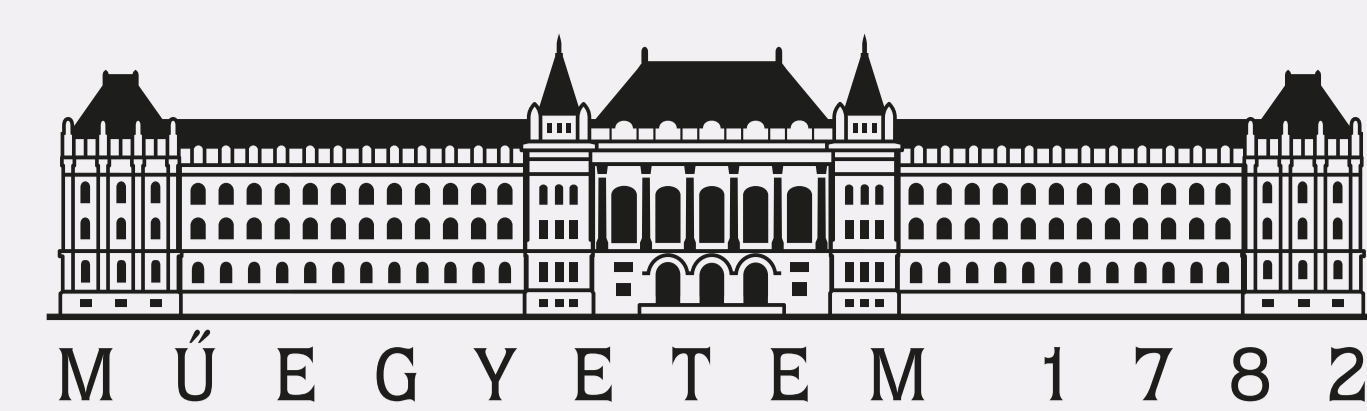


Citizen Science

at the Budapest University of Technology and Economics



Citizen Science Mission Statement

The university recognizes the importance of citizen science and intends to include citizens and local communities into its scientific research and development processes.

BME provides the means and develops strategic plans for this inclusion in order to make scientific research a joint action and responsibility with citizens. The university aims at democratizing the access to knowledge and tries to rely on the invaluable human resources that citizens can provide to collaborative research.

The pillars of BME Citizen Science

- Bringing scientific results closer to citizens
- Including citizens into Research and Development Projects (participatory sensing)
- Collaboration with the local community

Bringing science and its societal impacts closer to citizens

Open forums and lectures for citizens at the university addressing the key focal points of societal interest, e.g.

„Is nuclear technology safe?“

„What is quantum computing and informatics?“

„How AI will revolutionize industrial and social processes?“

„Intelligent manufacturing and Industry 4.0“

* To be launched in October 2022,
one lecture every 6 weeks

Contact: Dr. Bálint Molnár, molnar.balint@bme.hu,
Rector's Office, BME

BME Citizen Science in the area of participatory sensing

„Danube Hazard m³c“ InterReg project

Identifying how micropolluters permeate the environment.

Sampling the settling of humid atmosphere in various rural locations. Samples are taken in the gardens of volunteers and collected into special tanks distributed prior to the sampling. The samples are then collected by the university.

Contact: Dr. Tamás Krámer, kramer.tamas@epito.bme.hu,
Dept. of Hydraulic and Water Resources Engineering



Lake Balaton monitoring

Balaton monitoring project

Consortium: BME, Women for Balaton Society, Balaton Limnological Research Institute

Objectives: Citizens report on unusual environmental events on the lake (e.g. massive fish annihilation, pollution etc.). The report is submitted by uploading photos to a website run by the university, where further analysis takes place. If necessary an update is made on the whole data-base of the lake. The new data and the corresponding analysis are made public and an update is made on an ecological map of Lake Balaton.

Contact: Dr. Tamás Krámer, kramer.tamas@epito.bme.hu,
Dept. of Hydraulic and Water Resources Engineering

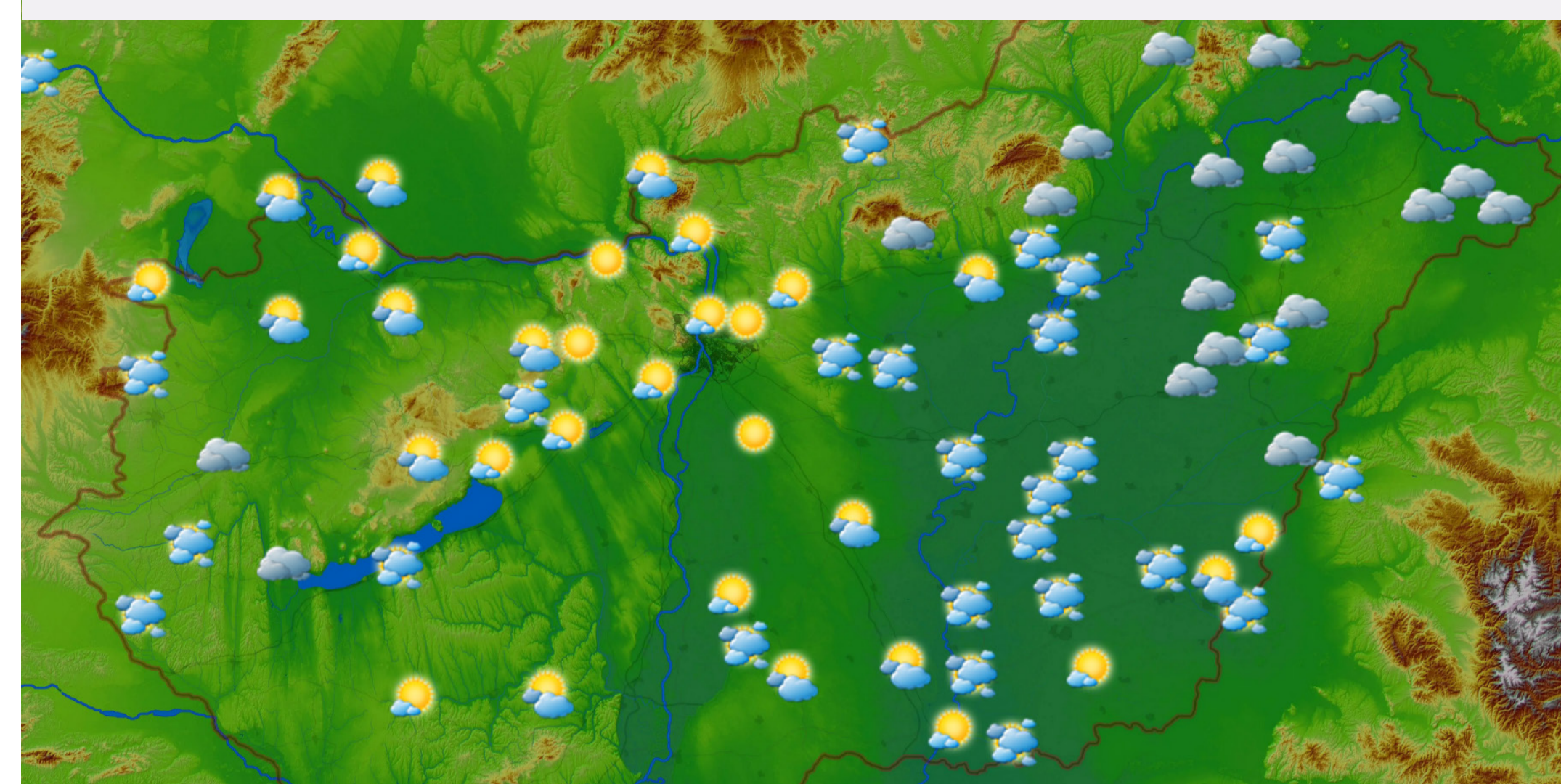


Danube Hazard project

In the framework of Danube Hazard (DTP) project we modeled water flows resulted by heavy rainfalls. The different data related to rain are reported by citizens and further data are available from the sampling places of idokép.hu. The obtained data is linked into the Ubidots online data transmission system via which distant monitoring becomes possible and the water flows resulted by the rain can then be modeled.

An important aspect of this project is to evaluate how much the capacity of the water drainage system is in match with the water flows. If this evaluation takes place in real-time then one can prevent severe floods hitting the rainy regions.

Contact: Dr. Tamás Krámer, kramer.tamas@epito.bme.hu,
Dept. of Hydraulic and Water Resources Engineering



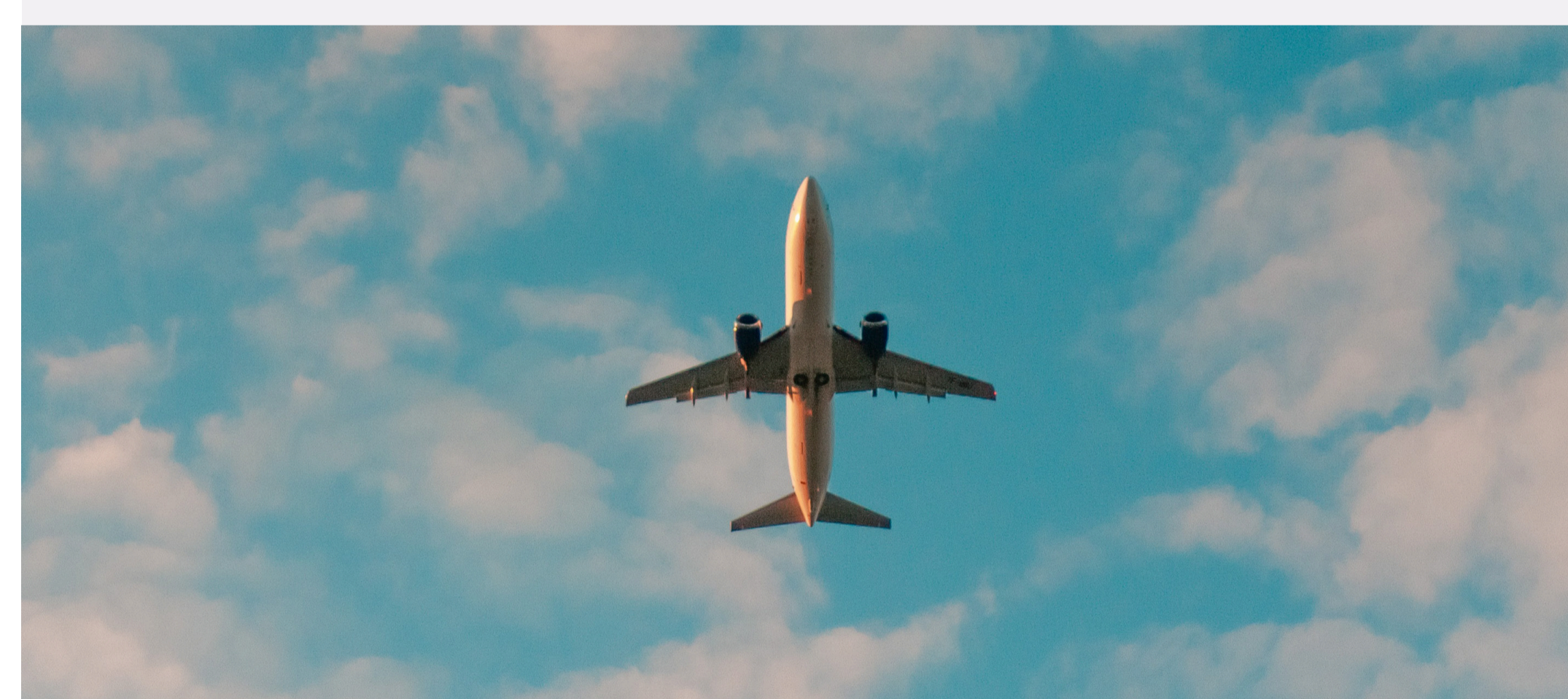
Aiport noise pollution measurements

The objective of project ANIMA (carried out in the framework H2020) was to get a deeper understanding of the effect of aircraft noise on citizens. It also aimed at developing novel techniques which can make noise pollution less unbearable for citizens. The project has been carried out by the help of the people living in close proximity of airports in Hungary and in Slovenia.

We requested the help of citizens in the following points:

1. Communicating with focus groups for identifying the major factors of discomfort with noise (e.g. strength, timing ...etc.)
2. Quality evaluation of the suggested countermeasures
3. Reporting the level of discomfort via a designated mobile application several times a day
4. Participating in experiments to test the effects of noise, i.e. by the help of Virtual Reality different noise effects have been produced as if one standing in his/her own garden. The tool and the quality of modeling have been validated by the citizens and it can later be used when designing airport layouts

Contact: Dr. Ferenc Márki, marki.ferenc@vik.bme.hu,
Dept. of Networked Systems and Services



Green food consumption habits

The objective of the project is to get a better understanding of the green food purchase characteristics of the citizens and their underlying motives regarding green food consumption.

Citizens are requested to fill in forms of questionnaire, the survey and the answers are processed by the university.

Results are expected by spring 2023.

Contact: Dr. Gyula Zilahy, zilahy.gyula@gtk.bme.hu,
Dept. of Environmental Economics and Sustainability



Enhancing climate innovation mindset in the education system of CEE

The project EduRes - Enhancing climate innovation mindset in the education system of CEE is carried out in collaboration with

University of Warsaw (lead partner)

Climate-KIC Kft.

Climate-KIC sp. Z.o.o.

Technical University of Kosice

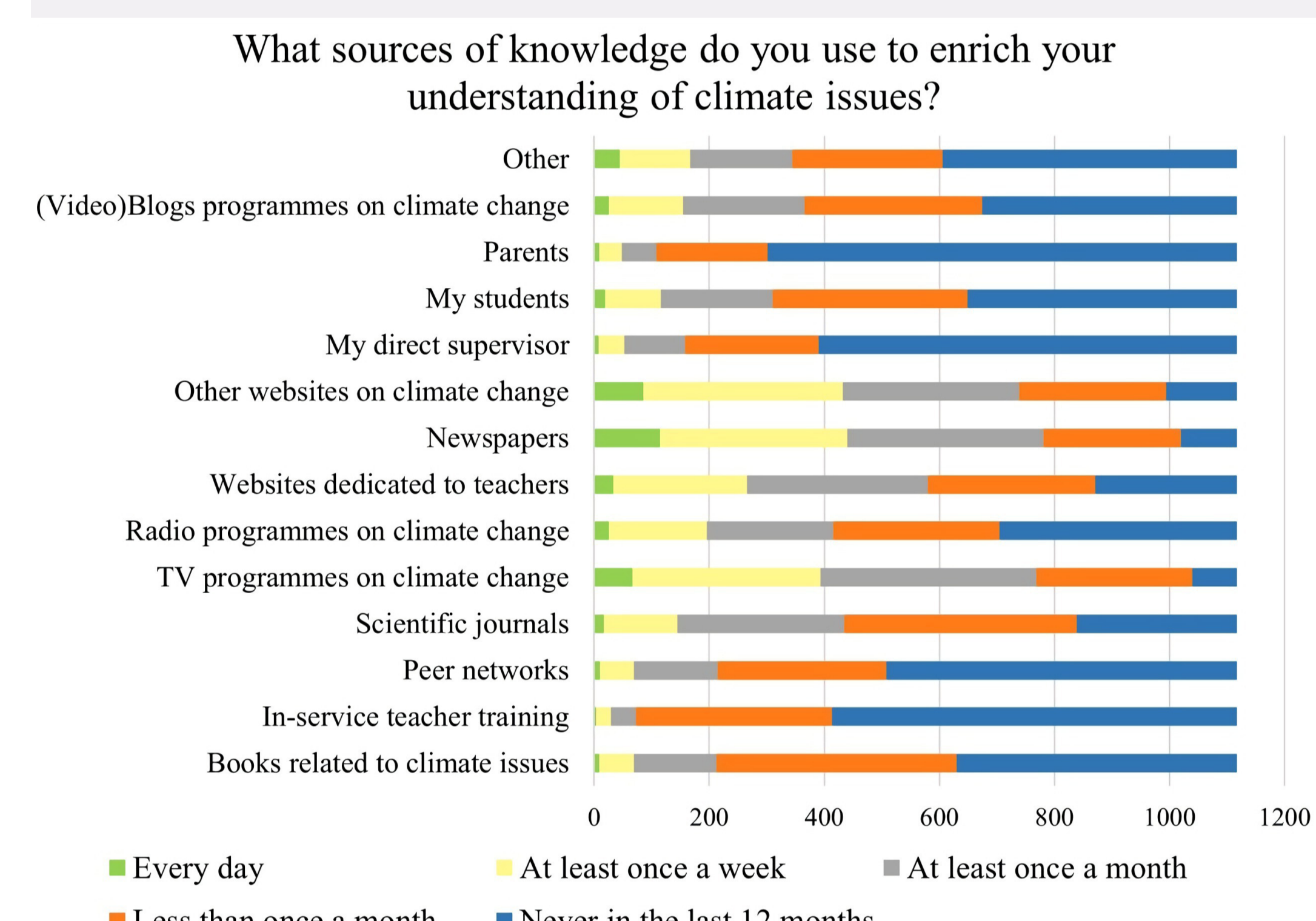
BME Department of Environmental Economics and Sustainability

The objective is to equip students in Central and Eastern Europe at primary, secondary and tertiary levels with the creativity and innovative thinking needed to tackle the challenging problem of climate change. The main challenge of the project is how to effectively develop creativity and focus on environmental education within existing frameworks and curricula. To achieve this, we aim to develop and implement sustainable practices and approaches to environmental education in selected schools and universities. By the end of the 3-year project, pilot recommendations will be available to enhance climate innovation in the education systems of the V4 countries.

It is implemented by conducting surveys among the secondary and primary schools in the V4 countries.

Its significance is that it can increase student awareness of climate changes and SDGs. It can identify the gaps, obstacles teachers face when trying to improve their teaching skills in environmental education, and the students' skills when it comes to creativity.

Contact: Dr. Mária Csete, csete.maria@gtk.bme.hu,
Dept. of Environmental Economics and Sustainability



Future plans

Temperature polling

A mobile application is going to be developed by which the temperature can be polled at different locations and the users can also indicate their comfort with the temperature. It may help to minimize overcooling in summer or overheating in winter.

Contact: Dr. Kristóf Csorba, csorba.kristof@vik.bme.hu,
Dept. of Automation and Applied Informatics



Mobile network quality measurements

An application is downloaded by volunteers which performs quality measurements on the mobile network a regular basis (ping delays, up- and download speed etc.). The measurements are stored in a data base and they can be used for network optimization.

Contact: Dr. Péter Ekler, ekler.peter@vik.bme.hu,
Dept. of Automation and Applied Informatics



Budapest University of Technology and Economics

ADDRESS
Műegyetem rakpart 3.
H-1111 Budapest, Hungary

FURTHER INFORMATION
www.bme.hu/en