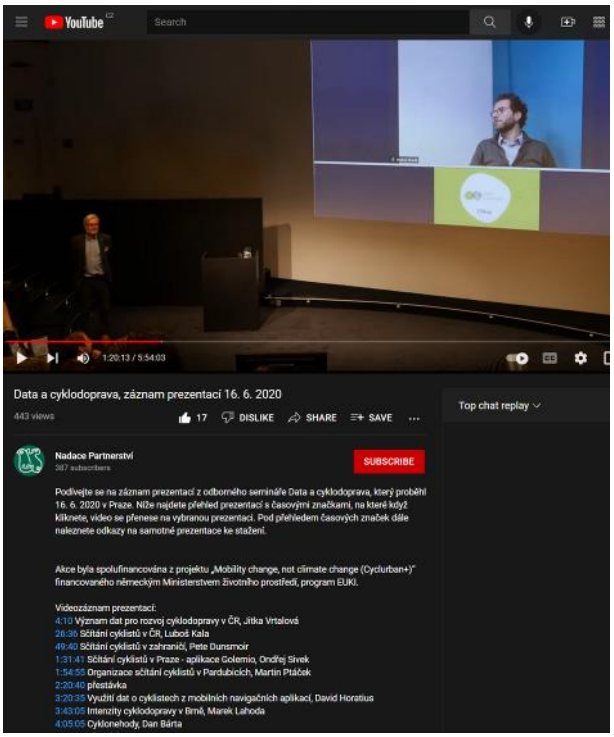


Issues with the cargo bicycles

Users cited the lack of or inadequate bicycle infrastructure in cities as the main barrier to urban bicycle use. There is an absolute gender difference in the perception of inadequate infrastructure, e.g., lack of cycle lanes and cycle tracks. A full 89% of female cargo bike users perceive insufficient cycling infrastructure as a barrier, compared to 49% of male users.

Costs of public cargo bicycles

Public cargo bike rental can be operated as a public service like public transport, senior taxis, or integrated transport systems. According to a detailed business model that was developed in the Cyclurban+ project, an operating subsidy of 40 to 50% of the rental turnover is required to run the rental service. By comparison, the Brno Public Transport Authority operates with an operating subsidy of 59 to 67% of turnover. The operation of a cargo bike rental with five cargo bikes will require public support of CZK 400,000 to 600,000 or 16,000 to 24,000 Euros per year. It can be expected to carry out 600 to 900 rentals a year, covering 13 to 20 thousand kilometres.



Time stamps have been added to the Data and Cycling Seminar recording to navigate to the specific presenters' output, as well as links to download their presentations.

Expert seminars (12,13,14)

We organized a total of 3 separate expert seminars for representatives of municipalities and the professional community. Furthermore, we participated on a seminar on cargo bikes organized in cooperation with the SUMBA+ project (Interreg BSR).

Restrictions due to Covid-19

The most powerful lesson for us was to organize the seminars in the context of the Covid-19 pandemic and the epidemiological measures that accompanied it. The pandemic significantly limited the traditional way of organizing seminars. However, we were able to organize all three seminars in a way that allowed a physical participation, using a hybrid format (the seminar being held live on-site and streamed online).

We therefore provided a live online stream allowing a remote participation on the seminar for both the presenters and the audience. The live stream of the seminars also resulted in a recording of all presentations, which is now permanently online.

In the case of the cycling seminar in the post-covid era, whose topic was dynamically adapted to the significant impact of covid on the transport behaviour of urban

dwellers, we have ensured that the recording is available in Czech and in English due to the international nature of the seminar and its translation.

Advantages

The organization of the seminars in a hybrid format was accompanied on our side by concerns about how we would manage it technically and organizationally. In the end, however, this covid-enforced format proved to have significant benefits. It allows for higher participation and increases the accessibility of the seminar even for those who cannot attend the seminar at the venue for various reasons. It further enhances the impact of the seminar´s content and presentations on the target group thanks to the availability of the online recording. We have already recorded more than 400 views of the Data and Cycling seminar (spring 2022), which is a relatively high number given the specificity of the topic of cycling and the size of the target group in the Czech Republic.

Data and Cycling Seminar

online

Data and cycling seminar

on site

Estonia

Tere Tartu!

Tartu is a city of just under 100,000 inhabitants located in Southern Estonia. The city is known for its large student population and increasingly for its high-quality living environment. It is fairly compact, and the residential part of Tartu makes up an area of not much more than 6 kilometres in diameter in any direction.

Bicycle use in Tartu has increased in the last decade from very low levels to around 10% of all commutes made within the city. The increase in bicycle use is mainly due to an increased investment in bicycle infrastructure. In the last couple of years, a more rapid increase in cycling has been observed as a result of a citywide bike share system that has proven to be extremely successful.

Cargo bicycle rental

Velorent (15)

What is "Velorent"?

The interest in using and renting cargo bikes is high in Estonia. It might be the case that people are generally moving away from owning means of transport and more towards using mobility as a service. To improve an eco-friendly transportation in Estonia we created the cargo bike rent "Velorent". The main idea behind "Velorent" is to rent out cargo bikes for longer periods (usually at least a week). Thus, people can try the cargo bikes during their daily routines. If they find it suitable for their needs, they are encouraged to buy their own cargo bike. The necessity for such a service result

from the relatively high price of cargo bikes and consequently people being reluctant to purchase a bike without first making sure it fits for their purposes. “Velorent” has played a big part in bringing cargo bikes into the public consciousness in a town not known for its cargo bike culture, and as of autumn 2021, is still going as strong as ever.

Operator of “Velorent”

“Velorent” is a publicly operated scheme that is overseen by a municipal sub-organization. While there is a rental fee, the service is to a large degree subsidized by the municipality. There was some interest in handing “Velorent” over to a private operator after the initial pilot period. However, as no serious partners emerged, the municipality decided to operate the scheme on its own going forward. This has numerous benefits for the user as private bike share schemes are notorious for their unreliability and often poor user experience. With a publicly run scheme users can be sure of the continued reliability, affordability, and good user experience, especially as Tartu has experience with a much larger publicly run regular bike share scheme.

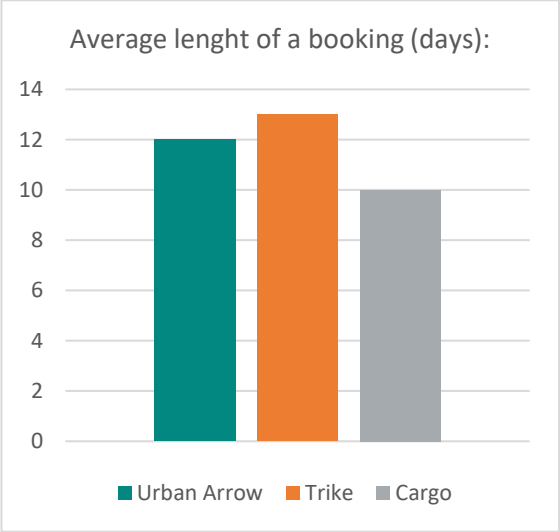
Upgrade of “Velorent”

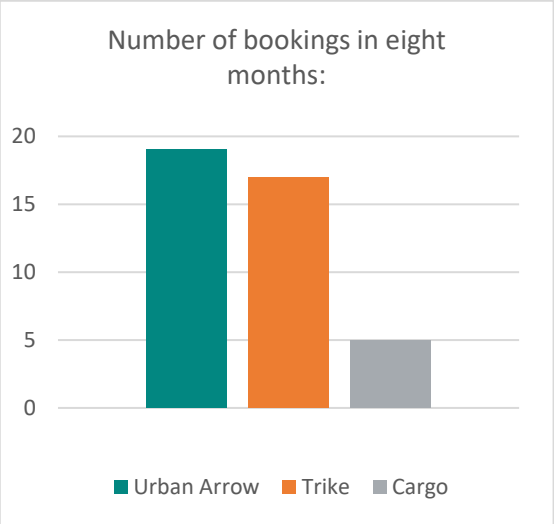
The cargo bike rent “Velorent” has been operating in Tartu with support of the project “Cyclurban+” since the beginning of 2021. In the first 8 months, the scheme was small, having just three cargo bikes to rent. For this reason, as well as the long rental periods, there were quite few rental processes that needed to be carried out daily. Therefore, the rental process has not been automated to a significant extent. Instead, each person wanting to rent a cargo bike needed to fill out a form on a website and arranged the collection of the bike via email. However, in autumn 2021, after initial success of the Cyclurban+ cargo bike pilot, the service was then upgraded with 14 additional cargo bikes. At this point it was necessary to develop a new booking system and install a new maintenance/rental point in the city centre area.

Storage of cargo bicycles in the city

The bikes are stored in the main point of operations of the city transport. The collection of cargo bikes used to take place in the same place, which was quite inconvenient as there are no bus lines or bike-share stations sufficiently near the place. This has been highlighted in the feedback collected from the customers. As a response to this, now it is possible to collect a cargo bike in the city centre at a specifically built maintenance and rental station. It is now also possible to return the cargo bike to this station.

Data analysis on the cargo bike rental





There is a feedback form for all customers that is used to improve the service. This was instrumental in making the decision to change the cargo bike pickup location. As of autumn 2021, the total number of bookings made was 41, with feedback questionnaires filled out by 1/3 of users. Combining GPS and survey data offers plenty of interesting insights about how the cargo bikes were used and the users' experiences.

How did the different cargo bikes perform?

The Urban Arrow cargo bike was rented out 19 of a rental period was 12 days with the shortest lasting 4 and the longest 45 days. The majority of rental periods were between 10 and 12 days long. The total distance covered from the start of June to September was 674 km.

The Trike model suitable for transporting children was rented out 17 times for a total of 225 days. The average length of a rental period was 13 days with the shortest spanning 4 and the longest 48 days. The total distance covered was 745 km. It is worth noting that the two models suitable for transporting children were much more popular than the one meant for just cargo.

The Trike Cargo model was rented out 5 times for a total of 50 days. The average length of a rental period was 10 days with the shortest spanning 4 and the longest 15 days. The total distance covered was 188 km.

The two-wheeled model Urban Arrow was by far the most used cargo bike, both in terms of bookings as well as (and in particular) distances covered. The Trike E-drive was also popular, as it was booked for almost the entire period, but the distances tended to be shorter. The trike cargo was less used during the pilot period.

What was the average ride length?

The quantitative GPS data for the first three cargo bikes spans roughly during the first nine months of operations of "Velorent". During this time, a total of 41 bookings were made, that altogether lasted 503 days during which 1607 kilometres were covered. On average, this makes around 3.2 kilometres per day. In reality though, the distances covered were significantly larger as the GPS data is missing for the most popular bike from the start of January to the end of May.

Why were renters interested in the cargo bicycles?

Most often, people used cargo bikes for transporting children. This is common for cargo bike use in general in most European cities. However, the cargo bikes were used for different tasks: “I used the bike for taking my child to a kindergarten, going to work and bringing home groceries.”

What were the advantages of cargo bicycles?

Users had generally very positive experiences using cargo bikes. Their stability (on snow and ice), ease of operation, perceived safety and especially the opportunity to talk to children being transported in the cargo hold were the main reasons for positive feedback.

What were disadvantages of the cargo bicycles and what were issues and barriers during use?

Some barriers to cargo bike use are easy to or have already been overcome. Other issues will take some time to fully address as they involve quite significant infrastructure or other investments. Among the former are the location of Velorent pick-up points, which has already been moved to the city centre, as well as the missing accessories (mirrors, hi-visibility vests) and the arduous booking process, for both of which solutions are being developed.

Did the respondents used a cargo bicycle before, and would they use it in the future?

Most of the survey respondents did not have any previous experience with cargo bikes. Three respondents had previously used a cargo bike a couple of times a year and one respondent had used a cargo bike at least once per month. Survey respondents were very interested in renting a cargo bike again in the future. 85% of respondents are planning or are likely to rent a cargo bike again in the future while 15% were not sure. All respondents reported to be interested in renting a cargo bike periodically.

Did the cargo bikes replace car rides?

In terms of car replacement, the survey results were very positive. 85% of respondents used cargo bike mainly as a replacement for a car. The remaining 15% used it instead of a regular bicycle. These initial results offer optimism that cargo bikes can be a viable alternative to car use for many people in Tartu.

5 success stories

Cyclurban+ results translated into the Slovak RRP

As a part of Cyclurban+, the first-ever survey on financing instruments for cycling development among Slovak municipalities was launched. Based on conclusions drawn from its evaluation, a set of recommendations were elaborated in the form of a Policy Brief. As a result of these activities, an Inter-Ministerial Working Group on Cycling Transport started to operate. Moreover, lessons learnt were translated into the Recovery and Resilience Plan, leading to the inclusion of €100 million for cycling deployment and a brand-new methodology for the project application assessment.

54 % of cargo bike uses replace a car trip

Public cargo bike rental proved the huge potential for making urban people independent from cars. During a rental pilot in Brno (Czechia) 122 rentals were completed with an average trip length of 23 km. 95 % of users would love to use a cargo bike again in future and if public rental wasn't available, 54 % of recorded trips would be made by a car. Pilot testing demonstrated that many cars can be replaced by cargo bikes in a city.

Mandatory overtaking distance 1.5m approved!

Cyclurban+ project aimed to lobby on national level for improvement in cycling conditions in Czechia. A project's policy brief presented how mandatory safe passing distance of 1.5 meter can improve safety of cycling across the country

and undecided members of parliament had been approached. There was a fierce discussion in the media about the law amendment with no definitive support in Czech Senate. However, the law amendment passed by a margin of one single vote!

Municipalities show lot of interest in a street cleaning cargo bicycle

There was a great interest in rental of street cleaning cargo bicycles for municipalities. 12 municipalities tested the street cleaning bicycle and found it useful for servicing narrow streets, sidewalks or spaces that are difficult or unsuitable to be accessed by car such as parks or pedestrian zones. Three municipalities are already in process of buying such cargo bicycles based on their positive experience with rental, while others will consider it in the near future.

Cities responded to educational videos during pandemic

Four workshops that "Cyklokoalicia" was to organize to educate municipalities on improving cycling transportation has been replaced by online educational videos and live webinars. It helped us to reach more municipalities as well as urban planners and other interested public. While we originally estimated the number to reach 200 workshop attendees, our videos have reached over 6000 people on YouTube. We kept in touch with municipalities notifying them of new videos by email. Multiple cities contacted us after watching the videos and requested further support for their cycling transport improvements.

Conclusion

To improve climate friendly transportation, politicians, local administrations, companies, and citizens need to collaborate and develop common goals regarding climate policies as well as an idea of a city that provides a high life quality for all citizens without favouring specific privileged groups such as car owners. It is therefore inevitable that cities detach from motorized private transportation and establish eco-friendly and sustainable alternatives. This is important not only from an environmental perspective but also from an urban development point of view by organising urban space in a way that supports all interests, favours road safety, avoids emissions, and reduces noise pollution and congestion. To achieve this aim, it is nevertheless not sufficient just to restrict car traffic if no alternatives are in place. Thus, municipalities need to offer efficient travel options by strengthening their public transport systems, complemented by a safe and consistent network for pedestrians and cyclists as well as shared mobility solutions and seamless modal connections (mobility hubs). All this is needed to provide fast, safe, and affordable transport connections for every citizen. Cycling can play a major role in this new mobility system as it is fast, climate friendly, silent, and efficient in terms of the space needed. The Cyclurban+ project developed solutions that enable more cycling traffic and promoted those solutions by addressing stakeholders in cities in Slovakia, Czechia, and Estonia.

This lessons-learned report highlights different pilot-cases and possible measures for local authorities that were developed and tested in the Cyclurban+ project.

One pilot was the implementation of a cargo bike rental system in 3 cities, that enabled individuals and companies to test cargo bikes in their daily routines and therefore helped with the decision to purchase an own cargo bike for long-term use.

Many people reject cycling as a means of daily transport not because they don't like to cycle but because they don't feel safe doing so in the city traffic. Thus, enhancing road safety for cyclists is a key factor to achieve a higher modal share of cycling. More safety can be attained by a variety of measures but building a coherent and safe cycling network that is ideally separated from car and pedestrian traffic is a key factor. Other safety measures such as good visibility at crossings or speed reductions for cars are also important and were compiled in a manual for Slovakian municipalities that was developed by the project. In general, authorities should constantly keep on improving the bicycle infrastructure and implement measures that reduce car traffic and simplify cycling.

Education and communication were other key aspects in the Cyclurban+ project. This included discussing with politicians and other decision makers as well as offering seminars and workshops, tutorial videos and manuals to stakeholders and experts.

The examples of frontrunner cities such as Paris or Barcelona show that courageous decision makers as well as engaged citizens or (grassroots) organisations are extremely important to bring about change in the transport system. Mobility behaviour is strongly influenced by habitual patterns of individuals and groups. Those patterns are the result of many decades where the car was praised as the answer to most mobility needs, including its role as a symbol of freedom, individualism and last but not least lifestyle and status. Naturally, these preconditions still exist and as a result facing strong opposition from conservative groups or car-oriented individuals and lobby groups must be factored in. It is therefore advisable to start new measures with an inclusive dialogue and invite all interest groups to the process.

In this sense we hope that this manual can inspire to address change and move forward towards more climate friendly and attractive municipalities and cities.

Index

1. www.statista.com [https://www.statista.com/statistics/999398/carbon-dioxide-emissions-sources-european-union-eu/]. 13.09.2022
2. www.europarl.europa.eu [https://www.europarl.europa.eu/news/en/headlines/society/20190313STO31218/CO2-emissions-from-cars-facts-and-figures-infographics]. 18.08.2022
3. www.argobikes.com [https://argobikes.com/blogs/blog/what-is-a-cargo-bike-and-why-you-should-want-one]. 18.08.2022
4. www.theconversation.com [https://theconversation.com/to-get-people-out-of-cars-we-need-to-know-why-they-drive-27279]. 18.08.2022
5. www.storymaps.arcgis.com [https://storymaps.arcgis.com/stories/ac4013968cc64728b5663b375f7a372c]. 13.09.2022

Useful Links

Slovakia

6. You can find the playlist with all educational videos and online discussions here: https://www.youtube.com/watch?v=xtDKTpjzQoo&list=PLXiFL73NW4iFHbdvjR4WBN4pX0w3uQDMm (Slovakian only)
7. You can find the manual here: https://wiki.cyklokoalicia.sk/wiki/Manu%C3%A1l_upokojovania_dopravy (Slovakian only)
8. You can find the first Slovakian policy brief here: https://www.cyclurban.eu/wp-content/uploads/2020/06/policybrief_SK_final.pdf (Slovakian only)
9. You can find the second Slovakian policy brief here: https://cyklokoalicia.sk/wp-content/uploads/2022/02/Policy-Brief_Dopravne-upokojovanie_final.pdf

Czech Republic

10. You can find the homepage of the cargo bike rental here: https://www.kargopujcovnabrno.cz/ (Czech only)

11. You can find the full evaluation report for the cargo bike rental pilot operation in Brno here: https://www.kargopujcovnabrno.cz/wp-content/uploads/2021/09/kargo-report-v3-final.pdf (Czech only).
12. You can find the two online seminars here: https://www.youtube.com/watch?v=WJXeMKyc4Mg (Time stamps have been added for better navigation of the specific presenters' output, further weblinks have been added, on which you can download the presentation)
13. You can find the live seminar here: https://www.youtube.com/watch?v=s2vrUjXmpok&list=PLojMJcND6bXu--ynDCWoXLOiYEyh3Nvzr&index=33 (Czech)
14. And here: https://www.youtube.com/watch?v=zgbGFcYH6MA&list=PLojMJcND6bXu--ynDCWoXLOiYEyh3Nvzr&index=35 (English)

Estonia

15. You can find the website of Velorent here: https://tartu.ee/et/velorent#rattad

Others

16. You can find the project website here: www.cyclurban.eu
17. You can find other reports and booklets of the project here: https://www.euki.de/en/euki-publications/

Partner websites

18. Czech Environmental Partnership Foundation
19. Cyclokoalicia
20. Ideas into Energy
21. Baltic Environmental Forum Germany

BEF Social Media

22. Instagram: https://instagram.com/bef.deutschland
23. Facebook: https://www.facebook.com/bef.deutschland
24. YouTube: https://www.youtube.com/user/BEFDeutschland