



CAPTOR

Collective Awareness Platform for Tropospheric Ozone Pollution

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List of Abbreviations

APP	Application
ARPA	Regional Environmental Protection Agency in Italy
CAP	Collective Awareness Platform
NGOs	Non-governmental organization
MDC	Citizen's Defense Movement (Italian NGO)
NMS	New Medium School (in Austria)

Executive Summary

Description of the work

This report presents the results of “*citizen engagement*” for the year 2017, with a specific focus on the national **empowerment strategies and activities achieved** in the three testbed areas in Spain, Italy and Austria.

“**Monitoring campaign**” and “**citizen science**” are the key words of this deliverable.

Objectives

The main objectives of the deliverable are:

- Describe the “general” citizen engagement strategy, actions and empowerment during the second year of the project.
- Show the “particular” citizen engagement performed in the Spanish, Austrian and Italian testbeds during 2017 summer campaign.

Main highlights

2 Captor partners meeting to define activities for the 2017

60 instruments deployed during the summer campaign

More than 150 volunteers contacted for the 2017 summer campaign

More than 100 download of the App “CaptorAir”

6 schools involved in testbed areas

2 articles written for scientific magazine

15 participations at conference/exhibition/workshop in the testbed areas

14 actions done to promote the awareness about ozone pollution in the testbed areas

1. Introduction

The CAPTOR project addresses the general **air pollution problem**, which will be depicted by monitoring specifically the **tropospheric ozone**.

Together with researchers and European citizens, CAPTOR aims to install and maintain a network of low-costs sensors for Ozone measurement with and for European citizens and foster a bottom-up collaboration of local communities, citizens, NGOs, and scientists to raise awareness and find solutions to the air pollution problem.

In the first year of the project (2016) more attention was given to the development of the instruments and the quality of the data.

Achieved these results, in the second year of the project (2017) more attention was given to the development of the mobile App, the CAP's (Collective Awareness Platform) and the citizen science process.

This report, edited at the end of the second year of the project, will be focused on:

- a) The consolidation and the empowerment in 2017 of the citizens network built during the first year of the project;
- b) The call for volunteers and the selection of volunteers for the 2017 summer campaign in Italy and Austria and;
- c) The importance of the data obtained during the 2017 summer campaign to empower and engage the local communities.

2. Citizen engagement report – year 2017

At the end of the first project year (2016) the purpose for 2017 was to “*build a neat of spread monitoring campaigns in the three countries, with reliable instruments and a heterogeneous network of local communities involved*”¹.

To realize these objectives, during the second “general assembly” of Captor on February 2017 in Vienna, the consortium partners jointly designed the strategy to use in 2017 in all the testbed regions, with a specific focus on:

- realization of the summer campaign in all testbed areas
- realization of all the nodes necessary to cover sufficiently the selected areas
- realization of the main tools of the project for people involvement (CAP’s, Mobile App) that are connected with the visualization and success of the monitoring campaign
- involvement of the local environmental agencies in the calibration of the instruments pre- and post- campaign to compare the reliability of the data
- involvement and empowerment of the citizens of the testbed areas in the monitoring rules (host, observers)



Figure 1: second Captor meeting in Vienna, February 2017

All of these objectives were achieved on time for the summer 2017.

After the first experience of the past year, most of the volunteers from the Spanish testbed in the previous campaign confirmed to take part again for 2017. With the initial interest given in the affected area, the local partner was working, during the winter and spring period, to maintain and grow up the network created (like the Air Quality Platform network, the main alliance for the project implementation in Spain). Italian and Austrian partners put in place an *intensive and widespread* involvement of volunteers in the affected areas, preparing and disseminating a *call for volunteers* in the spring period.

¹ Conclusion of the deliverable 4.2 at the end of the first year of the project

All the partners worked hard to have before the summer (May 2017) all the instruments and technical part ready to be tested in the “training session” meeting, which took place in the first week of May 2017 in Barcelona.

Between June and July 2017, the official monitoring campaigns started in the testbed areas in all the three countries (Austria, Italy and Spain).

In total, the NGOs partners deployed 60 instruments (35 Captors and 25 Raptors) at appropriate spaces provided by volunteers, local municipalities, and at the official reference stations (to realize the calibration of the nodes before and after the monitoring campaign).

CaptorAir, the mobile App developed by the project to show the data of the nodes in real time, started to be on the Google Play store at the end of July. Specific dissemination activities about the app was done to involve people in using it for checking the data of the CAPTOR monitoring instruments in their countries. More than 100 downloads are registered from the store at the moment of writing (Dec 2017). At Mid-September, with the ending of the summer monitoring campaign, the app stopped to transmit data.

The CAP’s (Collective Awareness Platform) was launched at the same time in each country and the first “air stories” from the testbed areas (stories from citizens and community that show how people fight air pollution) and news about air pollution and ozone pollution were uploaded in the second part of the year (June - December 2017).

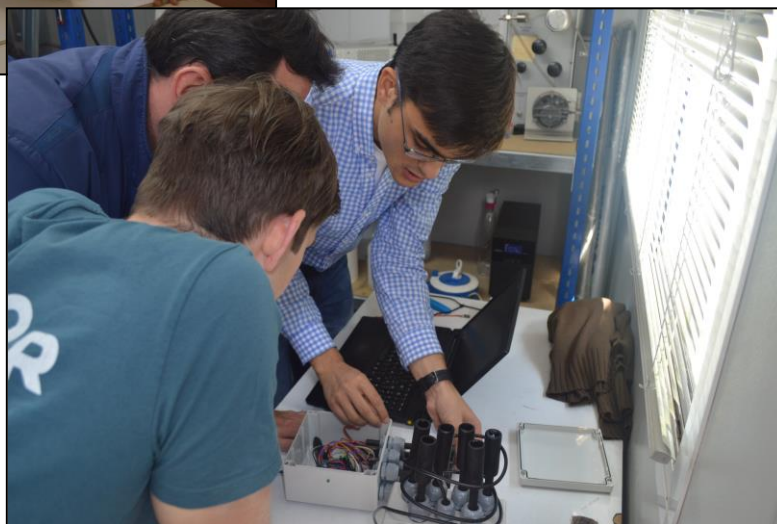


Figure 2 (a, b): Captor “training session” meeting in Barcelona (May 2017)

CONSULTA L'OZÓ QUE RESPIRES I ACTUA!

CAPTOR AIR

Els sensors CAPTOR mesuren la contaminació per ozó troposfèric en tres regions europees diferents durant els períodes de primavera i estiu, època en què s'assoleixen les màximes concentracions

CAPTORAIR OFEREIX DADES EN TEMPS REAL SOBRE CONCENTRACIONS D'OZÓ TROPOSFÈRIC

CAMPANYA CIUTADANA DE MESURAMENT DE L'OZÓ

captorAIR utilitza les dades dels dispositius CAPTOR, que són sensors de baix cost instal·lats a cases de voluntaris i voluntàries. Cerca la teva comarca i troba les concentracions d'ozó troposfèric.

<p>CATALUNYA Barcelonès Maresme Vallès Osona</p>	<p>ITALIA Piemonte Lombardia Veneto Emilia Romagna</p>	<p>ÀUSTRIA Niederösterreich Burgenland Steiermark</p>
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ACTUA A LA TEVA LOCALITAT



Comparteix les dades actualitzades d'ozó a Twitter i Facebook.



Explica les teves preocupacions i històries als altres ciutadans afectats.



Uneix-te a les campanyes d'Ecologistes en Acció per millorar la qualitat de l'aire.



-  Per tal de garantir la seva comparabilitat amb instruments de referència, els dispositius CAPTOR han estat prèviament calibrats per comparació amb les dades de les xarxes locals de qualitat de l'aire de la instrumentació de referència de la UE.
-  Les dades que generen els sensors s'han de considerar només informatives i no es poden utilitzar per a finalitats de compliment normatiu.
-  captorAIR mostra la teva exposició a la contaminació d'ozó i proporciona oportunitats per compartir dades de qualitat de l'aire en la teva localitat.
-  captorAIR és de programari lliure i completament gratuïta!

ENTRA A CAPTORAIR.ORG PER ACCEDIR A LES DADES O BAIXA'T LA NOSTRA APP DES DE GOOGLE PLAY

captorAIR és una aplicació desenvolupada pel projecte CAPTOR sobre la contaminació per ozó a Europa



Aquest projecte ha rebut finançament del Programa Horitzo 2020 de la Unió Europea sota l'acord de subvenció no. 888119

Estigues informat: captor-project.eu
 Segueix-nos a: [@captor_air](https://twitter.com/captor_air)

Figure 3: CaptorAir leaflet (Catalan version) for the summer campaign 2017

2.1 Captor engagement in Spain – year 2017

Ecologistas en Acción began his ozone campaign in 2017 with two objectives: 1) to raise awareness among the population about the ozone problem and 2) to contribute to their solution and claim for the administrations effective plans to combat this pollutant.

All activities were carried out with the main network of allies of the project, the “*Plataforma per la Qualitat de l'Aire*” which is coordinated by Ecologistas en Acción.

The key words for Spanish engagement were **Networking and Action**.

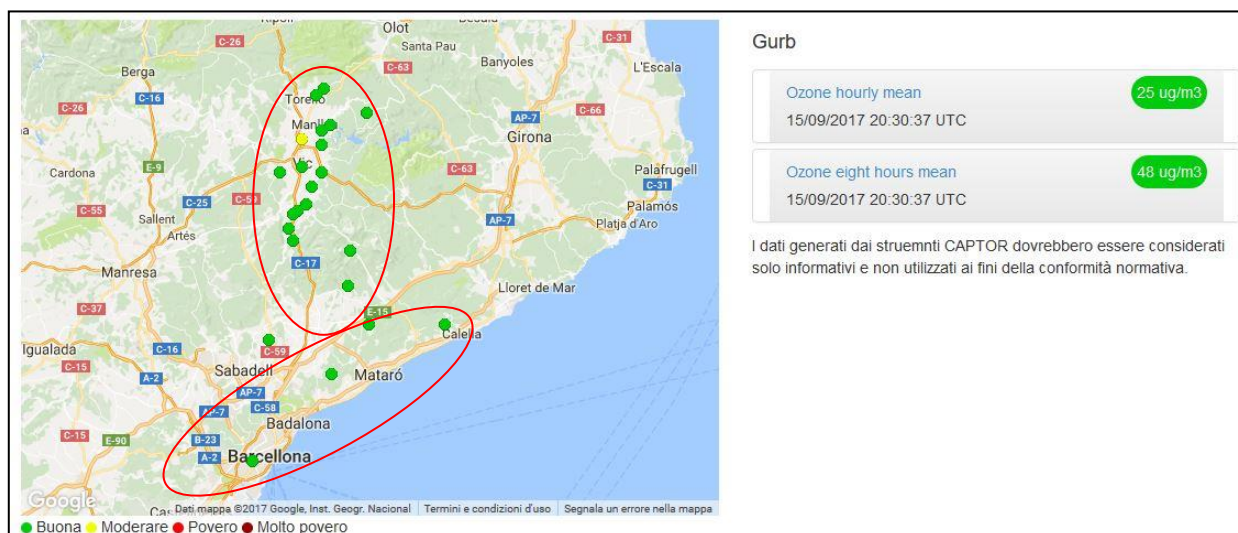


Figure 4: Captor testbed areas in Spain, from the mobile App “CaptorAir”

Citizens Empowerment

The NGO’s network “*Plataforma per la Qualitat de l'Aire*” continued to promote activities and the involvement of citizens in air pollution topic in the captor testbed area, following the strategy planned the previous year.

The ozone measurement campaign developed by the second year in Spain counted with the participation of 20 volunteers, 19 of which have been volunteers who participated also during the first campaign of 2016 and a new one was selected from the candidates of the first call of the project in 2016.

The interest and attention created the last year were confirmed also during the second campaign, not only from the media but also from the local authorities.

In Spain, in 2017 people got a satisfying level of empowerment concerning air pollution topic due to the fact that this summer the project tools foreseen for the engagement, such as the mobile app, were launched and ready to use for hosts and observers in local area.

In this way citizens had the possibility to follow the values of the nodes in real time and also news and initiatives and events related to the project were promptly communicated to volunteers and to the rest of the population. As foreseen, an improved information about ozone level and air quality generated engagement in claim for solutions towards local administrations.

In order to present the project in the local communities in the test bed area and inform them about the ozone pollution, causes and possible solutions, an exhibition was elaborated and edited. The "[Ozone pollution in Catalonia](#)" exhibition were exposed for periods of 10 to 15 days, in many spaces as municipal libraries, civic centers and even in a municipal market:

- From 18th to 31st of July 2017, Library Joan Triadú of Vic (Catalonia, Spain).
- From 4th to 25th August 2017, municipal market of Manlleu (Catalonia, Spain).
- From 28th of August to 15th of September 2017, social center La Clau, Sant Celoni (Catalonia, Spain).
- From 25th to 30th of September 2017, Library in Roda de Ter (Catalonia, Spain).
- From 15th November to 5th December 2017, Library Montserrat Roig, Martorelles (Spain)



Figure 5: Exhibition panel in Vic, Spain - July 2017

Conferences in the most affected area were organized to spread knowledge about the project and the ozone pollution problem. In many cases they were performed with the opening of the exhibition.

- **El fum no és vida. Contaminar no és una diversió.** June 8, 2017. Plaça Maluquer i Salvador, Granollers (Spain)
- **Xerrada "Osona, zona de ozó"** July 21, 2017. Plaça Andreu Colomer Munmany, Vic (Spain)
- **Xerrada "Montseny, un aire no tan pur. El problema de l'ozó"**. Setember 2, 2017 Centre Cultural La Clau, Sant Celoni (Spain)
- **2a edició Fira de les Merdes de Catalunya. Femscat 2017.** Setember 16, 2017 Manlleu (Spain)
- **Xerrada "L'ozó a casa nostra"**. Setember 26, 2017. Sala polivalente, Biblioteca. Roda del Ter (Spain).
- **Cycle of conferences about air pollution and ozone.** November 15 and December 13. Biblioteca Montserrat Roig, Martorelles (Spain)

During the 2017 ozone campaign, Spanish volunteers, alliance members and general public had access to the ozone data through the App CaptorAIR and could spread messages of high concentrations of ozone that the application automatically generated through social networks.

Stakeholders Empowerment

To disseminate information about the project, deepen the ozone pollution issue (precursor pollutants, emissions sources and possible solutions) and to expand the network against air pollution, the Spanish partner prompted the following principal actions:

- “Extension of the complaint against Spanish government for dropping plans to reduce ozone levels” - *July 17, 2017*. Still in 2016, Spanish CAPTOR air network presented a joint demand to the Catalan government for not having drawn up mandatory plans to improve air quality in the area of the project which have breached legal target values between 2010 and 2015 to protect health and vegetation set out in European legislation on tropospheric that didn't get response. The same happened in other regions affected in Spain. In 2017 Ecologistas en Acción lodged a petition at the European Commission to start sanctions proceedings against Spain.
- Organization of the “II Symposium on tropospheric ozone and air quality in Spain” - 15th and 16th of September 2017 in Valladolid, Spain. The purpose of the event was to facilitate information exchange and collaboration on ozone pollution problems and solutions specifically in the urban transport. Best practices in alternative mobility and air quality developed in different Spanish cities were presented calling the Governments to adopt policies for a decisive reduction of ozone precursors (oxides of nitrogen NOx and volatile organic compounds VOCs).
- Elaboration of the “Ozone report in Spain 2017: Climate change increases the air pollution by ozone” that was published on the 10th October. The conclusion are that *“81% of the population and 87% of Spanish territory have been exposed this year to levels of ozone, exceeding the limits set by the World Health Organisation. The causes of this problem include: the prevailing meteorological conditions, climate change, the increase in traffic, fraud relating to automobile emissions, and the government's support of polluting energy sources instead of renewables. This systematically affects the population's health, as well as crops and natural areas”*.
- Captor presentation by UPC at Smart City Expo World Congress. November 15, Gran Via, Barcelona.
<http://www.smartcityexpo.com/ca/event-2017>

2.2 Captor engagement in Italy - year 2017

The key words for Italian engagement were **Scientific Environmentalism and Sharing the Problem**.

In Italy the testbed area is very big (around 80.000 km²) and includes 4 different regional administrations and 4 branches of partner organization (Piemonte, Lombardia, Veneto and Emilia Romagna). From the beginning of the project, Legambiente Onlus strategy was to establish a testbed area in each region (overall 4 Italian test areas), to involve at citizens in different regions that share the same problem, the air pollution.

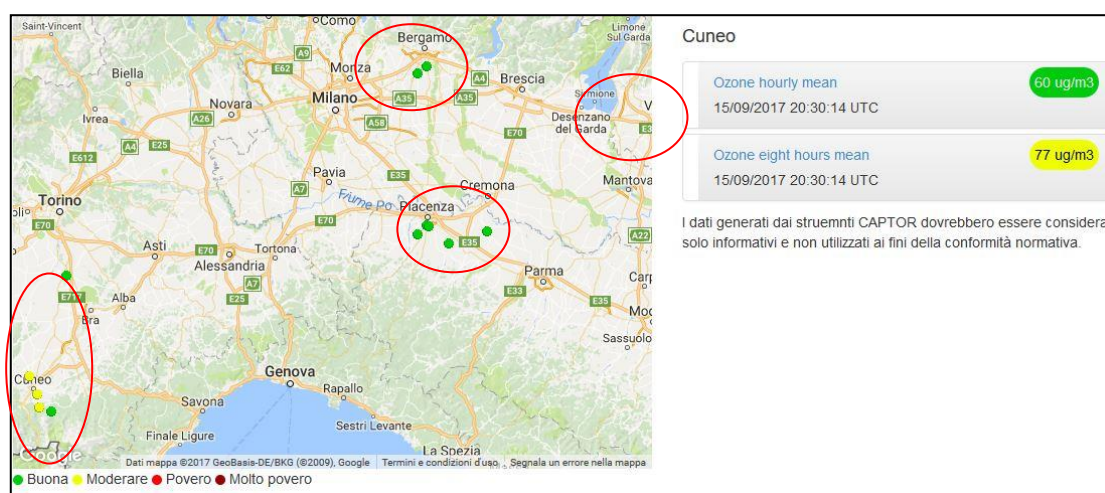


Figure 6: Captor testbed areas in Italy, from the mobile App “CaptorAir”

Citizens Empowerment

To involve people in a very large area and to have the maximum diffusion of the project, Legambiente (from National office and his third parties present at regional level) involved other Italians NGO’s, as *Movimento Difesa del Cittadino – MDC* - (Annex1), in a “**call for volunteers**” (Annex 2).

The call for volunteers was running during March and April 2017 with an online questionnaire promoted via the newsletter lists of the NGO’s involved and other media channels from Legambiente local groups². These newsletters have a wide reach towards a specific interested audience.

At the end of the call, 126 citizens subscribed their candidature, answering to the online questionnaire offering their engagement as “host of the sensor”.

²(<http://www.legambientevicenza.it/wp/2017/03/08/aria-ancora-inquinata-che-si-fa/#more-2827>)
(www.legambiente.emiliaromagna.it/2017/03/03/inquinamento-dellaria-ci-serve-il-tuo-aiuto-per-trovare-una-soluzione/)

After the call, Legambiente, together with scientific and technical project partners, defined the specific areas in each region on the basis of the citizen's candidature. Volunteers from the areas of Bergamo (Lombardia), Cuneo (Piedmont), Piacenza (Emilia-Romagna) and Vicenza (Veneto) were chosen, after the visit their houses and the verification of the technical criteria with CSIC. The whole testbed area was covered with criteria satisfaction.



Figure 7: Volunteer home visit to host a Captor

It is important to underline that the choice of the final testbed areas in Italy was strictly connected to the number of volunteer's candidatures: in Cuneo, Vicenza and Piacenza areas, the high number of volunteer involved was due, in the most of case, to the contacts and activities done by our Legambiente's local group; in Bergamo, the high number of citizens was activated by the MDC channel; due to the high interest from this area, the original plans for involving a fourth area from a Legambiente regional group was changed. The fact to have activated people via the collaboration with a project-external organization is very important: expanding the network and establishing collaborations is one of the goal of the project and it is useful to empower the efficacy of the project.

Before the launch of the summer monitoring campaign for Captor project, Legambiente realized a national awareness campaign named “**Trenoverde**”; this initiative, dealing with air pollution in urban areas and realizing a particular matter monitoring campaign with volunteers in Pianura Padana, increases the interest among citizens in this kind of participation activity. Again, it showed that connection with related topics is important in order to gain the attention of the population.

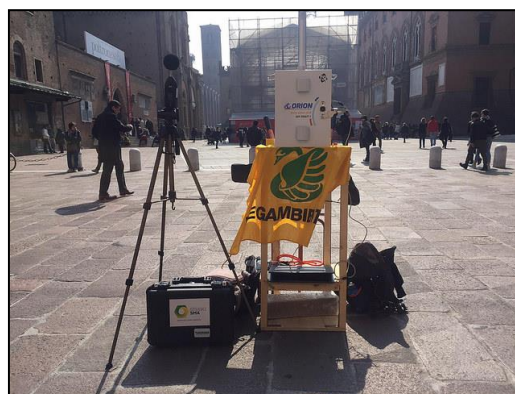


Figure 8: trenoverde monitoring campaign for particular matter.

In order to increase the success of communication activity, the Captor project and the Ozone monitoring campaign were launched during the initiatives done in the framework of trenoverde campaign³.

³ www.legambientevicenza.it/wp/2017/04/11/la-tappa-vicentina-del-treno-verde-2017-un-successo/#more-2886

For the first Captor monitoring campaign in Italy, the growing interest from the citizens is also due to the good work in communications done by NGO's present in testbed areas: regional television news, press release and interview on the local newspaper spoke about the project at the beginning of the campaign (Annex 3).



Figure 9 a) TG Emilia Romagna interview about Captor project <http://www.captorlegambiente.it/capit/2017/07/19/allerme-ozono-tgr-rai/>

b) Interview on Eco di Bergamo newspaper about Ozone pollution and captor Project

Diffusione: 41.746

L'ECO DI BERGAMO	Quotidiano	Data 31-07-2017
		Pagina 21
		Foglio 1

L'INTERVISTA ANDREA MINUTOLO.
Il referente nazionale di Legambiente per il progetto Captor: in estate l'ozono diventa inquinante significativo, i dati dei sensori saranno pubblici dal primo giorno di monitoraggio

«In Italia tremila morti l'anno ma se ne parla ancora poco»

«**U**n test unico a livello nazionale che coinvolge per la Lombardia solo la comunità bergamasca, tra le più sensibili sui temi ambientali». Obiettivo? «Sembrare i cittadini e anche i decisori politici ai temi dell'inquinamento dell'aria». A parlare è Andrea Minutolo, referente nazionale di Legambiente per il progetto Captor.

Minutolo, ad agosto si parte con tre stazioni di rilevamento. Che cosa vi aspettate dai risultati?
«Saranno pubblici dal primo giorno di monitoraggio e visibili sulla

piattaforma Captor Legambiente e anche attraverso la App Captor air. Sensori affidabili, innovativi, studiati insieme a centri di ricerca di Barcellona che insieme all'Austria e naturalmente alla Pianura Padana fanno parte di questo interessante progetto che ci vede capofila per l'Italia. rendere consapevoli i cittadini, raccogliendo i dati grazie al loro stesso aiuto, è una base fondamentale per risolvere i problemi legati all'ozono».

Se ne parla ancora poco?
«Assolutamente sì. L'ozono è definito un inquinante secondario, ma fa 3 mila morti l'anno nel nostro Paese secondo le stime della commissione Ue. Iniziamo a parlare come per le polveri sottili in inverno».

A ogni stagione il suo male...
«In estate l'ozono diventa un inquinante significativo. In inverno i pm10 altrettanto, purtroppo producono oltre 60 mila decessi all'anno. Il problema è che sull'ozono c'è ancora poca conoscenza e sensibilità. Si aspetta il sole e non



E la Pianura Padana, in particolare la Bergamasca, dai dati Arpa è una delle più esposte, giusto?
«È così, per questo abbiamo scelto di rispetto a molte altre realtà. Tengo presente che sono arrivate centinaia di domande per installare i sensori nelle proprie abitazioni. Alla fine, valutati tanti fattori compresa la disponibilità dei privati stessi, si è scelta questa area lombarda».

E Bergamo città?
«Ci hanno già contattato. Li sentiremo a fine agosto al termine dei rilievi. La prossima estate ci saranno. Anche a Bergamo. E con più sensori».

S. G.L.

I dispositivi di rilevamento

<https://www.legambiente.emiliaromagna.it/2017/03/21/citta-sotto-la-cappa-dello-smog-concentrazioni-di-pm10-non-piu-tollerabili/>

Stakeholders Empowerment

The strategy followed in Italy to obtain more impact and awareness from citizens and stakeholders, was to involve with more intensity the Regional Environmental Agency (ARPA) and schools.

ARPA had a central role to give visibility and credibility to the project: not only for the calibration of instruments at the beginning and at the end of the summer campaign, but also working together in communication and networking. An article about Captor was published on the magazines *Ecoscienza*⁴ and *Ambienteinforma*⁵, two magazines for the technical and administrative target, useful to empower both aspect of quality of the data and citizen science strategy.

In the four Italian's testbed areas 2 schools were involved from the beginning in the project: one of them, in Pontida municipality, hosted a sensor during the summer period and, from the autumn 2017 until spring 2018, Legambiente Lombardia is working with students and parents in an environmental education path on air quality. In Cuneo area, an ITIS school (Technical and Industrial high school) was involved as *observer* in the project.

After a preliminary meeting in March 2017, a workshop with the presentation of the results of the first summer campaign in Italy was done in November. Students, parents and teachers were present and the objectives was to involve the school in a “makers” role for the next year⁶.

Moreover, in November 2017, in Piacenza (Emilia Romagna), was done the presentation of the results of the summer campaign during the workshop “Aria Pulita 3.0” (see Fig 10).



Figure 10: Presentation of the results of the summer campaign in Cuneo IT IS and Piacenza city

During the final presentation of Life project *Photocytex* (LIFE13 ENV/ES/000603) in Quart de Poblet (June 2017), Legambiente Emilia Romagna talked about Captor project and the importance of the citizen science to promote change in behaviour.

⁴ The montly magazine of Arpa Emilia Romagna (pag.33)

https://www.arpae.it/cms3/documenti/_cerca_doc/ecoscienza/ecoscienza2017_3/Ecoscienza2017_03.pdf

⁵ The newsletter at national level of Arpa:

<https://ambienteinforma-snpa.it/qualita-dellaria-al-via-in-emilia-romagna-il-progetto-captor/#more-14717>

⁶ <http://www.targatocn.it/2017/11/24/sommario/cuneo-e-valli/leggi-notizia/argomenti/scuole-e-corsi/articolo/cuneo-un-successo-la-lezione-allitis-del-geologo-andrea-minutolo.html>

2.3 Captor engagement in Austria - year 2017

The key words for Austrian engagement were **awareness and information**.

The testbed areas in Austria were Hartberg and Weiz region, in the south of Vienna. In the first year of the project the activities done by the national partners created a network of citizens, NGOs and stakeholders, useful to the activities and monitoring campaign of 2017. In Austria, monitoring campaign concerned Raptors instruments.

A tour in the two regions was done by Global 2000 team in cooperation with ZSI to realize school workshops and info points in the city centre. At the end of the tour, Captor team had the chance to get in touch with passer-bys in the pedestrian area. The overall experience from the tour confirmed the experiences from other public events on Captor: the presence of tropospheric ozone pollution is a widely untouched topic of discussion. Moreover, the majority of people is not aware of the existence of tropospheric ozone pollution.

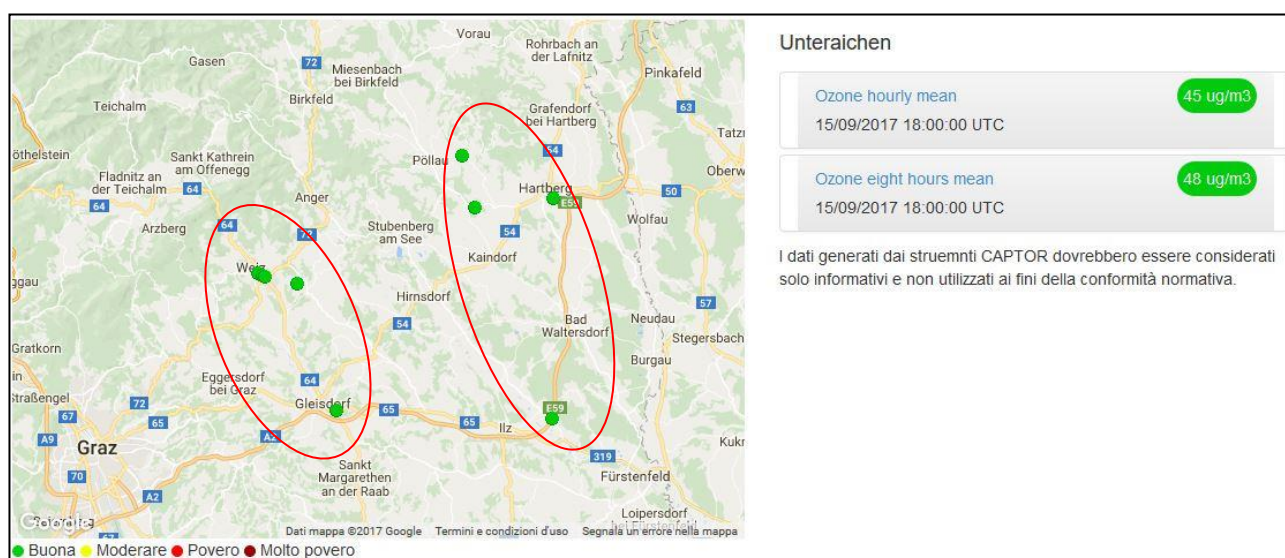


Figure 11: Captor testbed areas in Austria, from the mobile App "CaptorAir"

Citizens Empowerment

A "call for volunteers" was done in the first months of 2017 using local newspapers, the Global2000 website and the Captor website⁷. The NGO contacted directly the communities in the 2 selected regions (via email/phone) and before the summer period organized different school workshops in the testbed areas: 2 in Hartberg NMS (secondary school) in May, 1 in Weiz NMS in June and 1 in Gleisdorf NMS at the end of June. The idea was to deploy the Raptor instruments near the school during the monitoring campaign, in the middle of town and on the main square in front of the city hall, to give visibility to the project and to develop awareness among citizens about ozone pollution.

⁷ <https://www.global2000.at/werden-sie-captor-sensor-host>



Figure 12: Captor school workshop in Gerlitz NMS, Austria.

On 19th of May two classes from NMS Hartberg-Gerlitz joined the first CAPTOR school workshop tour, to learn about ozone pollution and the ways to measure ozone.

On 13th of June the tour followed in Weiz, first in a school having performed a workshop on Captor for two classes, and afterwards in the city Centre.



Figure 13: Captor school workshop in Weiz NMS, Austria

Stakeholders Empowerment

After the school visit, the CAPTOR project was presented at **information desk in the city centre of Hartberg**. The Major Marcus Martschitsch and Mr. Anton Schuller (regional environmental manager of Hartberg) came to visit the infopoint, as well as journalists from the local press. A short video⁸ about the instruments developed by the project was realized and showed at the information desk.



Figure 14: Captor info point in Hartberg, Austria. May 2017

⁸ <https://www.captor-project.eu/en/presenting-captor-informationdesk-in-hartberg/>

CAPTOR

The Captor team presented the project at “**Innovation Centre Weiz**” that offered an ideal locations for the installation of Captor measuring instruments; as well, for future activities, the Captor team proposed the Innovation Centre Weiz to built their own Captor measuring instruments as many as they need. His idea has to be further explored and the details should be developed, but generally the interest from the three municipalities to continue the cooperation with CAPTOR project in the future has been clearly expressed.



Figure 15: Captor presentation at Innovation Centre Weiz, June 2017

3. Conclusions

In the second year of the project, the three testbed areas involved in Captor's official monitoring campaign gave us a good feedback in terms of **interest from the public, motivation for participation, engagement strategy and improvement of the tools developed.**

From the technical point of view the instruments gave good performance with some minor problems (loss of connection, negative values measured, durability of the battery etc etc); more on the technical details and how these will be addressed in the coming year can be found in related deliverable.

From an engagement perspective, we got good indications from the volunteer hosts that the initial interest can grow into deeper engagement and taking responsibility if citizens can get involved in the scientific process.

Another good point was **the attention from citizens** (host and observers) **to check the data from the tools** (as the mobile app and web map) **and to participate to the event organized by the partners.**

A more detailed analysis on the feedback obtained during the campaign from different stakeholders is presented in deliverable D5.2

For the 2018 the main objective for the engagement activities will be to develop and to empower the "*sense of membership in a community*"; the Captor goal will be achieved if the communities involved in these past years will be strongly motivated to continue their paths together even after the official support from the project; "asking for solutions" and "promoting changes in behaviour" will be the next steps of the project.

Moreover, being the last year of the project, during the monitoring activities of 2018 it will be stressed the possibility to continue to act for air quality with local communities and public administration, together to find solution and improve quality of life.

ANNEX

AL VIA IL PROGETTO EUROPEO CAPTOR DI LEGAMBIENTE CONTRO L'INQUINAMENTO DA OZONO. MDC PARTECIPA COME PARTNER DI SUPPORTO

di Silvia Biasotto



L'inquinamento atmosferico è il tema ambientale che preoccupa di più i cittadini europei. È responsabile ogni anno di 430mila morti in Europa, ed espone sia l'agricoltura che l'ambiente naturale a considerevoli danni. Nonostante questi fatti, la buona volontà e la capacità dei cittadini europei a intraprendere essi stessi delle azioni è limitata. L'ozono troposferico è uno dei più importanti inquinanti atmosferici, tuttavia non se ne parla molto spesso. In Italia ogni anno oltre 3mila persone muoiono per patologie respiratorie legate a questo inquinante. La sua origine deriva dall'inquinamento generato nelle grandi città ma la sua presenza colpisce principalmente le aree rurali e semiurbane. Il progetto CAPTOR (Open Collective Awareness Platform for Tropospheric Ozone pollution), finanziato dal programma Horizon2020 dell'Unione Europea, si basa sul presupposto che una combinazione di citizen science, di reti di collaborazione e di attivismo ambientalista sociale di gente comune aiuti ad aumentare la consapevolezza e a trovare soluzioni al problema dell'inquinamento atmosferico, avendo un impatto ad alto potenziale in campi come educazione, innovazione sociale, scienza, ambiente, politica ed industria. Protagonisti del progetto sono i cittadini, chiamati a una collaborazione attiva per rilevare l'ozono presente nell'aria. Verranno infatti forniti di sensori i quali registreranno le concentrazioni di questo inquinante nell'area in cui verranno installati e trasmetteranno in tempo reale i dati su una piattaforma appositamente dedicata. In particolare, CAPTOR impiega sensori a basso costo per la raccolta di dati in tre regioni europee fortemente colpite dall'inquinamento da ozono. I cittadini stessi saranno in carico della manutenzione dei sensori, i quali saranno sviluppati con una particolare attenzione alla qualità dei dati che raccoglieranno, poiché questo è un punto cruciale nel processo di crescita e mobilitazione della cittadinanza. Il ruolo dell'Italia è molto importante perché sono coinvolte le regioni maggiormente colpite dall'inquinamento atmosferico a livello europeo, ovvero la Lombardia, l'Emilia-Romagna, Veneto e il Piemonte. Il Movimento Difesa del Cittadino si

è impegnato a diffondere questa iniziativa a tutti i consumatori residenti in queste regioni. Per saperne di più visita il sito web del progetto www.captor-project.eu

OZONO UN PERICOLO PER LA SALUTE DELL'UOMO.

INTERVISTA A GIORGIO ZAMPETTI,
RESPONSABILE SCIENTIFICO DI
LEGAMBIENTE

- Quali sono le conseguenze per la salute dell'inquinamento da ozono? L'ozono è un inquinante tossico per l'uomo che, se inalato, irrita le mucose delle vie respiratorie e può causare disturbi respiratori e cardiovascolari. I soggetti più vulnerabili sono i bambini, gli anziani e i soggetti asmatici e nelle persone con patologie respiratorie può peggiorare le condizioni di bronchite, enfi sema e asma, nonché aumentare il rischio di morte prematura nei soggetti con malattie cardiopolmonari. Secondo l'ultimo rapporto dell'Agenzia europea per l'ambiente, l'ozono è stato responsabile di circa 17 mila morti premature in Europa nel 2013, con l'Italia che detiene il primato con 3300 morti.
- Quale è il livello di esposizione della popolazione italiana all'inquinamento da ozono? Più dell'80 % della popolazione italiana che vive nei centri urbani è esposta a livelli di ozono > di 120 µg/m³ (Obiettivo a Lungo Termine per la protezione della salute umana). L'area della Pianura Padana è quella maggiormente colpita, e viene considerata tra le peggiori a livello europeo.
- Quali sono le principali fonti di inquinamento da ozono? L'ozono troposferico è un inquinante secondario, cioè non è emesso direttamente nell'atmosfera ma si forma in seguito a complesse reazioni chimiche di ossidi di azoto (NOx) e composti organici volatili (VOC), monossido di carbonio (CO) o metano (CH₄) in presenza di luce solare. Questi gas sono chiamati precursori dell'ozono. Le fonti di questi precursori si trovano principalmente nelle aree urbane ma le concentrazioni di ozono troposferico sono generalmente più alte nei luoghi rurali. La ragione di ciò è che i precursori gassosi dell'ozono, generati in ambienti urbani, vengono poi trasportati verso le aree suburbane e rurali.
- Una volta raccolti tutti i dati tramite il progetto Captor, quali sono le azioni previste? Lo scopo di CAPTOR è quello di favorire la collaborazione dal basso delle comunità locali, dei cittadini, delle organizzazioni non governative e degli scienziati per sensibilizzare e trovare delle soluzioni al problema dell'inquinamento atmosferico. Si cerca quindi di instaurare una rete di comunità locali nelle tre regioni europee per monitorare l'inquinamento da ozono troposferico e definire e progettare delle modalità d'azione.

Lotta all'ozono, Bergamo fa scuola

Centraline per la misurazione dell'ozono, la Bergamasca fa scuola nel monitoraggio dell'inquinamento. I dispositivi di rilevamento arriveranno domani su due case private - una a Stezzano e l'altra a Ponte San Pie-

tro - e nella scuola secondaria di primo grado «Paolazzi» di Pontida, consentendo di analizzare per tutto il mese di agosto la qualità dell'aria sotto la supervisione dei tecnici di Arpa Lombardia e di Legambiente, capofila del pro-

getto europeo Captor. La Bergamasca è stata selezionata tra le aree più soggette al rischio di inquinamento da ozono e il test, che inizierà ufficialmente nella giornata di mercoledì, è unico a livello nazionale. La nostra provincia è

la sola coinvolta in Lombardia per il progetto che in Italia riguarda la Pianura Padana e, all'estero, Barcellona e Vienna. «È un'iniziativa di grande interesse, soprattutto per il coinvolgimento diretto dei cittadini che permette di creare una coscienza comune», evidenziano Arpa e Legambiente. GIRARDIN A PAGINA 21

Parte il test sull'ozono, unico in Italia

Inquinamento. Centraline su due case di Ponte San Pietro e Stezzano e alla scuola media «Paolazzi» di Pontida. Provincia pilota in Lombardia, nel piano con Barcellona e Vienna. Arpa e Legambiente: creare coscienza comune

SIMONE GIRARDIN

Saranno installate domani in due case private, una a Stezzano e l'altra a Ponte San Pietro, e nella scuola secondaria di primo grado «Paolazzi» di Pontida le centraline con i sensori per monitorare la qualità dell'aria, in particolare le concentrazioni di ozono troposferico. Misurazioni che andranno avanti per tutto il mese di agosto sotto la supervisione dei tecnici di Arpa Lombardia e di Legambiente, capofila del progetto europeo Captor (www.captor-project.eu/it/).

I due enti sono da tempo in prima fila nello studio degli effetti dell'ozono sulla salute umana, sugli ecosistemi e sull'agricoltura, in particolare durante la stagione estiva e in aree rurali e periurbane. L'area bergamasca è stata di fatto selezionata tra le aree più soggette al rischio di inquinamento da ozono.

Test da mercoledì

Un test, quello che inizierà ufficialmente nella giornata di mercoledì, unico a livello nazionale e che vedrà la partecipazione di Spagna (Catalogna, l'area a nord-ovest di Barcellona), Austria (la zona suburbana di Vienna) e appunto Italia (la Pianura Padana con l'area bergamasca per la parte lombarda). Il progetto, finanziato dal programma Horizon 2020 dell'Unione Europea, punta «a sti-

molare nuove politiche pubbliche di monitoraggio e controllo» spiega l'assessore regionale all'Ambiente Claudia Terzi, attraverso la collaborazione «tra istituzioni scientifiche, enti pubblici e la partecipazione attiva dei cittadini in modo che possano adottare comportamenti sempre più sostenibili».

«Come Arpa - ricorda il direttore generale Michele Camisasca - abbiamo dato e continuiamo a dare tutto il nostro supporto tecnico-scientifico a progetti di respiro europeo. Nel caso di Captor il nostro apporto è in particolare sulle rilevazioni effettuate, oltre a una stretta collaborazione nei momenti di discussione dei risultati e di comunicazione». Di fatto i rilevatori, in tutto cinque, sono già stati installati «nella nostra stazione di Osio Sotto - fa sapere Guido Lanzani, responsabile del Centro monitoraggio qualità dell'aria di Arpa -. Questo è servito per calibrare i sensori e raccogliere correttamente i dati per un confronto con quelli da noi misurati a luglio». Tre di

questi ora verranno posizionati nelle due abitazioni e nella scuola.

Coinvolti i cittadini

«È sicuramente - annota ancora il direttore Camisasca - una iniziativa di grande interesse soprattutto per il coinvolgimento diretto dei cittadini che permette di creare una coscienza comune». «Come Centro di monitoraggio - sottolinea Lanzani - valuteremo con attenzione i risultati prodotti da Legambiente che rappresenteranno una integrazione interessante alle nostre misure». Dati che verranno resi pubblici anche sulla piattaforma online di Captor.

Una collaborazione significativa tra Legambiente, Arpa, comunità scientifiche e istituzioni con la partecipazione attiva dei cittadini, tema che sta molto a cuore a Barbara Meggetto, presidente di Legambiente Lombardia: «La Pianura Padana è l'area in Europa con le maggiori concentrazioni di ozono, legate sia alla conformazione geografica sia all'elevata pressione antropica. L'aspetto più significativo del progetto è che il coinvolgimento delle comunità locali contribuisce ad aumentare la consapevolezza. L'obiettivo è ora di fornire nuove indicazioni puntuali sull'inquinamento dell'aria in particolare per quanto riguarda l'ozono».

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Monitoraggio per tutto agosto. La Bergamasca è tra le aree più esposte ai rischi dell'ozono

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Ambiente e Salute

Annex 3: Eco di Bergamo journal about Captor project; 31/07/2017