BITS
Bicycles and Intelligent Transport Systems

Evaluation report

More cyclists, more trees
Cycledata

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Project coordinated by Province of Overijssel

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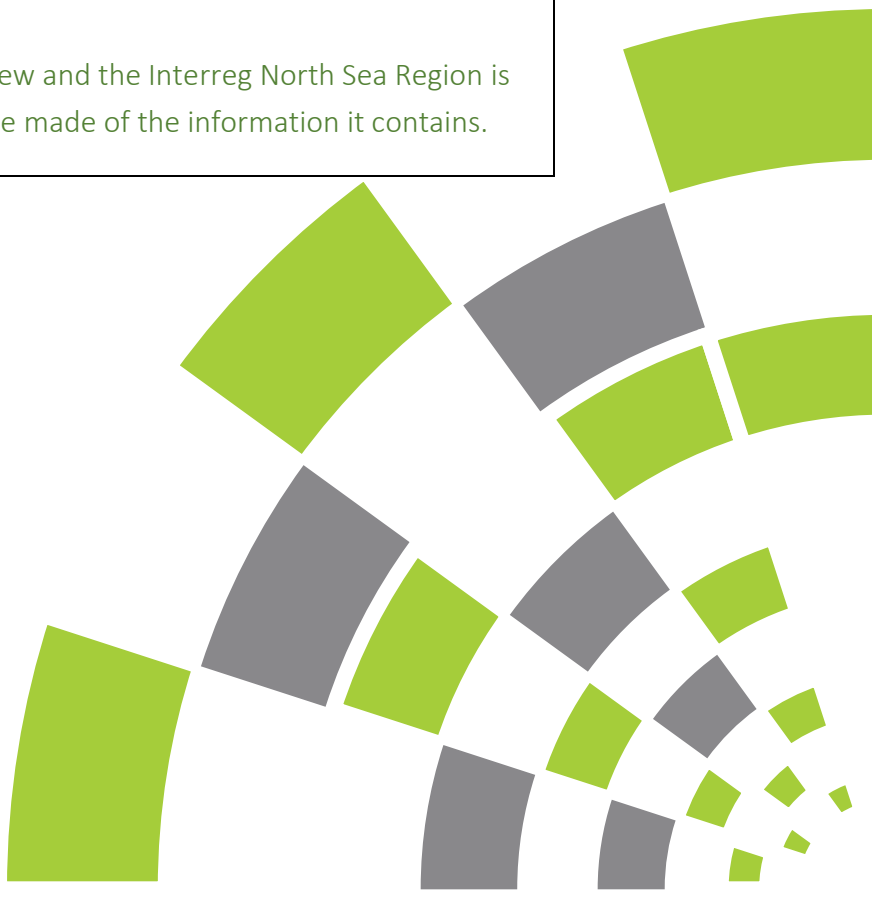

Interreg North Sea Region BITS
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EUROPEAN UNION

Short description

In the province of Utrecht, in Bunnik alongside the Koningslaan, a rewarding system had been installed to encourage people to use their bike. A digital counting system was installed near the cycling path which indicated how many cyclists already passed by and how this corresponded with the planting of trees in the area. The main message at the digital sign was: 'for every 100 cyclists, we will plant a tree in this area. In this way, the pilot aimed to evaluate the impact of a collective rewarding system on the increase of cycling. The pilot was run by the company Cycledata in cooperation with the Province of Utrecht.

Type of ITS

Signum cyclist counting equipment

Digital display for motivational feedback

Timeline

In September 2021, the pilot started running. During a period of two weeks (13/9/22 – 26/9/22), the digital sign 'for every 100 cyclists, we will plant a tree in this area' was operational and the number of cyclists was measured daily. The actual number of cyclists was shown on the digital sign. To evaluate whether the motivational sign can be linked to an increase in cyclists, the number of cyclists was equally measured before and after the trial when no sign was presented. To support the pilot, the commune strongly invested in a good communication strategy, before, during and after the pilot.

Hypothesis

A collective rewarding system may lead to a higher cycling use among residents in the area.

Data sources

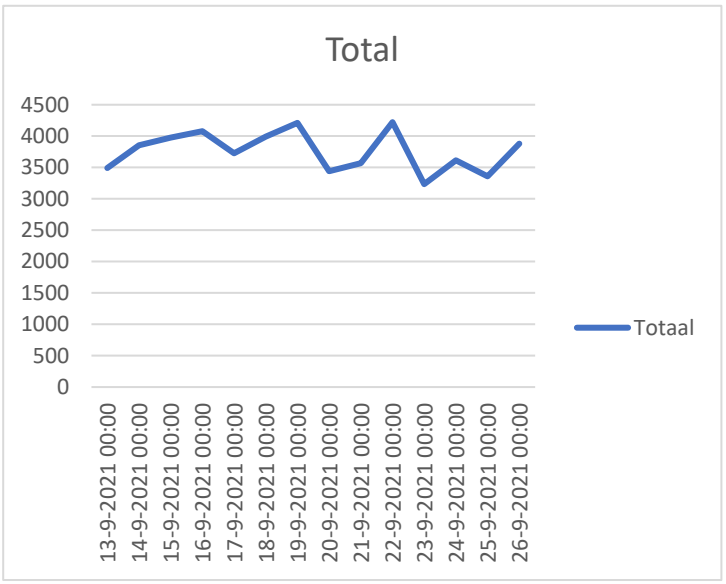
- Data on the number of cyclists in the period the digital sign 'for every 100 cyclists, we will plant a tree in this area' has been shown
- Data on the number of cyclists before and after when no digital sign was shown
- Reactions of residents in the area where the digital counting system was installed
- Report of a meeting with project managers about the evaluation of the pilot

Analysis

Report of the pilot

- During the two weeks (13/9/22 – 26/9/22) of the pilot, data were collected daily on the number of cyclists passing by at the cycling path in the Koningslaan in Bunnik. These countings made clear that on average 3760 cyclists passed by every day.

Date	Number
13-09-21	3493
14-09-21	3852
15-09-21	3976
16-09-21	4078
17-09-21	3727
18-09-21	3993
19-09-21	4212
20-09-21	3442
21-09-21	3567
22-09-21	4222
23-09-21	3234
24-09-21	3616
25-09-21	3357
26-09-21	3878
Total	**52647**



Generally, when comparing the data collected during the installation of the digital sign 'for every 100 cyclists, we will plant a tree in this area' with the number of cyclists passing by when no digital sign was installed, it became clear that the number of cyclists passing by was far lower when no sign was installed. Regularly, on average 2800 cyclists passed by on this cycle path each day. Clearly, the collective rewarding system had an impact on the number of cyclists: an increase in number of cyclists of approximately 34% was observed. A note here is that there might have been other influencing factors impacting this number, such as better weather conditions (the pilot took place at the end of summer).

In addition, the data on the reactions of residents living in the area where the digital counting system was installed, revealed that the residents indeed cycled more because of the motivational sign. They were motivated to help raising the number of trees to be planted. They equally encouraged each other to use the cycle path. A local tree trader offered an extra of 50 cherry trees to create in this way an additional motivation for residents. He promised that residents could freely pick cherries once the trees were planted. The motivational sign incited as such a spill over effect.

However most remarkably, the counting of the cyclists that has been performed in the weeks following the pilot showed that the number of cyclists again dropped to the number counted before the pilot. The motivational sign seems to be a sine qua non to keep up the motivation to cycle.

Experiences project managers

The project managers think that communication is in fact key to this pilot. If there is no communication before, during and after the pilot, the impact of the rewarding sign will be very limited. The promotion efforts in local and online newspapers (see bibliography) were evaluated as very valuable and contributing to the success of the pilot. A press event has been organised at the time the last tree has been planted to communicate to the residents of Bunnik the results and the impact of the pilot, namely the number of trees that have been planted due to their efforts. Such events are crucial according to the project managers and a precondition to the success of the pilot. Communication should be continuously and should stretch over a longer period of in time to keep up the results.

An interesting follow-up would be repeating the pilot but then showing the time during a much longer period as for example one year. What would be the impact on the number of cyclists in this case? Would the average daily number remain higher as compared to the situation without motivational sign? Would because of the longer exposure to the sign, the average number remain high even after the sign would be removed? To end with, stretching the pilot over a period of one year allows to control for the bias that could be due to the weather conditions.

Conclusions

The pilot ran smoothly mainly because the commune was in favour to try out this pilot using the motivational sign “more cyclists, more trees”. The commune strongly supported the pilot with a performant communication strategy, before, during and after the pilot. The pilot was well prepared, very straightforward and the period in which the experiment took place was limited in time (two weeks). The pilot has not been confronted to any obstacles. The BITS-target of an increase of 10% cyclists, has been reached. In the light of the BITS-project goals[1], we may conclude that the main goal of this pilot is reached. The collective rewarding system of planting trees in exchange for cyclists passing by leads to an increase in cycling use among residents with approximately 34%. However, once the pilot was finished, the impact disappeared rather quickly: the number of cyclists returned to the situation measured before the signs “more cyclists, more trees” were placed.

[1] an increase in cycling use with 10% and a reduction of CO2 emission with 9% within target groups due to the implementation of ITS solutions

Lessons learned

Combining a digital counting system with a motivational message works. The data show an increase of cyclists of 34%, albeit for a short period. A first lesson learned concerns the period of running this type of pilot. Showing a motivational sign during a period of one entire year (instead of 2 weeks) would allow not only to verify whether the impact of the motivational sign remains over time, but also to control for the bias of the weather conditions. In the Bunnik trial we cannot be entirely sure whether the positive impact that shows in the data is only due to the motivational sign and has not been biased by the weather conditions between 13-9-2021 and 26-9-2021. A pilot that runs over an entire year will cover all types of weather conditions and therefore will average out its effects. The BITS-survey showed that 54,7% of the respondents argue that bad weather conditions are a barrier to cycle more. 40% argued that they feel strongly dependent on weather conditions to decide on using a bike. Pilots that focus on motivating people to use their bike therefore should take into account changes in weather conditions. A second lesson learned is that pilots aiming at motivating people need to be supported by a good communication strategy and obtain full collaboration of local authorities.

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