

**D-NOSES**

Distributed Network for Odour Sensing,  
Empowerment and Sustainability

# **D-NOSES**

# **Events 1**

D7.3

M13, April 2019



# Deliverable

PROJECT ACRONYM	GRANT AGREEMENT #	PROJECT TITLE
D-NOSES	789315	D-NOSES

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## DELIVERABLE REFERENCE NUMBER AND TITLE

D7.3

D-NOSES Events 1

Revision: v1.0

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Funded by the Horizon 2020 programme of the European Union

Grant Agreement No 789315

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- ✓ **P Public**
- P Confidential, only for members of the consortium and the Commission Services

# Revision History

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REVISION	DATE	AUTHOR	ORGANISATION	DESCRIPTION
v1.0	20.03.2019	Jose Uribe	ISWA	Initial Draft
v1.0	30.04.2019	Nora Salas Seoane & Rosa Arias	IBERCIVIS	Final Draft

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**STATEMENT OF ORIGINALITY**

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation or both.

# Summary

This document presents the events attended or organized by the D-NOSES consortium to promote, disseminate and engage with different audiences.

The events focused on four target audiences, which correspond to the quadruple helix model stakeholders - the public, the industry, scientific community and the policy influencers.

## Events for Public Audiences

Engagement with the general public is important to generate volunteers and enough data to make the odour maps. While the public engagement will take place largely in the pilot areas to be able to get the communities involved, it is important for the odour observatory to be filled with as much data as possible from all over the world. The D-NOSES team has been to **8 events** so far to engage with the general public and get them mapping.

## Events for Industry Audiences

Facility operators and industrial representatives were targeted at general exhibitions where they congregate to find out about new developments and innovations in their fields. D-NOSES was present at **8 industry related events**, communicating the value of the method to the industry in being able to provide a low cost alternative to environmental odour monitoring.

## Events for Scientific Audiences

Events such as scientific conferences were used to spread the message of citizen science in general and network with other researchers to promote the acceptance and use of these kind of methods. In this first period, D-NOSES was present at **14 scientific events**, presenting the methods and plans for the pilots and the new methodology to the odour experts community.

## Events for Policy Audiences

To reach out to policy influencers, D-NOSES was also present at **5 events** that included policy makers and government stakeholders. This included participation at the 22nd Meeting of the Working Group of the Parties to the Aarhus Convention in the UN in Geneva (with representatives of all European Governments), the “Science in the Parliament” programme at the Spanish Parliament in Madrid and presence at the Meeting of the Union for the Mediterranean (UfM) Working Group on Environment and Climate Change.

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# 1

# EVENTS

Events are a crucial component of the D-NOSES project and its aim to create a citizen science backed odour observatory. This requires engagement from the quadruple helix stakeholder sets, and they are targeted through these events. The aim is to spread the world of the new methodology among citizens, odour emitting industries, odour scientists and the citizen science community, and regulators

## 1 D-NOSES Events

There are four main audiences that have been targeted by the events, which correspond to the quadruple helix model stakeholders - the public, the industry, scientific community and the policy influencers. For each of these stakeholder groups, we present here a few reports from sample events. All the events have been extensively communicated through the project social networks ([Facebook](#), with 237 followers, and [Twitter](#), with 254 followers on 30/04/2019) and website (dnoses.eu). More pictures and information on the events can be found online.

### Events for Public Audiences

For the general public, the events were largely focused on presenting the project to start spreading the word and using the App OdourCollect to map odours. In affected communities, the events have been focused on either training citizens on odours recognition or on mapping exercises to start gathering data.

## Mapping Workshops - Science Safari 2019



As part of the Science Biennial, D-NOSES partners Ibercivis and Ideas for Change (IFC) held an odour training and awareness workshop last Sunday 10th of February 2019 in the Fòrum area of Barcelona, one of the D-NOSES Pilots. The Fòrum area has long been a focal point of bad smells; which D-NOSES proposes to resolve using citizen science to measure and validate the real impact on residents. Visitors and their children were excited to learn about the environmental odours affecting their neighbourhoods and what could be done about them.

The human nose remains the best odour sensor we have available, and with a little training can deliver a scientifically accurate picture of where and when each type of odour can be perceived. During the event members of the community were taught how to recognize the different types of odours and assess their impact by measuring the odour's intensity and its hedonic tone (the extent to which an odour is perceived as pleasant or unpleasant). These characteristics tend to be subjective and can be associated with particular memories which led to some amusing answers from the children participating in the odour recognition exercise – such as “the smell of my grandma“. However, with some training, people learn to associate smells with the correct substances and can then reliably identify them.

Because the OdourCollect App was not fully ready yet, the visitors to the stand were invited to mark odours on a printed map using sticky dots.



### Odour Workshops - Ecomondo 2018

The D-NOSES team took advantage of the Ecomondo 2018 environmental exhibition to educate visitors about odours at the ISWA booth. A team of odour researchers from Politecnico Milano, led by Selena Sironi, brought a set of samples that could be used both to educate and test the visitors ability to determine odours according to the new rating system that is proposed for the OdourCollect application (see article [in our website](#)).





The quality of the data collected by the D-NOSES project depends on the public's ability to properly assess smells. It is therefore imperative to develop an easy and reliable system for citizen science volunteers to identify and classify odours that they encounter in their environment. There are several very effective traditional scientific odour classification and description methodologies that tend to be complex and require recording several different dimensions to properly describe the scent. However, without previous training, they can be difficult and cumbersome to use.

For D-NOSES, it is less important to accurately describe every detail of the odours, as long as they can be classified in a way that reflects their possible source and can be easily recorded on a mobile app (or paper) by non-experts. This is why the most important dimension is the "type of odour" being perceived (its quality), although 2 extra dimensions - hedonic tone and intensity - are also recorded as additional information to grasp the overall nuisance in the area. The hedonic tone provides a measure of how pleasant or unpleasant the perception of the odour is, on a scale from -4 (extremely unpleasant) to +4 (extremely pleasant). The intensity is the level of perception that can vary from very weak (1) to extremely strong (6), both scales in accordance to the German standard VDI 3882.

Set of odour samples for training



Prepared odour samples for questionnaire



Visitors were introduced to the project, and were then asked to identify some common smells from sample bottles. The smells included coffee, orange, pear and other common scents that should be very recognizable. At first, it was not easy for visitors to recognize the smells without some prompting. After prompting, they were much better at identifying subsequent samples, and were then asked to rate another set of samples according the new proposed odour rating system. By then comparing the ratings for the different samples across the different test subjects, the researchers can assess whether the rating system will give adequate information that can be used to determine where the odours are coming from and what the resulting level of nuisance might be.



## Events for Industry Audiences

For industry stakeholders there were mainly presentations that focused on informing the audience as to the technical challenges of odour measurement and management, as well as the advantages offered by a citizen science based innovative methodology such as D-NOSES.

### Industry Presentations - IFAT Munich / IFAT Eurasia

IFAT 2018 took place in Munich from 14 to 18 May, with 3,300 exhibitors from 58 countries and 142,400 visitors from 162 countries (see article [on our website](#)). IFAT Eurasia, the leading trade fair for environmental technologies took place at the Istanbul Expo Center on March 28-30, 2019. D-NOSES was there to reach a wider audience of young environmental engineers and facility managers that routinely face odour complaints and issues. The team represented the project at the ISWA stand, and then did a special presentation on Odour Management and the advantages of the D-NOSES approach for all stakeholders in both events.



The presentations started with a short introduction to the project and the debut of the new project video. During the introduction, the events leading to Chile designating odours as an environmental contaminant were used to illustrate the problems with the present approach to odour management, and how D-NOSES offers a balanced and more effective alternative.



Cyntia Izquierdo from AMIGO then compared the traditional methods of odour management and the advantages of the bottom-up citizen science approach. The human nose is still the best odour sensor we have available and can be used as a reliable source of data.



Rosa Arias from Ibercivis continued with her presentation on how the project will co-create the International Odour Observatory. This will be a one-stop-shop to support all stakeholders in odour management issues and specifically on how to make full use of the D-NOSES method to their advantage. The observatory will promote balanced and creative discussions between

the different actors that focus on solutions that make a difference in people's lives. After all, D-NOSES is about measuring, managing and minimizing the real-life impact of environmental odours.

After the presentations, feedback from some of the facility managers present confirmed that the cost-efficiency of the method makes it an attractive proposition for industry. By utilising citizen science, the residents around a facility can form a permanent network of auditors that can monitor odour emissions in real-time at lower cost than when using traditional monitoring methods. Through dispersion models the odour data can be linked to particular activities at the site. This not only allows a quick response to unforeseen issues, but also offers a valuable diagnostic tool for troubleshooting odour emitting processes at the plant. Others were also particularly interested in the ability to track the sources of odours using the dispersion model and so distinguish emissions from facilities that are near each other.

## Events for Scientific Audiences

For other scientists the D-NOSES events and presentations focused on the science of odour management and the application of citizen science as a tool for social interventions.

### Scientific Presentations - DITOS Conference



For their final event, the DITOs team brought together a number of other citizen science projects to present, exchange and debate their ideas on Citizen Science. D-NOSES Project Coordinator, Rosa Arias from Ibercivis, was invited to take part in a panel discussion, moderated by Project Officer Colombe Warin, and D-NOSES partner ECSA provided a stand for the Citizen Science Fair to demonstrate the work and progress of the project so far.

During the panel discussion, Rosa Arias pointed out the natural advantage of D-NOSES and other projects that rely on citizen science methods for observation and data collection - the data stream is real-time and potentially constant. Most environmental assessments suffer from the fact that they reflect only a snapshot of the situation. Citizen scientists can form a network of observers that offer constant monitoring, which means that the real impact of the problem can be measured over time, something impossible when using traditional monitoring methodologies. In the D-NOSES context this also means that facility operators can have early warnings about problems as well as diagnostic data on their activities - a win-win scenario.

Taking this idea one step further, Rosa challenged policy makers in Europe:

Following the Freedom of access to information (2003/4/EC) directive, citizens should be able to access but also contribute to and analyse environmental data which can be used to affect change. This should be used as a policy instrument to permanently fund more citizen science-based observatories, databases, communities etc, which are a direct, practical and cost-efficient implementation of this directive.

While the Aarhus convention guarantees the citizens' right to access and use data, this right cannot be exercised where the required data does not exist. For this right to have meaning, people also require the right and ability to generate the data they might need to take responsibility for their own environment.

The event also hosted a Citizen Science Fair, in which the invited projects could display and demonstrate their work and progress. Many of the stands featured interactive demonstrations of their activities. At the D-NOSES stand, ECSA demonstrated the new, free, OdourCollect web and mobile app that enables citizens to record and map odours in their environment while they go about their daily lives. Other activities at the stand included co-creation exercises to define the requirements for the Odour Observatory, the mapping of communities affected by odours, and the presentation of the new D-NOSES Policy Brief.





## Scientific Presentations - NOSE Conference



**LIVE STREAM**

# Training on Odour Pollution Workshop

*Exploring odour perception and odour measurement*

Workshop led by Dr Laura Capelli, D-NOSES Scientific Manager

**12th September, 14:00-14:50 CEST**

NOSE2018, Milan, Italy, 9-12 September 2018



The Scientific Manager of the DNOSE project, Laura Capelli, in collaboration with the NOSE conference, organized a D-NOSES workshop in the framework of the NOSE Conference that took place in Milan, Italy. This offered a comprehensive training in odour measurement and management, gathering several experts in the field taking advantage of their presence at the NOSE conference. This workshop was streamed over the internet through Youtube and was recorded so that it could be used as a resource later on in the project (see article [on our website](#)).

*Program:* Wednesday, 12 September 2018

14:00 – 14:50: Laura Capelli – Exploring odour perception and odour measurement

14:50 – 15:20: Andrea Rossi – Odour measurement and odour impact assessment according to the European Standards

15:20 – 15:40: Carlos Diaz – Odour regulation and odour impact criteria around the world

16:00 – 16:20: Marzio Invernizzi – FIDOL factors and the definition of odour nuisance

16:20 – 16:40: Pierluigi Barbieri, Sabina Licen – Assessing the olfactory nuisance perceived by the population: common sense and high tech

16:40 – 17:00: Gerhard Schleenstein – Assessment of odour annoyance with questionnaires using VDI 3883

17:00 – 17:20: Carmen Bax – The use of electronic noses for environmental odour monitoring

In addition, the D-NOSES Project Coordinator, Ms Rosa Arias, was one of the three keynote speakers of the conference, to present the innovative bottom-up methodology to the scientific community working on odour pollution management and abatement.



## Events for Policy Audiences

### Twenty-second meeting of the Working Group of the Parties to the Aarhus Convention

One of the main aims of D-NOSES is contributing to the implementation of [Principle 10](#) of UN Rio Declaration, which advocates for access to environmental data, public participation in decision making and access to justice in environmental matters, in relation to the SDGs. D-NOSES wants to go one step beyond, since citizens will not have the right to access environmental data, but to generate their own environmental data through OdourCollect and the rest of mapping activities within the project (see article on this topic [on our website](#)). All European countries have ratified the implementation of Principle 10 through the Aarhus Convention, which was celebrating its 20th anniversary. D-NOSES can potentially contribute to comply with the Aarhus convention, especially in the countries that are behind compliance.



### Presence and Networking - Science in Parliament



Rosa Arias, D-NOSES Project Coordinator, participated as a Scientific Advisor in the “Science in the Parliament” [#CienciaenelParlamento](#) programme at the Spanish Parliament in Madrid on the 6th and 7th November 2018 (see article in [our website](#)).

#CienciaenElParlamento is an independent citizen initiative that aims to make science and scientific knowledge one of the sources of information in the formulation of political proposals. It promotes a political culture close to science and scientific activities focused on the needs of the society. To achieve this goal, it is important that policymakers and the science, technology and innovation sector in Spain maintain regular contacts that facilitate the use of science effectively to advise on political decisions. It was an important event for the D-NOSES project to participate in as we champion the use of citizen science, RRI and co-creation tools involving all stakeholders to design a feasible strategy of introducing regulated and replicable methods of managing odour pollution.

This event discussed several topics and issues such as Climate Change and Energy Futures, Artificial Intelligence and Big Data, Social and Family Conciliation, etc. Rosa Arias participated in the assessment of Climate Change and Energy Futures (6th November) at 6.30pm. The event was streamed online on the Spanish Parliament Channel.

## 2 List of Events Attended

The D-NOSES has been very active in pursuing events where the project could be presented, either orally or through posters and literature, as well as personal networking. The table below lists the many events at which the consortium members presented the project.

NAME OF THE EVENT (link to social networks publication)	LOCATION	DATE	EVENT TYPE	ACTIVITY	DESCRIPTION	ATTENDEES
<a href="#">IFAT 2018</a> ( <a href="#">Twitter</a> )	Munich, Germany	14-18.05.2018	Presentation to the industrial sector	Presentation at ISWA booth	Explanation of the new methodology and the D-NOSES Project	25 Industry
<a href="#">EU Green Week: Involving citizens in air quality monitoring through Citizen Science initiatives</a> ( <a href="#">Twitter</a> )	Brussels, Belgium	25.05.2018	Awareness raising activity	Presentation during a partner event at the EU Green Week	One slide presenting D-NOSES and was able to network and distribute some leaflets from the project.	30 Public
<a href="#">ECSA Conference 2018</a> ( <a href="#">Twitter</a> )	Geneva, Switzerland	03-06.06.2018	Conference	Poster ( <a href="#">Twitter</a> , <a href="#">twitter</a> ) and informal presentation ( <a href="#">Twitter</a> )	Poster presentation of the project and networking with delegates on Citizen Science	400 Scientific
<a href="#">Twenty-second meeting of the Working Group of the Parties to the Aarhus Convention</a> ( <a href="#">Twitter</a> )	Geneva, Switzerland	19-21.06.2018	Working Group of the Parties	Presentation of D-NOSES by Rosa Arias	Open speech highlighting how D-NOSES can contribute to the implementation of Principle 10	150 Policy makers
<a href="#">5th Smart Urban Policy Futures workshop</a> ( <a href="#">Twitter</a> )	Greenwich, London	09.07.2018	Workshop	Presentation of D-NOSES by Rosa Arias and Louise Francis	Presentation of D-NOSES and citizen participation. Plus networking	35 Scientists

<a href="#">WEBINAR: D-NOSES: Optimizing Waste Management and Reducing Odour Pollution Through Citizen Science</a>	Remotely	29.08.2018	Webinar	Oral ( <a href="#">Twitter</a> )	Interactive Webinar with Rosa Arias presenting the D-NOSES project to Waste Management Professionals	69 Industry
<a href="#">The National Association of Poultry producers (Twitter)</a>	Bucaramanga, Colombia	06.09.2018	Conference	Oral	Course on basic odour theory to the National Association of Poultry Producers, referenced the D-Noses project during the section for odour mapping	70 Industry
<a href="#">Future Resources Exhibition (Twitter)</a>	Birmingham, UK	12-13.09.2018	Other	Poster	Networking and dissemination through leaflets and banner at the APEA stand	Industry
<a href="#">NOSE Conference</a>	Milano, Italy	9-12.09.2018	Conference	Attendance and networking + keynote speech ( <a href="#">Twitter</a> ) + Training workshop ( <a href="#">Twitter</a> )	Odour Measurement and Management workshop aimed at introducing the subject and the project as a side event of the conference.	~90 Scientific
<a href="#">Barcelona Olfaction Congress</a>	Barcelona, Spain	20-21.09.2018	Congress	Poster ( <a href="#">Twitter</a> )	Presentation of the D-NOSES methodology	~100 Scientific
Presentation of the <a href="#">Zaragoza Citizen Science Office (Twitter)</a>	Zaragoza, Spain	27.09.2018	Open presentation to the public + odour workshop	Oral	Presentation of the project to general public and politicians	45 General + Policy
<a href="#">OdorPrep (Twitter)</a>	Rome, Italy	10.10.2018	Confirmed	Oral	D-NOSES concept was shared with another distributed odour measurement project using electronic noses.	50 Scientific + Policy
<a href="#">NUCLEUS Conference (Twitter)</a>	Valletta, Malta	11-12/10/2018	Confirmed	Poster	Poster of the D-NOSES project and networking with	80 Scientific (RRI community)

					other RRI projects.	
<a href="#">Conference and event to raise awareness "Benefit-As-You-Recycle"</a>	Sofia, Bulgaria	11.10.2018	Conference	Oral	The D-NOSES project was presented at an event by the Sofia Municipality to encourage recycling.	Public
<a href="#">Jornada Técnica para la Prevención y Control de Olores en Sistemas de Saneamiento (Twitter)</a>	Llinars del Vallès (Barcelona)	17.10.2018	Workshop	Oral <a href="#">(Twitter)</a>	Workshop presenting D-NOSES as one of the options when discussing the prevention and management of odours in wastewater treatment.	120 Industry (wastewater managers)
<a href="#">Fundación Española para la Ciencia y la Tecnología thematic meetings to strengthen Citizen Science in Spain.</a>	La Casa de la Ciencia – CSIC. Pabellón de Perú Avda	17.10.2018	Conference	Oral <a href="#">(Twitter)</a>	Presentation of D-NOSES for the Spanish citizen science community	40 Scientific (citizen science community)
<a href="#">Annual General Meeting of MIO-ECSDE</a>	Athens, Greece	23.10.2018	Other	Oral	More than 35 NGOs from many Mediterranean countries participated; D-NOSES was presented and much appreciated.	35 Environmental NGOs (MIO-ECSDE members) Policy
<a href="#">Ecomondo 2019</a>	Rimini, Italy	07.11.2018	Exhibition	Workshop with Stand <a href="#">(Twitter)</a>	Odour training workshop, using odour samples to check ability to distinguish odours as well as presenting the project.	20 General public + Industry



<a href="#">Meeting of the Union for the Mediterranean (UfM) Working Group on Environment and Climate Change</a>	Barcelona, Spain	12-13/11/2018	Workshop	Intervention during discussions was not possible, a lot of networking took place in the corridors	Networking opportunity to communicate and advocate with the country representatives and international organisations about D-Noses.	60-80 IGOs, Government reps, and various other stakeholders  Policy
<a href="#">COST ACTION CITIZENS SCIENCE AND ENVIRONMENTAL MONITORING Benefits and Challenges</a>	Ispra, Italy	21-22/11/2018	Workshop	Oral ( <a href="#">Twitter</a> )	Rosa Arias will perform an oral presentation on the D-NOSES project	50  Policy + Scientists
<a href="#">Social Lab in SwafS New Horizon (Twitter)</a>	Berlin, Germany	15-16/11/2018	Workshop	Other	Rosa Arias participated in the event as D-NOSES Project Coordinator to present the project and do networking with other project coordinators of SwafS projects.	20  Scientific
<a href="#">COC 2018 conference</a>	Calgary, Alberta, Canada	3-5/12/2018	Conference	Oral ( <a href="#">Twitter</a> )	Workshop about D-NOSES and oral presentation	50  Scientific
<a href="#">Best Practices on Access to Environmental Information</a>	Berlin, Germany	03.12.2018	Workshop	Attendance and networking only	Simone attended to represent D-NOSES at this event.	ca 25  Policy
Training on German odour pollution measurements and mitigation	Essen, Germany	05-06/12/2018	Other	Training, no presentation was possible	Training to learn about the German odour regulations and how complaints are being handled.	ca 30  Industry
<a href="#">Swafs Brokerage Event</a>	Brussels, Belgium	14.12.2018	Workshop	Oral ( <a href="#">Twitter</a> , <a href="#">Twitter</a> )	D-NOSES is presented as an example of SwafS H2020 project invited by the EC to the event.	ca 100  Scientific



<a href="#">Lab Metadecidim Decidim amb Ciència</a>	Barcelona, Spain	14.12.2018	Workshop	Oral ( <a href="#">Twitter</a> )	D-NOSES is presented as an example of citizen science project.	ca 45 Public
<a href="#">Sharing Islands</a>	Gran Canaria y Tenerife	28-29/11/2018	Conference	Oral	D-Noses is presented as an example of a citizen generated data initiative	ca 30 in Gran Canaria and 120 in Tenerife Scientific
OdourCollect Workshop (MediaLab Prado)	Madrid, Spain	21/01/2019	Workshop	Oral ( <a href="#">Twitter</a> )	Participatory workshop to map odours in Madrid	ca 40 Public + Scientists + Policy
<a href="#">"Vespucci Training School on Digital Transformations in Citizen Science and Social Innovation"</a>	Fiesole FI, Italy.	21-25/01/2019	Workshop	Oral	D-Noses innovative approach in citizen science	ca 40 Scientists
<a href="#">City and Citizen Science (Science Biennial)</a>	Barcelona, Spain	07/02/2019	Conference	Oral ( <a href="#">Twitter</a> , <a href="#">Twitter</a> )	Presentations on odour mapping and citizen science based interventions	ca 60 Scientific
<a href="#">Science Safari (Science Biennial)</a>	Barcelona, Spain	10/02/2019	Workshop	Oral ( <a href="#">Twitter</a> )	Participatory mapping with OdourCollect in the Forum Area of Barcelona	ca 35 Public
<a href="#">Big Picnic Final Event</a>	Madrid, Spain	27/02/2019	Other	Networking	Presence at the Big Picnic Marketplace and networking with other projects.	ca 120 Scientific
<a href="#">DITOS Final Event</a>	Brussels, Belgium	03/03/2019	Conference	Oral ( <a href="#">Twitter</a> )	Short presentation of the project, panel discussions and stand at the marketplace	120 Scientific
<a href="#">Gender &amp; Citizen Science Workshop</a>	Iasi, Romania	20/03/2019	Workshop	Oral ( <a href="#">Twitter</a> )	Presentation of the D-NOSES gender framework.	ca 80 Public



<a href="#">Society for Applied Anthropology (SfAA) :: Annual Meeting</a>	Portland, United States	17-21/03/2019	Workshop	Oral	D-NOSES project explanation regarding the opportunity of citizen science	ca 40 Scientific
<a href="#">IFAT Eurasia 2019</a>	Istanbul, Turkey	30/03/2019	Presentation and Stand	Oral ( <a href="#">Twitter</a> )	D-NOSES was presented along with an interactive session for feedback on the odour observatory user stories	15 Industry

## 3 Event Materials

A full set of materials was created for use in the presentations. This included roll ups, posters, brochures and badges to help engage with visitors at events. Here we present some of these materials that were taken to events.

### Brochures - For Industry

**Join the conversation!**

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Funded by the Horizon 2020 programme of the European Union Grant Agreement No 789315

**D-NOSES**  
Distributed Network for Odour Sensing,  
Empowerment and Sustainability

#dNosesEU  
#OdourObservatory



## Co-creating alternative solutions to odour pollution

D-NOSES is an EU H2020 funded project that aims to provide a bottom-up approach to tackling odour pollution issues.

The project will introduce new mapping, data collection and community engagement tools to facilitate citizen science interventions across Europe and beyond. Data will be collected in *The International Odour Observatory*, a platform dedicated to promoting engagement at all levels, and literally putting odour pollution on the map. Citizens will then join other stakeholders such as industries, local authorities and NGOs, in at least 10 pilot sites to co-create solutions for their odour problems.

From April 2018 to March 2021, and with a 3.1 M€ budget, D-NOSES will produce the *Green Paper on Odour Pollution*, scientific and policy guidelines, and a *Strategic Roadmap on Odour Pollution* to introduce the issue into the policy agenda and help promote sustainability through community action.

## Citizen science to improve the management of industrial odours

Is your industry emitting odours that have an impact on communities?

Engage with D-NOSES to produce real-time data through citizen participation. Odour observations gathered using the free mapping app *OdourCollect* will allow you to optimise your industrial process to reduce impact and to check the effects of any newly implemented good practices and corrective measures. Co-created data will be validated by a world-class team of odour experts and made available on the *Odour Observatory* maps. All this at a fraction of the cost of traditional odour studies.

Our innovative methodology uses a bottom-up approach that will increase transparency and enhance your relationship with the communities and environmental authorities.

## Brochures - For Citizens

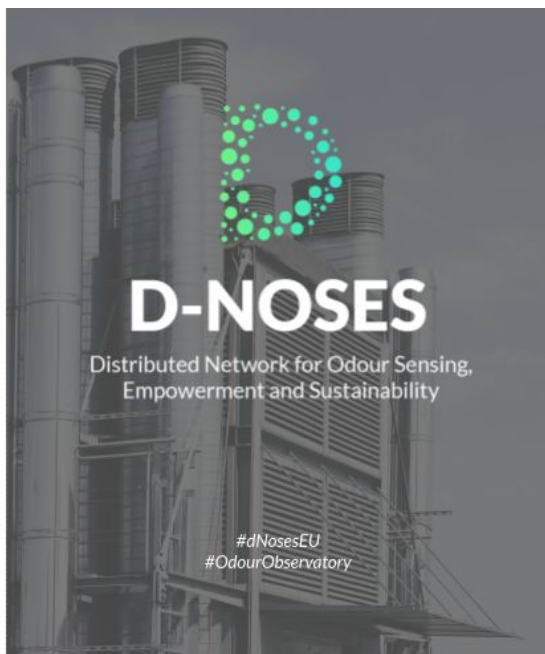
### Join the conversation!

Project coordinator:  
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[dnoses.eu](http://dnoses.eu) [@dNOSES\\_EU](https://twitter.com/dNOSES_EU) [dNOSES.EU](https://www.facebook.com/dNOSES.EU)



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From April 2018 to March 2021, and with a 3.1 M€ budget, D-NOSES will produce the *Green Paper on Odour Pollution*, scientific and policy guidelines, and a *Strategic Roadmap on Odour Pollution* to introduce the issue into the policy agenda and help promote sustainability through community action.

## Citizen science for sustainability & governance

Did you know that odour pollution is the second reason for environmental complaints after noise across Europe? Does it affect your community?

Odour pollution has repeatedly been ignored in the policy agendas, leaving citizens defenceless. As a result, socio-environmental conflicts are generated.

- Through participatory strategies and citizen science, D-NOSES will produce **real-time data** to **co-design local solutions** with citizens, industries, regional & local authorities and odour experts to build up a multi-level governance model in odour pollution. Odour observations will be gathered using the free mapping app **OdourCollect**.

Our innovative methodology uses a bottom-up approach that increases transparency and enhances positive relationships within the communities, while increasing the quality of life. **Get involved!**



## Roll Up – English version

**D-NOSES**  
Distributed Network for Odour Sensing,  
Empowerment and Sustainability

# Co-creating alternative solutions to odour management issues

ABOUT THE PROJECT

D-NOSES is an innovative project that includes citizens in a collaborative approach to improve traditional odour management.

Foto by Vera Photoart in Unsplash

INVOLVEMENT

D-NOSES will connect affected communities with local authorities, industries and experts in a platform to co-create solutions to odour problems.

Local Governments, Public Institutions, Environmental Authorities

Citizens, Associations, NGOs, OSCs

Academia (Experts in odours, citizen science and co-creation)

Industries, SMEs, Local Businesses

STRATEGY

Combining citizen science, new methods for mapping, data collection and local engagement, D-NOSES will help citizens in the co-creation of local solutions together with stakeholders.

The new bottom-up approach increases transparency, improves community relationships and increases quality of life through practical and creative ideas.

TAKE PART

Would you like to know more about odours in your neighborhood, where they come from and what you can do about it?

Register and Participate!

- 1 Together we will learn to identify odours
- 2 Help us gather real time observations using the free App OdourCollect
- 3 To understand the odour sources that impact your area we will use scientific models to validate your observations
- 4 Contribute to the co-creation of solutions together with neighbors, industries, public authorities and odour experts

App OdourCollect  
odourcollect.eu

WHERE

The project will focus on 10 specific pilot case studies around the world, but anyone can register to start adding observations for their local area and replicate the method in their own neighborhood.

Pilots will take place in at least these countries around the world:

Germany	Spain	Bulgaria	Greece
Italy	Portugal	UK	Chile

RESULTS

- International Odour Observatory
- 10 case studies in 10 countries to validate the D-NOSES methodology
- Put odour pollution on the policy agenda at a global, national and local level
- Policy briefs to inform new regulation
- Green Book on Odour Pollution
- Strategic Map of Odour Pollution

Coordinated by:

IDEAS FOR CHANGE

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101019163

#OdourObservatory #dNosesEU

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 dNOSES.EU





Posters (Scientific)



**D-NOSES**  
Distributed Network for Odour Sensing,  
Empowerment and Sustainability

# Co-creating the International Odour Observatory

Authors: R. Arias & N. Salas (Ibercivis Foundation [Spain]), M. Balestrini & L. Errandonea (Ideas for Change [Spain]), L. Francis & M. Alonso-Roldán (Mapping for Change [UK]), and J. Uribe (International Solid Waste Association [ISWA, Austria]).

**OUR PURPOSE**

Odour pollution is the second leading cause of environmental complaints after noise<sup>1</sup>, and yet, remains relatively ignored in environmental regulations. Many communities have had to tolerate odour nuisance for decades, with no hope of action being taken.

D-NOSES aims to implement *Principle 10* of the Rio Declaration<sup>2</sup> by engaging citizens and building capacity for action based on a bottom-up approach. The project relies on the best of possible sensors to measure odours: people's own nose. With Citizen Science tools, such as *OdourCollect*, pilot communities can map and measure the problem. Armed with scientific, validated data, people will be empowered to become their own driving force for change. Following a quadruple helix model, citizens and stakeholders will co-design local solutions, which will filter up to a multi-level governance framework that can ultimately be used to introduce odour pollution into the policy agenda.

**OUR METHODOLOGY**

D-NOSES aims to improve on existing engagement methodologies from project partners Ideas for Change (IFC) and Mapping for Change (MfC) through a comprehensive field evaluation of different methods. A combined approach will enable D-NOSES to create a reliable, replicable method that should be universally applicable in diverse regions and situations around the globe, to generate scientifically valid and actionable data through citizen science interventions that can improve people's lives.

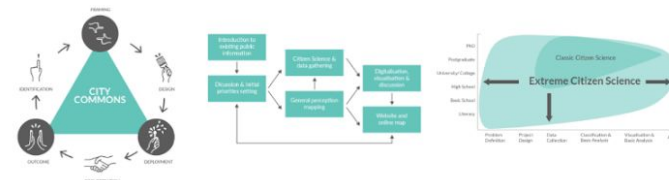
**Our engagement methodology**

The *Bristol Approach*<sup>3</sup>, as developed by IFC, puts the concerns of citizens at the very heart of the process, helping local communities to co-design and implement citizen science based interventions around matters of concern in their living areas, such as odour pollution, which lead to creative solutions and positive results. This ensures a high level of sustained engagement throughout the duration of the project, as citizens are prepared to give their time and energy to address matters that are relevant to the community.


The *engagement model by MfC*<sup>4</sup> is deliberately flexible to follow different pathways directed by discussions and needs of the local community. Guided by *Principle 10*, the model starts by introducing already existing and accessible information. Then it follows up with a facilitation process that supports communities to collect and share their own environmental data from citizen science observations. The generated data is then evaluated and improved in an iterative loop so that it can finally support the drive for change.

**Our inclusive citizen science approach**

With local needs and culture at the forefront, the *Extreme Citizen Science approach*<sup>5</sup> provides communities with a means to not only monitor their surrounding environment and analyse their findings but to also define the problem, co-design methodologies and tools that enable them to own, share, and act on their results. Our citizen science interventions are intrinsically inclusive and apply all the *Responsible Research and Innovation (RRI)* dimensions, with a special focus on the gender and science education aspects.



**OUR 10 PILOT INTERVENTIONS**



**OUR RESULTS**

From April 2018 to March 2021, and with a 3,1 M€ budget, D-NOSES will produce:

- The International Odour Observatory
- The Green Paper on Odour Pollution
- Scientific guidelines for policy-making
- The Strategic Roadmap on Odour Pollution
- DIY guidelines for project replicability

**REFERENCES**

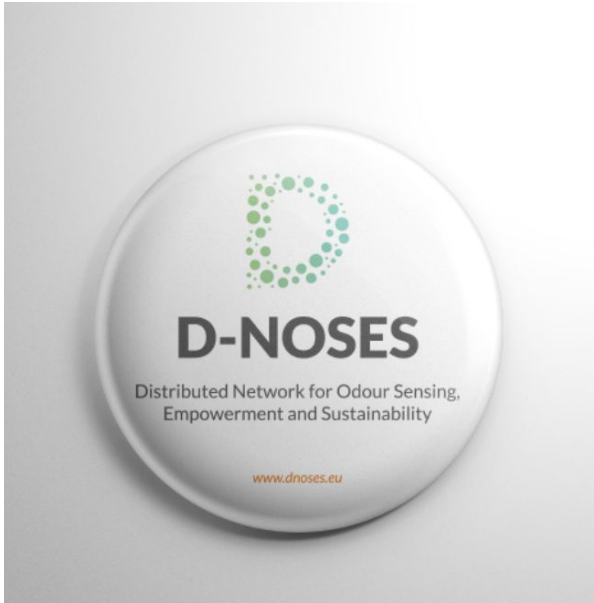
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Coordinated by:          

#OdourObservatory #dNosesEU @dNoses\_EU @dNOSES\_EU

Funded by the Horizon 2020 programme of the European Union Grant Agreement No 789315

Badges



Bags



T-shirts





## User Story Cards for Co-creating the Odour Observatory

 <b>D-NOSES</b> <small>Distributed Network for Odour Sensing, Empowerment and Sustainability</small> <p><b>I am a local resident and...</b></p> <p>I would like to find out if there is a local campaign to join so that together I and my neighbours can oppose the plans for a new development in my area that may cause odour issues.</p> <ul style="list-style-type: none"> <li>Does this situation sound familiar or likely for you personally? Y/N</li> <li>Where would you currently go to find this information? e.g. specific website, local library?</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Might you use the new Odour Observatory to help you with this? Y/N</li> </ul> <p><b>Comments:</b></p> <p>Please turn over to find out more about the Odour Observatory</p>	 <b>D-NOSES</b> <small>Distributed Network for Odour Sensing, Empowerment and Sustainability</small> <p><b>I am a local resident and...</b></p> <p>I want to be able to look for regulations in relation to odour issues in my area so that I can know my rights as a citizen and am able to raise a formal complaint.</p> <ul style="list-style-type: none"> <li>Does this situation sound familiar or likely for you personally? Y/N</li> <li>Where would you currently go to find this information? e.g. specific website, local library?</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Might you use the new Odour Observatory to help you with this? Y/N</li> </ul> <p><b>Comments:</b></p> <p>Please turn over to find out more about the Odour Observatory</p>
 <b>D-NOSES</b> <small>Distributed Network for Odour Sensing, Empowerment and Sustainability</small> <p><b>I am an activist and...</b></p> <p>I want to know what the general public thinks about odour in my city and if there have been any specific events, interventions or campaigns that have changed people's views.</p> <ul style="list-style-type: none"> <li>Does this situation sound familiar or likely for you personally? Y/N</li> <li>Where would you currently go to find this information? e.g. specific website, local library?</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Might you use the new Odour Observatory to help you with this? Y/N</li> </ul> <p><b>Comments:</b></p> <p>Please turn over to find out more about the Odour Observatory</p>	 <b>D-NOSES</b> <small>Distributed Network for Odour Sensing, Empowerment and Sustainability</small> <p><b>I am a local business owner and...</b></p> <p>I want to be able to show my customers that the local odour issue is not a constant problem nor dangerous so that they will return and use our services.</p> <ul style="list-style-type: none"> <li>Does this situation sound familiar or likely for you personally? Y/N</li> <li>Where would you currently go to find this information? e.g. specific website, local library?</li> </ul> <hr/> <ul style="list-style-type: none"> <li>Might you use the new Odour Observatory to help you with this? Y/N</li> </ul> <p><b>Comments:</b></p> <p>Please turn over to find out more about the Odour Observatory</p>