

EPA Network / EEA Citizen Science Initiative CleanAir@School

Face-to-face meeting in Zürich, 22-23 May 2019

Participants:

Hester Volten, RIVM
 Anthony Roberts, Natural Resources Wales
 Stefano Micela, ERA
 Patrick Kenny, Irish EPA
 Leo McKittrick, Irish EPA
 Graham Applegate, SEPA
 Colin Gillespie, SEPA
 Helen Heintalu, Estonian EPA
 Alberto Campos, Spanish
 Mario Gregorio Piuri, Agenzia Regionale Lombardia
 Luca Demicheli, ISPRA
 Nicolas Perritaz, FOEN
 Janine Hunziker, FOEN
 Gabriella Zinke, FOEN
 Chiara Bolognini, ISPRA (2nd day)
 Anke Lukewille, EEA
 Mari Erlandsen, EPA Network Secretariat
 Jose Rubio Iglesias, EEA

1. Action points and the way forward

Action points	Lead on action	Time schedule
Measurement and other results already <u>available for several schools need to be shared with EEA</u> (please see respective templates)	EPAs	End of July
Privacy issues have to be clarified, e.g. with respect to the use of locations and names of schools in the CleanAir@School viewer, which is embedded in the respective EEA website	EPAs concerned	End of July
	EEA (related to the GDPR in general)	Mid-July
Common measurement campaign needs to be organized within the “time window” defined for September to November 2019	EPAs	End of August
Provide links to relevant (EPA, school) websites that can be linked to the EEA CleanAir@School website	EPAs	End of August
Draft a progress report that will be presented at the EPA network plenary in Tallinn in September 2019	EEA & EPAs	End of August
<u>Communication on the European level</u> : Consider how the EEA CleanAir@School website could also address the “school	EEA	Early September

audience" (see suggestions under Communicating CleanAir@School above)		
Plan the next face-to-face meeting in autumn/winter 2019 at EEA in Copenhagen	EEA	Mid-September
Provide an assessment of the campaigns, including behavioral issues, poster competitions etc. and forward it to EEA	EPAs	As soon as available
Check if CleanAir@School can present results at the Clean Air Forum in Slovakia in November 2019 and if yes, how.	EEA	ASAP
Investigate how Twitter could be used as a channel for communicating within the project, i.e. offer the opportunity for children to interact with each other within CleanAir@School	EPAs	ASAP
	EEA (as far as feasible)	ASAP
Establish an interactive, live platform where CleanAir@School participants can communicate with each other and that could spark engagement and make use of the fact that several European countries and schools are a part of the same project. <i>We still need concrete suggestions on how such a platform could be introduced.</i>	EPAs?	ASAP
	EEA??	ASAP
Compile a synthesis of all EPA results and activities performed, and draft common messages and lessons learnt	EEA	December 2019/January 2020

2. Minutes

The meeting started with a warm welcome and housekeeping information provided by Gabriella. Anke expressed EEA's gratitude to the Swiss Federal Office for the Environment (FOEN), which was so kind to host the meeting in Zürich. She welcomed the participants, who shortly introduced themselves during a tour-de-table.

Eight countries are still actively participating in CleanAir@School (Estonia, Belgium, Ireland, Italy, Malta, The Netherlands, Spain, United Kingdom (Scotland and Wales), three countries are observers (Austria, Iceland and Switzerland).

2.1 Update by EEA

Anke gave an update on EEA activities related to the CleanAir@School initiative.

- EEA sent an update on the project status the Heads of EPAs in the EPA network in late April 2019.
- EEA sent three simplified reporting templates to participating EPAs with the request to fill them in and send them back to EEA.
- EEA developed a test viewer, which allows showing the location of the involved schools and/or the measurement sites on a European-wide map. The viewer can link to Google Maps and Google Satellite: <https://www.eea.europa.eu/themes/air/cleanair-at-school/clean-air-at-school>.
- EEA has developed a CleanAir@School webpage, which was launched on 28 May 2019: <https://www.eea.europa.eu/themes/air/cleanair-at-school/cleanair-at-school>. The test viewer is embedded in this website.

- After the meeting: EEA was organizer of a session on 'Engaging citizens in monitoring urban air pollution' during the 2019 Ecsite Conference in Copenhagen, 6th of June 2019, where inter alia the CleanAir@School initiative presented:

<https://www.ecsite.eu/annual-conference/programme/engaging-citizens-monitoring-urban-air-pollution>.

Ecsite was founded in 1989 by 23 organizations from the young European science centres scene. Today it gathers more than 350 organizations committed to inspiring people with science and technology and enabling dialogue between science and society.

2.2 Updates from the EPAs

Hester Volten, Rijksinstituut voor Volksgezondheid (RIVM), The Netherlands

RIVM started with a CleanAir@School project recently, at a school in Zwolle (10 locations, 20 tubes). 3 schools will follow. Tubes were sent out in a box and the schools set them up themselves. For communication purposes, the RIVM have used illustrations developed for the from the Curious noses project in Flanders (Belgium) and The Globe Program (2019) Air Quality Investigation where the Irish EPA is involved. RIVM handed out the short 'before' questionnaire to the children that had been developed as common basis for all EPAs. RIVM had translated the questionnaire into Dutch.

One of the main questions is if other schools can realize the project without the help of RIVM. RIVM also wants to offer the CleanAir@School approach to local governments, but needs to investigate if they can approach schools directly or if cities will need to be contacted first. RIVM is also considering twinning of schools.

Surveys: RIVM plan analyzing the 'before-after' surveys. RIVM informed the group that they have faced privacy issues related to video recordings of pupils, they had to ask parents for permissions.

Funding: As part of a consortium, RIVM plans to apply for Horizon 2020 funds. For different reasons, EEA cannot be partner in such projects as of now. EPA Ireland shared that their projects have gained so much attention and engagement that actors are now more inclined to expand and fund projects themselves.

SEPA, Ireland and Wales shared positive experiences from linking with organizations that already have established links to schools.

Later during the meeting, Hester presented the "Lufta er for alle" project led by the Norwegian Institute for Air Research (NILU). The project uses a simple method of sticking Vaseline to a paper to collect particulate matter (PM). PM dots are then counted and the results are placed on an air quality scale from good to very bad, where the ranges are represented by funny smiles. The pupils produce the results themselves. It is not a scientific measurement method but very good for engaging school pupils. The data is presented on a Norwegian website open for all European countries. Countries are encouraged to repeat the little project and enter their results.

Anthony Roberts, Natural Resources Wales (NRW), United Kingdom

Tom presented their project, which is run by NRW and the Cardiff Shared Regulatory Services (SRS).

Wales will adapt the surveys 'templates' refined by RIVM because it is challenging to get results from children.

20 schools have been targeted for one year (March 2019 to March 2020), using passive tubes for measuring NO₂. The three main goals of the project are to (1) raise awareness, to (2) educate and (3) to foster behavioral change.

NRW wales reached out to the NGO Clients of the Earth and SUSTRAINS, the latter a charity on sustainable transport, which have contributed with useful experiences related to pushing behavioral change. NRW also discussed with the government (of Wales), involving them in the pilot, and hoping this will help for organizing future projects easier.

NRW has tested a portable personal PM monitor and the preliminary results are quite surprising, i.e. showing high measurement results. Anke informed that EEA is preparing a report on low cost measurement devices and their possible use and their limitations. The draft report will be shared with the group.

However, focus of the NRW project is on NO₂ measurements with diffusion tubes, relying on technical guidelines from Defra. NRW has experienced great variety in costs when involving consultants, and they advise EPAs to do as much as possible themselves.

NRW emphasizes especially the advantages of establishing partnerships with other organizations, developing shared goals and rationalize actions. Many similar projects exist already, and there are great benefits in sharing experiences. Comparisons of the school measurement packs of participating schools should also be considered. NRW wants to embed the latest health and education strategies into the school curriculum. NRW will also discuss with the Welsh government if it is possible to embed a commitment to involve Citizen Science initiatives in the new Clean Air Plan for Wales.

[Stefano Micela, Environment and Resources Authority \(ERA\), Malta](#)

The Maltese "Fair with Air" project used the school vacation period of August/September 2018 for reference measurements (little traffic around schools). The ERA did the measurements themselves. The results of those measurements serve as 'baseline' for monitoring during the school year in 2019. "Fair with Air" is also part of the CleanAir@School initiative. Supported by the Ministry of Education, 25 of the 48 schools that had participated in the pilot were then selected. Monitoring and analyses will be finished in June 2019 and a closing conference with stakeholders will take place in November 2019.

ERA has developed a map showing the 25 schools (both involved in summer 2018 and spring 2019 measurements). The 25 schools were selected considering the environment of schools (urban/rural) and the age of the children.

Air quality experts helped with the set up the passive NO₂ samplers. A questionnaire based on the Curious Noses project was distributed. Most answers were received from parents. Stefano raised the question if the 'after' questionnaire should be distributed before or after the results of the measurements are communicated. Most participants suggested waiting for the measurement results.

The project has produced a promotional video and a video explaining the monitoring approach. Two minutes for an animated video cost approximately 3000 Euros, and it took about one month to produce

it. The project has received a lot of media coverage and the results are shown in art installations. “Fair with Air” was also represented during Green Week in May.

Leo McKittrick, Irish Environmental Protection Agency

Globe Air Quality Investigation, a partnership between the Irish EPA and An Taisce (The National Trust for Ireland) and Globe link to the CleanAir@School initiative. Kicked off in January 2019, information packs were sent to pupils of different ages. An Taisce tested the NO₂ measurement tubes with staff first. In February 2019, measurements were carried out at schools, An Taisce and the Irish EPA visited schools to raise awareness about related environmental issues.

A map provides information on the measurement results. Names of schools cannot be communicated and precise latitude and longitude information (for example for the EEA viewer) cannot yet be provided due to not clarified privacy issues – this issue will be discussed with the schools involved. Monthly values are provided. Statistics based on the characteristics of the schools (rural/urban) can also be viewed.

During the discussion, RIVM shared experiences with hiding the locations of people’s houses. SEPA explained how they normalized the data, therefore schools could not be directly compared to others, in order to avoid a “worst school”-ranking. Curious Noses had made a video explaining variations that nuanced the value of such rankings. However, uncertainty remains about the question of how much the media will respect these nuances. NGOs have shown interest in the CleanAir@School results. CleanAir@School needs to be mindful of how measurement results are communicated.

It was suggested that the General Data Protection Regulation (GDPR) should be the basis for a common approach regarding privacy issues. In general, there are important issues that need to be considered when using citizen science approaches in the future (Citizen Science and EU Commission Fitness check).

34 schools were involved in Ireland during the 2019 Spring campaign, and three tubes per school have been placed (usually next to the school entrance and the car park). 12 schools reported their study in a poster format. The highest valid measurement results have been recorded at schools in Dublin and Monaghan. All are locations with a lot of traffic and many traffic stops (e.g. at traffic lights). A school located in a valley, that are also close to heavy traffic, also measured relatively poor air quality.

Schools reported and presented the results in May 2019 at a national GLOBE event. A school was nominated to present their project at the 2019 GLOBE Annual meeting (Detroit, U.S.A.), while presentations by other Irish schools are being explored for an Irish national air conference in October 2019.

To date, the GLOBE Air Quality campaign has been delivered in tandem with the EPA’s regional (office) presence, while an internal (EPA) video has been produced which highlights its success further with staff.

Colin Gillespie, Scottish Environment Protection Agency (SEPA), United Kingdom

SEPA has two approaches to address air quality in its citizen science initiative, (1) a banner competition and (2) monitoring air quality at schools. SEPA has teamed up with local authorities and environment officers.

Several schools are already participating, i.e. in Edinburgh, Glasgow and Dundee.

The banner competition is meant to raise awareness regarding air quality issues. Three banners were chosen and will be (were) presented during the Scottish Clean Air Day on 20 June 2019.

Sensors are used for NO₂ measurements, and the project is less interested in absolute concentrations, but in peaks in NO₂ concentration measured when parents drop off or pick up their children.

Sensors were also placed in another school area (primary, secondary and nursery) with a large bus stop close to where the children are passing. The busses used to transport children to and from school turned out to be below the Euro 3 standard. Results showed peaks in the morning and afternoon when school buses were arriving and leaving and smaller peaks corresponded exactly with the timetable of the buses. Results show that engine idle played a big role, because in the afternoon vehicles are waiting for the children with the engine running. The city Council is in charge of the buses, and it was encouraged to look into possible solutions such as promoting biking. A third and fourth example with the same 'peak' results resulted in organizing a mobility campaign.

One school succeeded in closing a street for vehicle traffic. The Clean Air day in June 2019 will be (was) an important occasion to communicate the project and its results. Anyone can join with their Citizen Science projects in the European version of the day (focus of monitoring) as a way of creating engagement. This initiative was carried out as part of the H2020 'Doing It Together Science' (DITOs) Coordination and Support Action project. Edinburgh is shutting a street down and bringing in Euro 6 busses to promote the day. Last year children demonstrated against poor air quality and received a lot of media coverage.

Using creativity and arts has also been successful in Ireland. Artwork brings awareness to the air quality issue. The Scottish campaign is adapted to the age and level of knowledge of the participants.

[Helen Heintalu, Estonian Environment Agency](#)

Due to the maternity leave of the participating Estonian colleague the project is slightly postponed. Measurements are expected to start in mid- September 2019 lasting for four weeks. Secondary schools (age 13-14) will participate, the choice will soon be communicated to EEA. NO₂ passive samplers will be used.

The group discussed that September to November is a good time window for running a harmonized campaign where several EPAs join in.

During the discussion it was suggested that an interactive, live platform where CleanAir@School participants can communicate with each other could spark engagement and make use of the fact that several European countries and schools are a part of the same project. We still need concrete suggestions on how such a platform could be introduced.

In the Swiss context, measuring in winter would make the results more relevant in terms of complementing official air quality data. However, during the project planning the group decided to focus on air pollution around schools, with link to mobility issues.

Alberto Campos, Spanish Ministry for Ecological Transition

On the second day, Alberto started by presenting their project on Girona, Spain Schools with the “Green school’s certificates” were chosen and 10-12 schools are involved. Measurements will start in September 2019 and will finish in December 2019.

Each school measures at 15-20 locations around the schools, using NO₂ passive samplers. The ministry has defined some minimum locations (main school entrance, playground, traffic and background locations; one location inside). A pilot study has already been successfully finalised, where different ways of transport to schools and the respective air quality were in the focus.

The final collection of data will happen on 20 November 2019 and results will be presented in December (a condition related to funding). The ministry will attempt to collect more funds next year and perhaps repeat the project in other larger Spanish cities (more affected by air quality problems than Girona). A survey, linked to the one suggested by RIVM, will be used to gather information about behavioral change.

4sfera, the consultant working for ministry, has communicated directly with the city of Gerona. Alberto was asked to share the results from the pilot study with the CleanAir@School participants.

The questionnaire suggested by RIVM has been translated into Spanish.

Luca Demicheli (ISPRA), and Mario Piuri (Agenzia Regionale Lombardia), Italy

ISPRA has the ambition to have a broad participation in a project that covers the entire country. This requires quite an effort in terms of coordination. The project is now reaching out to cities, still awaiting a grant from the Ministry of Environment and a designated logo for the project. The project is run as a communications project, several working groups involved. First measurements start in November 2019, two monitoring tubes set up at each school.

Discussions focused on the framing of the CleanAir@School project, providing a harmonized logo and branding as well as commitments of the EEA on the communication side (project website and a test map viewer have already been published).

3. Communicating CleanAir@School

The participants of the meeting discussed the text and set up of the CleanAir@School website, which has meanwhile been launched.

There was agreement during the discussion that information directed more towards schools, i.e. with focus on ‘school audience’ should be added. It was suggested that CleanAir@School should also publish information that engages school pupils on the website (using pictures, more engaging visuals and layout). There was agreement that it would be great to use communication elements already used by the different EPAs. Discussion with EEA’s communication experts will clarify how far this is feasible.

Further, participants suggested the project/website should gather best practice examples. The group also discussed how traffic security aspect should be mentioned whenever we are making suggestions about behavioral change.

A challenge is to present the results so that they are relevant and understandable, also for schools. Participants suggested highlighting the entire country as well as the participating cities in the map viewer. This has to be further discussed between EEA and the EPAs.

Data should be made available in a transparent way and they should be explained thoroughly to avoid misunderstandings and misconceptions. However, for the participants, school engagement and awareness raising is at the heart of the project. The CleanAir@School website and/or the viewer should link to the individual country projects offering the possibility to drill down and look at results provided by the single EPAs. Participants suggested that the EEA CleanAir@School website presents for example (also) posters (instead of graphs with data only).

CleanAir@School could also have one main video (see the example of Malta) that countries can use to inform about the project. This could include the logos of participating EPAs. Further, it was suggested that EEA could organize a poster competition for the participating schools. The Clean Air Forum in Slovenia in November could be a good opportunity for invited (by DG Environment?) pupils to present winning posters.

EEA plans publishing a briefing on CleanAir@School, launched in September before the EPA network plenary in Tallinn. Participants suggest addressing all relevant audiences in this briefing.

It was highlighted that one lesson learnt by the participating EPAs is that projects with citizens as target groups can be challenging for organizations that are used to communicate with more traditional target groups and stakeholders. CleanAir@School could take advantage of the media attention around the air quality issue and the media coverage that children and competition/prizes usually get.

Participants further suggested capitalizing on the fact that CleanAir@School is a shared European project when communicating: "This is currently happening all over Europe".