



2020
CiViTAS
Cleaner and better transport in cities

DESTINATIONS



Measure Evaluation Result

LIM 3.3 - Safe routes to school

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Executive Summary

The main goal of LIM 3.3 was to attract pupils from a young age to use sustainable mobility modes, to decrease future accidents from the increased use of sustainable modes in the future.

This measure focused on carrying out workshops at schools to educate students, parents, and teachers on road safety and the use of sustainable mobility modes for commuting to school. The delivery of the workshops began in the academic year 2017-2018, continued during the academic year 2018-2019, and were completed in the academic year 2019-2020. Video material was prepared about the safety of using sustainable modes of mobility (walking, cycling, use of public transport, and carpooling), and was promoted to schools during the workshops (<https://www.youtube.com/watch?v=wjuLrkfozql>). A feasibility study, including a number of primary schools, with a number of students participating from each school, and a scheduled timeline for the workshops, was implemented to organize and find the primary schools that were able to be visited according to the prepared timetable. Meetings among school principals and teachers took place in order to prepare the workshops. An invitation was sent to the parents to give permission to participate as well as to join the workshops.

The aim is to achieve successful parental and pupil mode shift through delivering separate workshops at each participating school. The target is to increase safety during peak hours, reduce accidents, and increase pupils' sustainability awareness. A natural impact on public health can also be achieved regarding obesity among young children, which can be used for motivation about cycling and walking.

The most important driver was the need to improve and promote the more convenient, safe, and environmentally friendly movement of students/teachers/parents in schools. Although, at the beginning, it was difficult to receive the approval from the Ministry of Education and Culture to implement the workshops in primary schools, by the end it had been approved, enabling evaluation of the measure to proceed.

The workshops and training sessions were implemented in 49 primary schools and 2,449 students actively participated. The use of sustainable modes among students increased. According to the survey during the academic year 2018-2019, 78% of participants said that their child goes to/from school in their parent's car, 8% goes to/from school in a relative's the car, 8% use the bus, and only 6% walk to/from school. On the other hand, during 2019-2020, the number of students who use a private car to get to/from school was decreased to 57%, those who use carpooling was increased to 33%, and those who walk to get to/from school was increased to 10%.

Fortunately, this measure was not affected by COVID-19 and local partners have completed the evaluation of the measure on time. The local team will continue to undertake questionnaires in order to ensure the good mobility situation of the city.

A Description

The measure intends to improve and promote the more convenient, safe, and environmentally friendly movement of students, teachers, and parents in schools. Initially, a feasibility study took place in order to organize and find which schools able to be visited according to a prepared timetable. Through a survey that was distributed to the parent-teacher association, it was possible to collect data about the most common ways of transport to school, total number of schools, and number of pupils in the region. By visiting the Police Authority of Cyprus, information regarding the number of accidents and explanations about the traffic jams caused by schools were retrieved.

Moreover, 3 workshops and 3 training sessions in primary schools have been undertaken through the academic period of 2017-2018, 2018-2019, and 2019-2020, while the prepared material has been distributed among pupils and parents. The workshops aimed to educate and train parents and elementary school pupils on road safety. For the training sessions, cooperation with the police authorities of Limassol took place.

A video has been created to encourage pupils and parents to behave safely with the use of sustainable modes of commuting. The impact of the training sessions for pupils and parents lead them to the preparation of a list with the most important safety issues to be addressed, based on their experience, in order to eliminate mobility risks. Finally, via this measure, a natural impact on the public health was achieved regarding obesity among young children, which can be used for motivation about cycling and walking.



Figure 1: Implementation of innovative workshops in primary schools

A1 Objectives and outputs

City policy level objectives

The measure is in line with Limassol Municipality and Police Authority of Cyprus strategies contributing to the below objectives:

- Increase the total share of citizens that use sustainable mobility modes
- More attractive and safer roads
- Change habits of local people and elementary school pupils

Measure Specific objectives

- Reduction of traffic and accidents close to the schools
- Education and training of parents and students for road safety and greener approaches
- Change local habits
- Promote safe and alternative means of transportation
- Decrease the traffic noise during the peak hours
- Improve the air quality/decrease environmental pollution
- Improve the leisure transportation for tourists

Outputs

- To involve 10 schools in this plan and inform approximately 50 students from each school
- Video material was prepared for schools during workshops with regard to safety of using sustainable modes of mobility
- Workshops in 46 primary schools which informed about 50 students from each school¹

Supporting activities

The Police Authority of Cyprus (Traffic Department) supports the measure. The presentations/workshops have been organised with the support and participation of the Parents' and Teachers' Associations of the schools involved.

A2 Inter-relationship with other measures

LIM 3.3 has a strong interaction with other DESTINATIONS measures:

- **LIM 3.4:** *Attractive and accessible public spaces to promote intermodal leisure trips*, as this measure promotes intermodal leisure trips through attractive, safe, and accessible public spaces. Moreover, in LIM 3.3, the school community has been educated to use sustainable means of transport, to navigate the city more safely, and as a result, a series of measures were proposed which will lead to safer mobility. Therefore, the activities carried out in LIM 3.3 contributes to the fulfilment of LIM 3.4, as tourists are offered leisure transportation since locals have been trained to use sustainable modes safely and prefer them from conventional vehicles.
- **LIM 7.1:** *Improvement of PT routes, timetables, ticket procedure and bike transportation on buses to make the service more attractive*. The activities of this measure improved the mobility of students to go to school by bus and bike, while at the same time increasing the safety of moving around.
- **LIM 7.3:** *PT traveller information system*, as this measure helps students to schedule their trips and to not be late at school as well as to not be late to come back home. Therefore, PT will be an option for students to travel more efficient in terms of time, comfort, and safety.

¹ Extra output with DESTINATIONS budget

A3 Target groups and/or affected part of the city or region

School communities (students/schools/ teachers and parents' association), residents, and tourists moving within the region will be influenced by this measure.

A4 Stakeholders involvement

Stakeholder name	Activities description
Limassol schools	In order to arrange workshops
Parents Teachers Association	In order to arrange workshops and ensure parents participation
Police Authority of Cyprus	To support in planning and with material

Table 1: Stakeholder involvement

B Measure implementation

B1 Situation before CIVITAS

Limassol city spreads across a wide area in the Region and it is very difficult to commute without a mode of motorised transport. Unfortunately, the use of public transport (PT) and other sustainable modes of transport is not very popular on the island.

Most of the students are usually taken to school by their parents with their private cars, which creates congestion around the school roads as well as a more dangerous environment for the pedestrians that use the same roads to go to school or who are passing by. The increased traffic due to school schedules increases delays, other drivers' anxiety, and potential accidents. Additionally, in some schools, there is lack of convenient PT services as well as a discouragement for choosing cycling/walking options as a means of transportation that adds to the already large numbers of extra vehicular movements. On top of that, the University campus is situated 4 km from the city centre, serving more than 6,000 students, from which the majority lives close to the city centre; their transportation also adds a significant load. The result of all this traffic causes delays, frustration, high emissions, and increased possibility for minor accidents.

B2 Innovative aspects

The most innovative aspect of this measure was related with the **new conceptual approach**. This measure was a totally new approach introduced in Limassol city and focuses on delivering workshops at schools to educate students and parents for road safety and the use of sustainable mobility modes to commute to schools. The target is to increase safety during peak hours (at drop off and pick up time) in order to reduce accidents and increase pupils' sustainability awareness.

Apart from safety measures, this measure aims at changing the modal split. Efforts have been made to attract pupils from a young age to use the right sustainable mobility modes as well as their parents, in order to fight obesity and improve public health. Another innovative aspect of this measure is that tourists have the chance to enjoy their leisure transportation since locals will be trained to use sustainable modes safely (change their habits) and prefer them from conventional vehicles.

The Innovative workshops that have been implemented during this measure motivated the pupils to use their tablets, connect to the internet, and search various topics regarding sustainable mobility. This approach follows the concept of Game-Based Learning. By implementing this measure, pupils have been guided through questions to reach specific educational material in the area of mobility and learn about some existing gamification exercises (e.g “Traffic Snake” or “Beat the Street”).

B3 Technology development

No specific technology requirements besides the video material to be prepared.

B4 Actual implementation of the measure

In Limassol, Stratagem Energy Ltd, in collaboration with Limassol Tourism Board, gained permission from the Ministry of Education and Culture (in February 2018) to communicate with schools as stated in the feasibility study, and to implement workshops at primary schools.

A feasibility study was implemented to organize and find which schools were able to be visited according to a prepared timetable. The feasibility study includes:

- Number of primary schools
- Number of students participating from each school
- Scheduled timeline for the workshops

Once the feasibility study was undertaken, several meetings were held with school principals and teachers in order to prepare the workshops based on the needs of students, and a letter was sent from the schools to invite parents to the workshops, and for them to give their permission to participate in workshops. Moreover, video material has been prepared about safety in using sustainable modes of mobility (walking, cycling, use of public transport, and carpooling), which was promoted to schools during the workshops.

The number of schools participating in workshops was increased to 46 Primary schools, instead of 10 schools as stated in the Grant Agreement, with the active participation of 2,449 students (13 schools joined the first period, 15 schools during the second, and 18 schools during the 3rd period). During the workshops, presentations about road safety, cycling, walking, carpooling, and use of public transport have been provided. Also, experiential games about the benefits gained from walking to schools, road sign games, stimulation of traffic parking and cycling parking with games

and activities, and pedestrian zebra crossings with guidance outside schools have been undertaken. In addition, a constructive discussion with parents and students about the traffic caused during peak hours has been undertaken where explanations and solutions have been proposed.



Figure 2: Workshops and training sessions in schools

Furthermore, 2 questionnaires were prepared (in 2018-2019 and in 2019-2020) for parents regarding students' accessibility to school. The aim of the questionnaires was to promote sustainable mobility modes and to give real information about the way students are going to school, such as the duration of their journeys, the reason for their chosen modes, their concerns regarding using cycling and walking to school, and an evaluation of solutions. The questionnaires were distributed to parents through the schools as a hard copy and a comparison was made in order to observe any changes regarding the mobility modes of students throughout the project.

For the implementation of LIM 3.3, the Police-Traffic Department supported the workshops. The presentations/workshops have been organised with the support and participation of the Parents' and Teachers' Associations of the schools involved. After visiting the Police Authority of Cyprus, information was retrieved regarding the number of accidents and explanations about the traffic jams caused by schools. After some observations from the Authority, it was concluded that during peak hours, the schools are contributing to traffic congestion. Additionally, the Authority informed that 21.1% of the most fatal accidents occur from 20.00-23.59, followed by 18.1% occurring between 16.00-19.59. Moreover, 16.05% of fatal accidents occur between 8.00 to 11.59, while 16% occur between 04.00-07.59, 13.9% between 12.00-15.59, and 14.3% between 00.00-03.59. It must be pointed out that these implemented activities cannot only be considered as activities for safety but also activities for changing the modal split. Tourists and residents will be encouraged to use sustainable mobility modes to explore the region according to their special interests.



Figure 3: Workshop's sessions in schools

C Impact evaluation

C1 Evaluation approach

Expected impacts and indicators

Impact category	Impact indicator	Unit of measure
Society	1- Awareness Level	%
Society	2- Number of involved schools	N°
Society	3- Number of informed students	N°
Society	4- Increase the sustainable mobility among students	%

Table 2: Expected impact and indicators

Method of measurement

Impact indicator	Method*	Frequency			Target Group	Domain (demonstration area/city)
		Bef.	Dur.	After		
1- Awareness Level	S	n.a	32	42	Students/schools/ teachers and parents' association	Demonstration area
2- Number of involved schools	DC	12-21	24-33	36-45	Students/schools/ teachers and parents' association	Demonstration area
3- Number of informed students	DC	12-21	24-33	36-45	Students/schools/ teachers and parents' association	Demonstration area
4- Increase the sustainable mobility among students	S	n.a	32	42	Students/schools/ teachers and parents' association	Demonstration area

*(Data collection (DC), Estimation (E), Survey (S))

Table 3: Method of measurement

Detailed description of the indicator methodologies

- **1 Awareness Level** - Questionnaire findings from the two questionnaires that the students' parents filled in were related to questions about students' accessibility to school. The aim of the questionnaire was to promote sustainable mobility modes and to give real information about the way students are going to school, such as the duration of their journeys, the reason

for their chosen modes, their concerns regarding using cycling and walking to school, and an evaluation of solutions.

- **2 Number of involved schools** - The data for this indicator were collected from the actual number of the schools that participated in the workshops and trainings sessions organized under the measure during the 3 school periods.
- **3 Number of informed students** - The data for this indicator were collected from the actual total number of students that participated and were informed on the workshops and trainings sessions during the 3 school periods.
- **4 Increase the sustainable mobility among students** - The students' parents filled in 2 questionnaires. The first questionnaire was answered in the academic period 2018-2019, and the second was answered in the academic period 2019-2020, for parents regarding students' accessibility to school. The aim of the questionnaires was to promote sustainable mobility modes and to give real information about the way students are going to school. A comparison was made between the answers of the two successive questionnaires in order to observe any changes regarding the mobility modes of students throughout the project. There were 170 participants in the first period and 300 in the second academic period.

The Business-as-Usual scenario

If the DESTINATIONS project would not have been implemented, the school community in Limassol would remain with limited knowledge of using sustainable mobility modes to go to/from school, and therefore students would lack the knowledge gained from the workshops and training sessions.

C2 Measure results

Impact category	Impact indicator	Unit of measure	Baseline	Ex-Ante	Ex-Post
Society	1- Awareness Level	%	0	40	100%
Society	2- Number of involved schools	Nº	0	10	46
Society	3- Number of informed students	Nº	0	500	2,449
Society	4- Increase the sustainable mobility among students	%	0	2	Limit private car: 21%, Increase carpooling: 25%, Limit use of bus: 2%, Walking to school: 4%.

Table 4: Measure results

C2.1 Society

1 Awareness Level

The survey aimed to understand the levels of awareness regarding the need for workshops at schools to educate students and parents on road safety and the use of sustainable mobility modes to commute to schools. The first survey revealed that the majority of students were using car as the most common mode of transportation to get to/from school, as it is considered the safest, quickest, and most convenient way to travel (according to the survey results). After the implementation of the workshops, the survey results altered, revealing that the car is not the only option for the students anymore. Additionally, all the parents from the participated schools were aware of the workshops and answered the questionnaires. In fact, the parents became so aware of the need for the safe travel of their kids to school that they concluded on a list of the most important measures that need to be addressed in order to increase safety levels:

- Wider sidewalks
- A bus organized by each school would be the ideal solution
- Better information regarding buses for timetable routes and stops
- Immediate inspection of roads and sidewalks within 2-3 Km around schools, to make improvement works, develop sidewalks where they do not exist, and remove obstacles
- Organization of a government bus as it exists for the Gymnasiums
- Each Municipality to which the school belongs could organize a bus only for the children from school
- Improvement of the road network
- Improve bus routes, especially in the countryside
- Make cycling a safe solution especially for students going to the schools in the city
- Develop bike lanes in the city
- Decrease the traffic in the area so children can go on foot / bike
- Develop a safe and ecological way of transferring kids to school
- Limit the large number of cars parked on the sidewalks
- Increase safety at pedestrian crossings
- Organize walking groups so students can walk to school with a guardian

2 Number of involved schools

In total, 46 schools have participated in the action, which is 36 more schools than were expected to participate. The schools showed a greater interest to participate as during the first academic period of 2017-2018, 13 schools expressed their willingness to participate in the workshops and training sessions. For the second academic period (2018-2019), 15 schools joined, and in the third academic period, 18 schools joined the activities.

3 Number of informed students

The number of students which have actively participated during the 3-years of workshops and training sessions reached 2,449 students.

4 Increase the sustainable mobility among students

According to the survey during the academic year 2018-2019, 77% of participants said that their child goes to/from school in their parent's car, 9% said that their child goes to/from school in a relative's car, 8% said that their child uses the bus, and only 6% said that their child walks to/from school. In comparison, during 2019-2020, the number of students who use a private car to get to/from school was **decreased to 57%**, those who use carpooling was increased to 33%, and those who walk to get to/from school was increased to 10%.

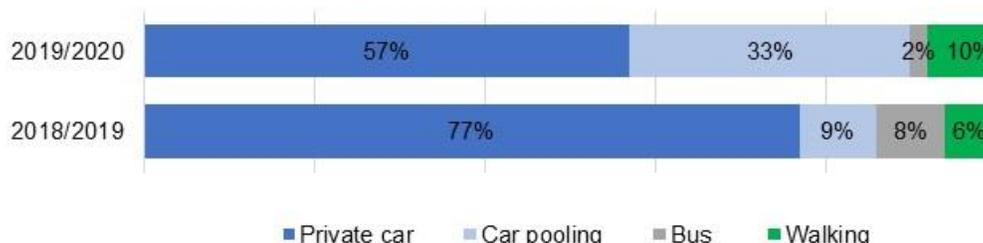


Figure 4: Modes of Transportation of students from/to school during 2018-2019 and 2019-2020

Therefore, in one-year, 21% of students stopped going to/from school by private car, the carpooling was increased to 25%, the use of bus was decreased to 2%, and students that are walking to school increase by 4%. It can be understood that the sustainable mobility among tourists has also been significantly increased.

C3 Quantifiable targets

No.	Target	Rating
1	Reduction of CO ₂ emissions: 118,698 tCO ₂	N/A
2	Reduction of traffic noise: 10 dB	N/A
3	Less fuel consumption: 21,900 L	N/A
4	Less fuel costs: 27,156 €	N/A
5	Reduction of energy consumption: 197.1 MWh	N/A
6	*Increase the awareness level of people by 50%	***
7	Increase the total share of citizens that use sustainable mobility modes	*
8	More attractive and safer roads	*
9	*Number of involved schools: 10	***
10	*Number of informed students: 500	***
11	*Increase the sustainable mobility among students: 2%	***
N/A = Not Assessed 0 = Not Achieved * = Substantially achieved (at least 50%) ** = Achieved in full *** = Exceeded		

*New targets, not in GA

Table 5: Measure results

Targets 1 to 5 were not assessed specifically under this measure, as it was not possible to monitor the reduction of fuel consumption, fuel costs, CO₂ emissions, energy consumption, and noise pollution related to the students that were educated in using sustainable modes/public transport as a result of the workshops and training sessions that took place in schools.

However, considering the adherence to the workshops and training sessions in the schools, it was understood that, indirectly, the measure also contributed to the common indicators related with CO₂ emissions, energy consumption, fuel consumption, fuel costs, and noise pollution, by making public transport and other sustainable options more attractive. Hence, it is considered that the results of these indicators were achieved through the implementation of a set of actions from several measures, namely LIM 3.4, LIM 7.1, and LIM 7.3.

Target 6 was Exceeded, as all the parents that have been questioned were aware and have accepted the workshops and training sessions. For this reason, they have participated and let their kids participate in the activities as well.

Target 9 was Exceeded, as the initial target was to include 10 primary schools to participate in this action, however the workshops and training sessions were implemented in 49 primary schools. In the same sense, Target 10 was also achieved as the initial target included the participation of 500 students, but by the end, a total of 2,449 students had participated in the 3 years of workshops and training sessions.

Target 11 was Exceeded, as by comparing the answers of the two successive questionnaires that parents answered in the two academic periods, it was understood that 21% of students stopped going to/from school by private car, carpooling was increased to 25%, the use of bus was decreased to 2%, and students walking to school increased by 4%. It seems that the workshops and training sessions affected the mobility of students in a positive way, and therefore a behavioural change has been seen within just one year.

Target 7 was not possible to be quantified but it is expected that it has been at least Substantially Achieved. It is expected that as Target 11, which refers to student's mobility, was Exceeded, Target 7, which refers to the mobility of citizens in general, was also achieved as students are also part of the citizens. However, the studied measure is dedicated to student's "safe" mobility and therefore the focus was to see the behavioural change of this target group and not the behavioural change of Limassol citizens.

Target 8 was also not possible to be quantified. However, it is expected that all the activities carried out under this measure and the interrelated measures (analyzed in section A2) implemented during the CIVITAS DESTINATIONS project made Limassol a more attractive and safer tourist destination. The measures added value to the city, as the education of this group of people (students, parents, and teachers) made them more aware of the appropriate way to move around the city and consequently minimize the risks of an accident. Additionally, this target group was educated in using sustainable mobility modes, which provide an overall improvement in air and noise pollution in Limassol city centre. It is expected that the new habits of citizens positions Limassol as a more appealing touristic destination.

C4 Up-scaling of results

Not applicable.

D Process Evaluation Findings

D1 Drivers

Cooperation with local schools was necessary as well as with the Parents Teachers Associations in order to ensure participation of parents and commitment to enhancing a change of behaviour. The cooperation with the police was also important in general, but this was a particular driver during the workshops. The most important driver was the need to improve and promote the more convenient, safe, and environmentally friendly movement of students/teachers/parents in schools.

D2 Barriers

It must be pointed out that at the beginning of the implementation the main barrier was the difficulty in gaining the necessary approval from the Ministry of Education and Culture in order to be able to implement the workshops in primary schools. Through efficient cooperation with already authorised organisations, the risk was addressed.

D3 Main Lessons learned

The main lesson learned was that it is necessary to improve the communication and interaction between the involved and concerned stakeholders. Additionally, successful modal shift towards sustainable mobility by students and teachers through workshops to each participating school increases safety during peak hours. In turn, this reduces accidents and increases sustainability awareness in children. Last but not least, young children's obesity could be minimized through this measure.

E Evaluation conclusions

Questionnaires have been successfully distributed to schools during 2018-2019 and 2019-2020, allowing a comparison to be made between them with the aim to observe any changes on the mobility behaviour of students.

F Additional information

F1 Appraisal of evaluation approach

Fortunately, this measure was not affected by COVID-19 and the evaluation of this measure was completed on time. All data and answers from the questionnaires for the academic year 2019-2020 have been analyzed.

Indicators 7 and 8 were not possible to be quantified but are expected to have been achieved, both due to the successful implementation of the other interrelated measures analyzed in section A2, and through the achievement of the rest of the indicators achieved in this examined measure.

Indicators 1 to 5 were not assessed specifically under this measure, as it was not possible to monitor the reduction of fuel consumption, fuel costs, CO₂ emissions, energy consumption, and noise pollution related to the workshops and training sessions held in schools to educate the school communities (students/schools/ teachers and parents' association). However, it is expected that these indicators have been achieved through the application of the other interrelated measures mentioned in section A2.

F2 Future activities relating to the measure

The local team will continue to undertake questionnaires in order to ensure the good mobility situation of the city.